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EMERGING TRENDS AND CHALLENGES OF COPYRIGHT PROTECTION OF COMPUTER DATABASES AND SOFTWARE IN INDIA

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CERTIFICATE

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Place: Noida, DELHI

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A03104422014 has worked under my guidance and supervision to fulfil all requirements for the submission of this legal writing. The conduct of the researcherremained excellent during the period of research. I wish her success in life.

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Amity Law School, Noida Date: -_____/____/_____ Place: - Noida, Uttar Pradesh

DECLARATION

I, Lalawmpuii Sailo ,do hereby declare that this dissertation work titled titled **EMERGING TRENDS AND CHALLENGES OF COPYRIGHT PROTECTION OF COMPUTER DATABASES AND SOFTWARE IN INDIA** researched and submitted by me to the Amity Law School Noida in partial fulfilment of the requirement for the award of degree of master of laws in intellectual property law under the guidance and supervision of,Professor , Amity University of Advanced Legal studies is an original , bonafide and legitimate work .it has been pursued for an academic interest .this work or any type thereof has not been submitted by me or anyone else for the award of another degree of either this university or any other university .

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PREFACE

In recent years, there has been a significant increase in the use of computer databases and software in India, and with it, an increasing need to protect these valuable assets. Copyright protection is one of the key mechanisms used to safeguard the interests of the creators of these works, and to encourage innovation and creativity in the technology sector.

However, as technology continues to evolve rapidly, new challenges are emerging that threaten the efficacy of copyright protection in this domain. From issues related to the scope of protection offered by copyright law, to the difficulties of enforcing copyright in the digital age, there are a multitude of complex issues that must be addressed if we are to ensure the continued vitality and growth of India's technology industry.

This paper seeks to explore these emerging trends and challenges in depth, and to offer insights and recommendations for policymakers, practitioners, and stakeholders in the field of copyright protection. Through a careful analysis of relevant laws, case law, and industry practices, we aim to shed light on the current state of copyright protection for computer databases and software in India, and to identify strategies for addressing the challenges that lie ahead.

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LIST OF ABBREVIATIONS

AIR: All India Reporter

BIRPI: United International Bureaux for the Protection of Intellectual PropertyDel: Delhi

DTSA: Defend Trade Secrets Act of 2016EU: European Union

GATT: The General Agreement on Tariffs and TradeGI: Geographical Indications

IP: Intellectual property

IPR: Intellectual property rights

MRTP: Monopolies and Restrictive TradeNIA: National Innovation Act

SC: Supreme Court

TRIPS: Agreement on Trade-Related Aspects of Intellectual Property RightsWIPO: World Intellectual Property Organization.

WTO: World Trade OrganizationUN: United Nations

UNO: United Nations Organisation

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CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

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- Recommendations for improving copyright laws and enforcement in India
- Future prospects for copyright protection of computer databases and software inIndia

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ABSTRACT

India's copyright law has undergone several changes in recent years in order to bring it inline with international standards. One of the key areas of focus has been on digital copyright protection, as more and more content is being created and distributed online. This includes efforts to combat online piracy and infringement, such as by making it easier for copyright holders to take legal action against infringers.

Another important trend in "Indian copyright law is the recognition of fair use, which allows certain types of use of copyrighted material without permission from the copyrightholder." This promotes greater flexibility for users while still protecting the rights of copyright holders.

Statutory and compulsory licensing are also emerging trends in Indian copyright law, allowing for the use of copyrighted material without permission in exchange for compensation. This can be beneficial for industries where obtaining permission from all copyright holders may be difficult. Protection of performers' rights is another important area of focus in Indian copyright law, ensuring that performers are properly compensated and have control over how their performances are used and distributed.

India is also taking steps to protect traditional knowledge, which refers to knowledge andpractices developed by indigenous communities over time. Legal frameworks are being developed to protect traditional knowledge and ensure it is not exploited without permission. Overall, these emerging trends in Indian copyright law promote innovation and creativity while balancing the rights of copyright holders and users.

OBJECTIVES

1. The objective is to uncover the practical and legal difficulties owners and artists encounter when trying to safeguard computer databases and software against copyright infringement.
2. The purpose is to examine the limitations of the "Indian Copyright Act of 1957's"protection that it offers in the area of computer databases and software.
3. The goal is to assess the efficiency of the present enforcement procedures for India's copyright laws pertaining to computer databases and software.
4. The goal is to gauge Indian citizens' and businesses' degree of understanding of the value of copyright protection for their software and database.

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5. In order to protect their intellectual property rights in computer databases, Small and Midsize Companies (SMEs) should study the tools accessible to them.

6. To provide recommendations for improving the legal framework, enforcement mechanisms, and awareness among individuals and companies to better protect the copyright of computer databases and software in India.

RESEARCH METHODOLOGY

For this research the researcher shall be using Doctrinal research Methodology wherein she shall refer to various articles, books and case studies to understand the topic. The researcher through the method of conceptual analysis will be analysing qualitative data.

The doctrinal research methodology involves a systematic approach to legal research thatinvolves the following steps:

1. Identifying the research question or topic to be studied.

2. Conducting a comprehensive literature review to identify relevant legal sources, including legislation, case law, and legal literature.

3. Analyzing the legal sources to identify the relevant legal principles and doctrinesthat relate to the research question or topic.

4. Synthesizing the legal principles and doctrines into a cohesive legal analysis,using legal reasoning and logical arguments.

5. Applying the legal analysis to the research question or topic to provide a conclusion or recommendation.

6. Reviewing and revising the analysis and conclusion based on feedback andcriticism.

HYPOTHESIS

Due to several legal, technological, and cultural barriers that prevent the effectiveenforcement of copyright laws, protecting computer databases and software against infringement presents considerable difficulties in India.

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Explanation:

Legal Factors:

1. Ambiguity in Copyright Laws: The current copyright laws in India are notcomprehensive and do not explicitly address the protection of computer databasesand software, creating confusion and uncertainty for copyright holders.

2. Weak Enforcement Mechanism: Although the legal framework for copyright protection exists in India, the enforcement mechanism is weak, and often there isa lack of effective enforcement measures to safeguard the rights of copyright holders.

Technological Factors:

1. Difficulty in Enforcement of Rights: The digital nature of computer databases andsoftware makes them vulnerable to piracy, and the use of technology makes it easier to copy and distribute digital content. This makes it challenging to monitorand enforce copyright infringement.

2. Rapid Technological Advancements: The fast pace of technologicaladvancements in the field of computer databases and software makes it challenging for legal frameworks to keep up, creating gaps in the protection of copyrighted material.

Cultural Factors:

1. Lack of Awareness and Respect for Intellectual Property: There is a general lackof awareness and respect for intellectual property rights in India, includingcopyrights, which makes it difficult for copyright holders to safeguard their workfrom infringement.

2. High Tolerance for Piracy: Piracy is widespread in India, and many people see itas a minor issue, which makes it difficult to create an environment that is conducive to the effective enforcement of copyright laws.

In India, copyright protection of computer databases and software presents a number ofcomplex problems that need for all-encompassing legal, technological, and cultural solutions. To protect the rights of copyright holders, copyright laws must be more strictly enforced and awareness must be raised.

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CHAPTER 1: INTRODUCTION

The growth-oriented transformation in economic policy demands that the latest information be made available to everyone in all professions. This has led to a significant transformation in the communications industry, and technology has played a vital role in this transformation. The increasing use of computer software has allowed usto automate manual processes, which has led to an increase in productivity and efficiency. However, this has also led to some issues, such as piracy.

As software development takes a lot of time and money, it is easier and cheaper to reproduce the software by pirating the original. This can lead to a situation where software developers may not find it profitable to invest in developing new software. Therefore, it is important to protect software developers from piracy. Specialised judgesare needed to handle copyright infringement cases involving software, and a specialisedforce is needed to detect such infringements due to the complexity and variety of infringement methods.

The legal position of databases and software protection is a question that needs to be answered. “The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) sets out the legal position of intellectual property protection in the international trade context.” The Copyright Act of 1957 safeguards "original" works, and the difference between "idea" and "expression" is subtly highlighted. The CopyrightAct may provide protection for compilation works, which includes databases and computer software.

However, it is unclear whether the "Sweat of the Brow" doctrine, which has been usedin India to interpret copyright matters, is still applicable. This doctrine suggests that copyright protection should be granted to works that require a significant amount of effort and skill to create, even if they lack originality. Furthermore, the "Modicum of Creativity" idea may be used to defend databases and computer software. This idea suggests that copyright protection should be granted to works that demonstrate a minimal level of creativity, even if they lack originality.

Finally, it is important to determine whether punitive damages can be paid when databases and software are stolen. Punitive damages are a form of compensation that is awarded to the plaintiff as a way of punishing the defendant for their wrongful conduct.However, it is unclear whether punitive damages can be paid in cases of copyright infringement involving databases and software. This is an important question that needsto be answered to ensure that copyright owners are adequately compensated for their losses.

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DEFINITION OF COMPUTER DATABASE AND SOFTWARE

COMPUTER DATABASE

A database is a “planned collection of material that has been arranged and is typically kept electronically in a computer system. A database management system (DBMS) typically has control over a database.” The term "database system," which is frequentlyused as a synonym for "database," refers to “the collection of data, DBMS, and associated applications.”

There are database present which helps and aids with regard to the processing and dataquerying. Some of them are popular database and in the recent times are used in tremendous form to describe their data in a tabular format. However, it is possible to further organise the data and also to upgrade it as per the need. “For writing and querying data, most databases use Structured Query Language (SQL).” It is further important to take note that that the relational database seeks to employ the language ofthe computer SQL that is used to further access and control the data. Oracle had a significant role in the development of the SQL ANSI standard, which was initially developed at IBM in the 1970s. Since then, thanks to “SQL, businesses like IBM, Oracle, and Microsoft have all experienced substantial growth. Other programming languages are starting to emerge, despite SQL's continued popularity.”

There have been many changes since the early 1960s, when databases were first created. Navigational databases, which included “the hierarchical database (which relied on a tree-like architecture and only enabled a one-to-many connection) and the network database (a more flexible model that permitted numerous linkages), were the first systems used to store and update data.” Initially, the mechanisms were simple but limited. “The 1980s saw the rise of relational databases, whereas the 1990s saw the rise of object-oriented databases. NoSQL databases were developed more recently in response to the growth of the internet and the need for speedier processing of unstructured data. Cloud databases and self-driving databases are currently revolutionising data collecting, storage, management, and use.”

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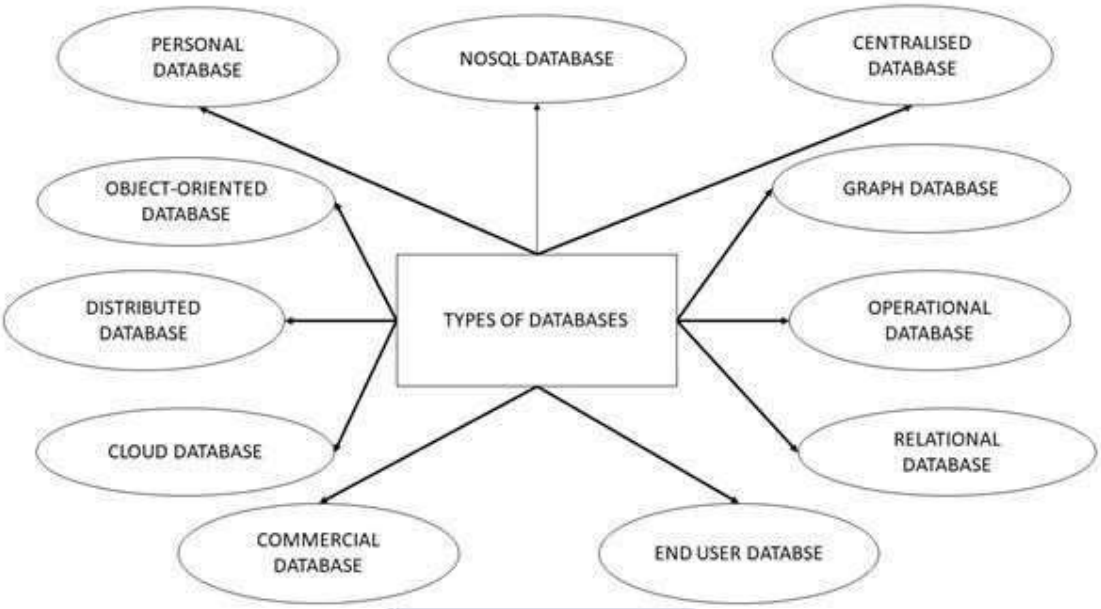
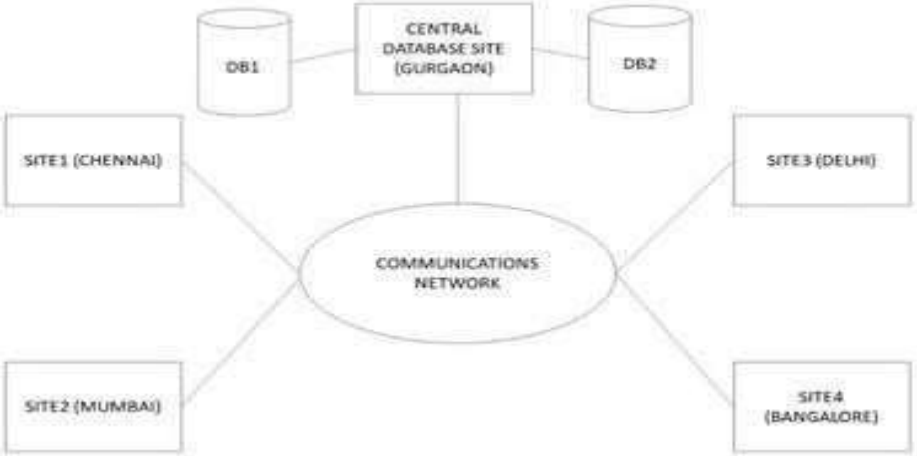
VARIOUS TYPES OF DATABASE



1. CENTRALISED DATABASE

Users can access the information from different locations thanks to its central storage.Users can remotely inspect the data by using the application techniques of this sort ofdatabase.

Numerous authentication procedures are used to guarantee end-user verification and correctness. A registration number that tracks and reports data consumption is further provided by application procedures. The management of this problem rests on the localoffice.



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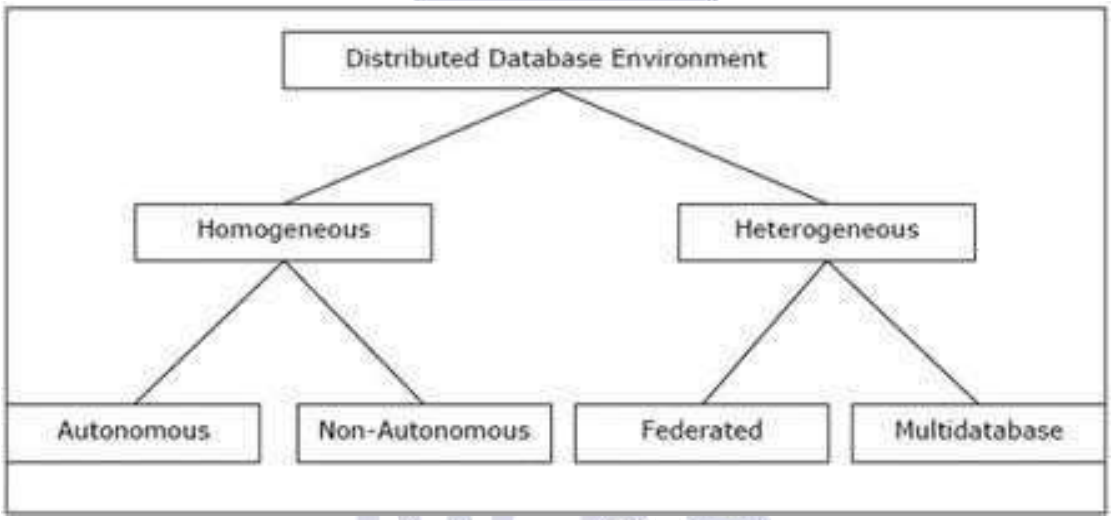
2. DISTRIBUTED DATABASE

A distributed database incorporates data from both a shared database and local computers, which makes it fundamentally distinct from a centralized database. Instead of being kept in one place, the data is dispersed throughout many organizational locations. These locations can quickly access dispersed data since they are connected bycommunication lines.

A distributed database is one in which the application techniques are copied and dispersed over several points in a network and the various components are physicallystored in various places.

Distributed databases can be either homogenous or heterogeneous. Homogeneous databases are those in a DDB that utilize the same application methods, run on the sameoperating systems, and have the same underlying hardware as the rest of the DDB. A heterogeneous DDB, on the other hand, has many locations with various operating systems, underlying hardware, and application techniques.



3. PERSONAL DATABASE

"Data is acquired and stored on manageable, portable personal computers. The data isfrequently used by the same department inside an organisation, and only a select few have access to it."

END USER DATABASE

- Designed with the end-user in mind
- Contains a summary of all data
- End-users have little interest in transactions or actions taken at different levelsand are only concerned with the product
    - Used for decision-making at the user levelCOMMERCIAL DATABASES
- Premium versions of large databases

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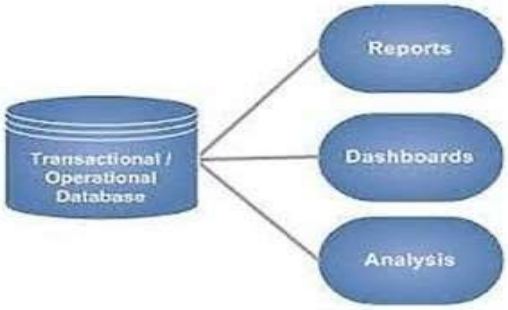
- Cater to specific subjects
- Large amounts of data are not feasible to maintain
- Accessible through sponsored links
- Used for research purposesNOSQL DATABASES
- Employed for huge distributed data collection
- Can handle big data performance challenges with ease
- Able to analyze large amounts of unstructured data kept on multiple cloudvirtual servers
- Used for data analytics and processingOPERATING DATABASE
- Contains data related to an organization's operations
- Used in functional areas like advertising, employee relations, and customerservice
- Provides real-time data to support operational decision-making
- Helps in monitoring and managing organizational operations

End User, Commercial, NoSQL, and Operating databases serve different purposes andcater to different needs. While End User databases are created with end-users in mind and contain a summary of all data, Commercial databases are premium versions that cater to specific subjects. NoSQL databases are used for distributed data collection, while Operating databases contain data related to an organization's operations and provide real-time data to support operational decision-making.



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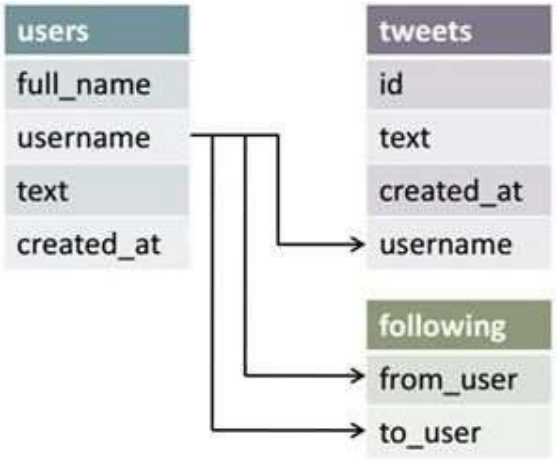
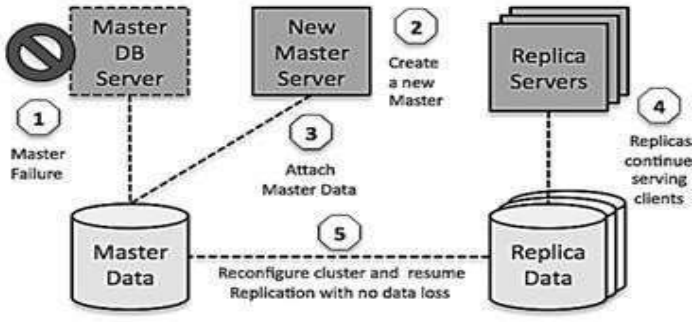
7. RELATIONAL DATABASES

In these databases, the information is arranged into several tables based on predefined categories. "The table contains entries for data for several categories, and each row in the table has one instance of the data that is described according to the category. As the common user and application programming interface for relational databases, SQL is used. These databases are simpler to expand, link two databases with a shared relation,and change any active applications since a variety of simple operations may be performed over the table."



8. CLOUD DATABASES

"The explicit storage of data on clouds, also known as virtual environments, whether they be hybrid, public, or private clouds, has become the norm." The term "cloud database" refers to a database that has been developed or optimized for use in such a virtualized system. "A cloud database has a variety of benefits, including as on-demandscalability and high availability, the opportunity to pay for storage and bandwidth on a per-user basis, and more." Using a cloud database, companies may help business applications deployed as software as a service.



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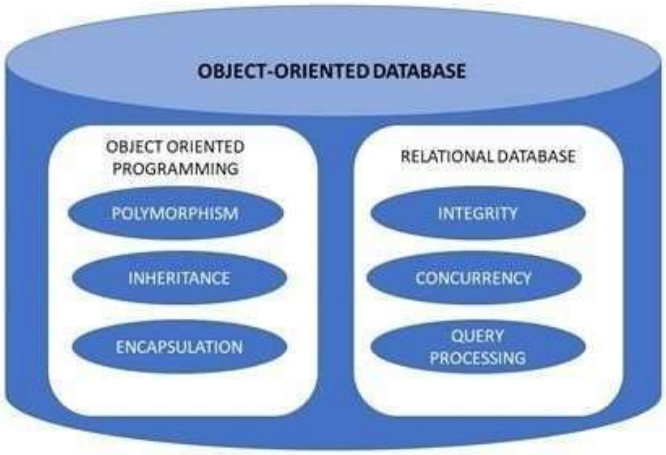
9. OBJECT-ORIENTED DATABASES

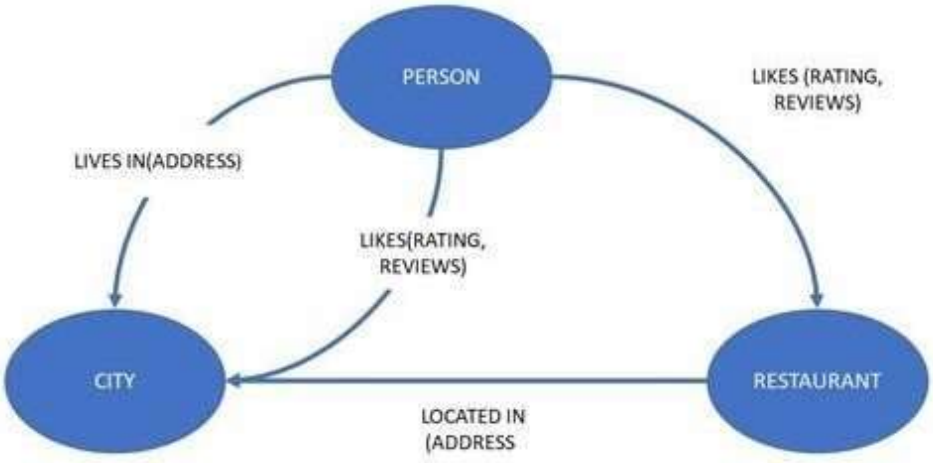
"Relational databases are combined with object-oriented programming to produce an object-oriented database. The majority of data produced using object-oriented programming languages like C++ and Java may be kept in relational databases, but object-oriented databases are truly more suited to hold that data."

An object-oriented database is set up around objects rather than actions and data. In a relational database, a single audio or visual record, as opposed to a single alphanumeric value, may constitute a particular data item.



11.GRAPH DATABASES

"The graph is made up of nodes and edges, where a node serves to represent an entityand an edge to show how those entities are related. In a graph-oriented database, or graph database, relationships are stored, mapped, and queried using graph theory."



"Graph databases are mostly used for network analysis. For instance, businesses mightextract client information from social media using a graph database."

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COMPUTER SOFTWARE

“Software is a set of instructions, information, or computer programmes that are used torun devices and perform certain tasks.” “Hardware, which is a term for a computer's exterior components, is the opposite of it. In this usage, "software" refers to the running scripts, programmes, and apps on a device. It may be compared to the changeable part of a computer, whereas the hardware is the part that will never change.”

“The two primary subcategories of software are application software and system software. Applications are software components that perform functions or meet particular needs. System software, which also serves as a platform for other software torun on, controls how a computer's hardware operates.”

Other types of software include programming software, which provides the programming tools required by software writers, driver software, which manages computer peripherals and devices, and middleware, which sits between system softwareand applications.

Early computer hardware and software were supplied together. Early software was developed for specific devices. “In the 1980s, software was first sold on floppy discs before moving on to CDs and DVDs. The majority of software available today may bebought online and downloaded immediately. Software may be found on websites for manufacturers or application service providers.”

COMPUTER SOFTWARE TYPES

Software is a group of computer programmes that provide computers instructions and information so they may carry out a range of tasks. Applications, operating systems, drivers, middleware, and programming software are only a few of the different types ofsoftware available.

Application software, which is the most common type, is designed to perform specifictasks for users or other programmes. These programmes can work alone or in conjunction with other programmes that take action on the user's behalf. Examples of application software include office suites, graphics programmes, databases, web browsers, software development tools, image editors, and communication platforms.

On the other hand, system software controls both the hardware and application softwareon a computer. “It establishes rules for how computer hardware works, arranges how

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the hardware and software interact together, and provides a framework or platform on which other software may run. The operating system (OS) is the best example of systemsoftware, which controls all other computer programmes. Other categories of system software include firmware, computer language translators, and system utilities."

Driver software, sometimes referred to as device drivers, is another type of software thatis typically categorised as system software. These programmes operate the connected peripherals and devices, allowing them to do their specific jobs. Any connected device, including non-standard hardware like specialised gaming controllers that come with software and widely used peripherals like USB storage devices, keyboards, headphones,and printers, must have device drivers in order to function.

Middleware is "a class of software that acts as a link between several platforms for running applications or between an application and the operating system." It enables many pieces of software, like Microsoft Windows, Word, and Excel, to communicate with one another. "The delivery of remote work requests from one programme runningon a machine with one kind of OS to another application running on a different OS is also made possible via middleware. Additionally, it allows newer apps to communicatewith legacy ones."

Programming languages and software are used by computer programmers to create code. These tools and programmes allow programmers to create, test, and debug other software applications. Compilers, debuggers, assemblers, and interpreters are examples of programming-related software.

distinct software has distinct functions depending on the kind. The phrase "applicationsoftware" describes a collection of programmes that carry out certain tasks, such accessing websites or producing reports. "These programmes may work together to complete a task and require the operating system and other system software programmes to function. Although desktop apps are downloaded and installed on the user's computer, they are not functional without an internet connection. Web applications, on the other hand, only require internet access; they don't require any additional hardware or system software. Users may launch web apps from any device with a web browser, regardless of the operating system, while system software maintains the computer's fundamental functions without requiring direct human interaction. It synchronises the hardware and software of a system, allowing users to perform specific tasks with high-level application software. When a computer starts up,the system software runs automatically and never stops as long as the device is turned on."

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Without software, a modern computer is incomplete. It's crucial for computer users, programmers, and developers to comprehend the many forms of software and how they work. Despite the fact that each type of software has a specific function, they all operatein concert to provide our computers and other devices the performance and functionalityto which we have grown used.

SIGNIFICANCE OF PROTECTING COPYRIGHTS FOR SOFTWARE AND DATABASES

The right to control how their creations are used, shared, and updated is ensured by copyright protection, which is crucial for databases and computer software. The following list of factors highlights the significance of copyright protection for databasesand software.

1. Promotes innovation: Copyright protection incentivizes developers of databases andsoftware to use resources—including time, money, and labor—in creating fresh, cutting-edge goods. Because their work might be easily duplicated and disseminated without their consent, authors would have no incentive to invest in creating new software or databases if copyright protection did not exist.

2. Preserves the value of the work: Copyright protection guarantees that those who create databases and software may profit financially from their effort. It also enablescreators to receive a reasonable return on their effort while preserving the work's economic worth.

3. Prevents software and database piracy: Copyright protection is crucial for preventingunlawful software and database distribution. Market share loss, a decline in innovation,and lost income are all consequences of piracy. The use of copyright protection ensuresthat authors have some degree of control over how and where their works are used, as well as shields them from having their work exploited without permission.

4. Offers legal remedy for software and database developers in the event of infringement. Copyright protection also offers protection against infringement. Use, duplication, or distribution of a work protected by copyright without authorization is infringement. Creators who have copyright protection are able to file lawsuits againstinfringers and obtain damages awards.

5. Assures quality control: The protection of intellectual property rights can also assist to guarantee that databases and software are of high quality. Authorized adjustments ortweaks that can lead to subpar goods can be avoided by creators by maintaining controlover their work and making sure it is only disseminated in the manner they intended.

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In summary, copyright protection is essential for “software and databases because it encourages innovation, protects the economic value of the work, prevents piracy and infringement, ensures quality control, and provides legal recourse in cases ofinfringement.”

BRIEF OVERVIEW OF COPYRIGHT LAWS IN INDIA

A legal concept known as copyright defends the rights of those who create audiovisual works, written works, musical compositions, stage plays, software, and architectural works. It is a group of rights that provide for the freedom to reproduce, distribute, modify, and translate the work. The Copyright Act of 1957 and the Copyright Rules setdown the rules governing copyright in India. Copyright defends the distinctive representation of knowledge and conceptions rather than just ideas, facts, or notions.

The original creator, “a person who inherits the creator's ownership rights, or the creator's authorized representative may all assert copyright. The Copyright Act gives thecreator of a work the financial right to create any cinematographic film or sound recording, modify the work, translate it, show or transmit it to the public, and distribute copies of the work. The Act also establishes moral rights, including a paternity right thatallows one to claim authorship of the work, an integrity right that safeguards one's honor and reputation, and a general right that forbids having a work unjustly claimed as one's own.” Even after the copyright has been assigned, the author is still the owner of these rights.

The Copyright Board, which had the authority to make decisions on certain copyrightenforcement issues, was dissolved in 2017 and its responsibilities transferred to the Intellectual Property Appellate Board (IPAB), which was later dismantled in 2021.
Currently, copyright enforcement cases are handled by Commercial Courts, a divisionof High Courts.

REGISTRATION

In accordance with the “Berne Convention for the Protection of Literary and Artistic Works of 1886 (Berne Convention), India is required to accord works with an origin outside of India the same level of protection in each of the signatory states.” The coretenet of the Berne Convention is that copyright registration is not required. Without registering a copyright, one can acquire legal protection in India. As a result, the Copyright Act of 1957 does not additionally necessitate registration.

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However, when it comes to enforcement, judicial decisions on the registration issue have been inconclusive. “The most recent stance of the Courts, however, emphasizes that registration is not necessary for the IP right to prevail and is consistent with the tenets of the Bern Convention. However, copyright registration has several advantages. A registered owner can also file a record of the registration with Indian Customs in order to safeguard against the importation of fake copies into India, for example. In the case of infringement, a copyright holder who has registered their copyright is entitled tostatutory damages rather than just an award for actual losses and profits, which can be challenging to establish in legal processes.” The registration of copyrights has this extrabenefit.

To register a copyright, the creator of the work must submit an application to the copyright office together with the necessary payment. There are other rounds of evaluation after that, including the opportunity to file objections in light of the copyright application. The petitioner must persuasively defend their position in the event that there are any objections. The registration process is eventually finished when the registrar enters the copyright's information into the Register of Copyrights and delivers the applicant the Extracts of the Register of Copyrights (ROC).

TIME PERIOD

“For original literary, dramatic, musical, and artistic works in India, the copyright duration is 60 years in addition to the author's lifetime. In situations when there are several authors, the time period is 60 years following the death of the final author. For cinematograph films, sound recordings, images, posthumously published works, anonymous and pseudonymous papers, works of governments, and works of international organizations, the duration is also 60 years following the year of publication. Photographs, computer programs, and unfinished cinematograph films are all protected by copyright for up to 60 years after the production of the original work. Performers' rights endure 50 years from the year of the performance, whereas broadcastreproduction rights expire 25 years after the transmission. Sound recording copyright is valid for 60 years from the year of original publication.”

RECENT EVOLUTIONS

“The Copyright (Amendment) Rules, 2021, which went into effect on March 30, 2021”,had two main goals: to promote accountability and transparency and to bring the current

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rules into compliance with other pertinent laws. The Copyright Rules Amendment also aims to improve efficiency by making electronic technology the main mode of interaction and employment at the Copyright Office. “The revised requirements for publishing a copyrights journal are now part of the amendments and may be seen on theCopyright Office's official website.”

The Copyright Societies are now obligated to publish an Annual Transparency Report for the general public in order to promote accountability and transparency. Such a reportfrequently offers details on dealings with foreign companies or organizations, license rejections, royalties collected and disbursed, and a number of other subjects.

To allow for a comprehensive evaluation, the Registrar of Copyrights' decision-makingwindow has been extended from sixty (60) days to one hundred and eighty (180) days after receiving a registration application for a copyright society.

Following the most recent modifications, "source and object code" for a piece of software need not be delivered in its entirety. The first and last 10 pages of the source code, or the whole source code if there are fewer than 20 pages, must be submitted, withno censored or blocked-out regions.

CHAPTER 2: COPYRIGHT PROTECTION FOR COMPUTER DATABASES IN INDIA

India has benefited from electronic commerce. It has changed how offices and businesses function, using fewer paper bundles and more database bytes and RAM. A gathering of data that has been carefully organised and documented is referred to as a database. This data may have been recorded on paper or on any other form of electronicmedia, such as a computer. Even while the need for databases like telephone directoriesis growing in the corporate sector as a whole, many makers of electronic databases are willing to face the risk and obligation of acquiring a lot of unstructured data and then having the opportunity to utilise it. They are a potent search engine that facilitates simple information access. The acquisition of such a database serves as the foundation of the company's whole business strategy, and it makes money through marketing, profits, or client payments.

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NEED FOR DATABASES PROTECTION

Database thieves may now replicate any database and redistribute it globally using a variety of electronic technologies, all for a fraction of the price that would normally bepaid to produce such products. As humankind becomes more reliant on computers anddigital information and as creative new methods for technology to duplicate and distribute data goods are invented, these problems will only worsen.

PROTECTION, IN INDIAN SCENERIO

In contrast to the European Union[1], India does not have a specific database protection law. Due to the government's view that the Copyright Act's current level of protection issufficient and that a need for additional protection has not yet materialised, sui generis[2] protection has not been established in India.

Thanks to the safeguards offered by Article 21 of the Indian Constitution, every citizenof India has the fundamental right to liberty and the right to privacy. Data theft is prohibited by the Indian Penal Code, 1860, and as "movable property" includes "corporal property," information saved on computers is likewise protected by this term.Therefore, any robbery, fraud, or criminal breach of trust is prohibited by the IPC. By incorporating a distinct clause in the contract for database confidentiality, the Indian Contract Act may be invoked.

In India, private and sensitive data is protected by the Information Technology Act, 2000. Section 66E of the Information Technology Act describes, among other things,the sanctions for breaking privacy regulations. Numerous more sections also cover various aspects of protecting database rights.

“The Copyright Act of 1957 protects a database's copyright.” In order to better protect copyright owners, the Indian Copyright Act, 1957 was revised in 1994. This allowed copyright holders to protect such computer-generated works and recognised a particularclass of computer programmes as a sort of literary work. The term "literary work" has been broadened by modifications to encompass things like computer databases, additional tables, compilations, and software. A "computer database" is a "literary work" as defined under Section 2(o) of the Copyright Act.

Because they view the database as a literary collection, database producers depend onIndian

[1] 27 member nations, most of which are in Europe, make up the supranational political and economicunion known as the European Union (EU).

[2] Sui generis, a Latin phrase that means "of its own kind," means "of its own kind." It alludes to anythingunique to it; belonging to a distinct kind or class. Sui generis refers to a distinct legal classification in legal circumstances.

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copyright rules. The TRIPS Agreement and the Berne Convention have both been ratified by India, hence it is essential to use creativity when choosing which business or database should be entitled to copyright protection.

Additionally, authorship rights is guaranteed to be under the Copyright Act, including inavant-garde works. There is no definition of creativity under the Indian Copyright Act, and the Indian courts have not adopted a firm stance on the subject. Typically, each issue is examined in light of its own set of facts and circumstances.

The idea of "sweat of the brow" has been endorsed by Indian courts when demonstrating copyright infringement for databases and is generally viewed as ameasure of aptitude, effort, and judgement.

Numerous cases, such as Govindan v. Gopalakrishna, McMillan v. Suresh Chunder Deb, and others, have resulted in court decisions stating that a compilation created bydevoting resources like cash, time, skill, and effort qualifies as a literary work and is therefore covered by copyright. In order to support their decisions, the courts argued that no one had the right to profit from another person's labour and that all creativity, nomatter how tiny, in a compilation was protected.

In a more recent case, the Delhi High Court held that while it is permissible for someone to create a compilation that is identical to one that already exists, it is not acceptable for them to gain from the work of the original compiler and infringe their copyright. The Court decided that facts must be gathered in a unique and creative manner in order to receive copyright protection, without taking into account how thosefacts were actually realised. According to the Feist decision of the US Supreme Court,the database's selection, organisation, or coordination of the subjects must demonstrate"a modicum of creativity" in order for the copyright to be protected.

COMPUTER DATABASES IN INDIA: LEGAL FRAMEWORK FORCOPYRIGHT PROTECTION

The legal framework in India for copyright protection of computer databases is mostlygoverned by the Copyright Act, 1957. Computer databases qualify for copyright protection because they fall under the definition of "literary works" as defined by the Copyright Act.

For copyright protection to apply, a computer database must be an original creation thathas been physically embodied. Since the database must be preserved on a physical medium like a hard drive, CD-ROM, or other storage device, it must be the result of the author's intelligence, judgement, and imagination.

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In India, computer databases are subject to copyright protection, which grants the ownerof the copyright certain exclusive rights. These include the rights to copy the database, distribute copies of the database, exhibit the database in public, and generate derivative works using the database as a source.

The data housed within computer databases in India are not protected by copyrightlaws, it is vital to remember this. This indicates that although the database's form, organisation, and structure are all protected by copyright, the actual data entries themselves are not.

The Information Technology Act, 2000 also includes some requirements for the protection of computer databases in addition to the Copyright Act. The Act, for instance, has rules for the security of digital signatures and for the criminal prosecutionof computer-related offences like hacking and data theft.

In India, the legal structure for copyright protection of computer databases is robust andoffers original database owners sufficient protection. To safeguard their databases frominfringement, database owners must take the necessary precautions and be informed of their rights.

Consequently, three international agreements provide protection for databases. thefollowing

1. THE BERN Convention

"A global agreement on the protection of literary and artistic works, the Berne Convention was created in 1886 and has 179 signatory countries. Most participating countries were also participants to the Paris Convention of 1971." Because of the selection and organisation of their contents, the convention's Article 2.5 restricts itself toa select group of literary or artistic works, such as encyclopaedias and anthologies, that are protected as such, without affecting the copyright in each of the individual works that make up such collections. Despite not being mentioned in the text, databases were considered to be "literary and artistic work."

2. TRIPS ACCORD

Several nations who are members of the World Trade Organisation (WTO) and the Berne Convention have approved the multilateral agreement known as the Trade Related Aspects of Intellectual Property Rights Agreement, which was signed in 1994 and went into effect in 1995. Compilations of data, whether or not machine readable, must be safeguarded in line with Article 10.2. Furthermore, it is claimed that it complieswith Berne's Article 2.5 and that calling it a "intellectual creation"—a term that is protected by rules controlling literary and artistic works—is simply an upgrade.

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3. COPIYRIGHT TRAIT

In 1996, this agreement was reached in Geneva, and it went into effect in 2002. It was aWIPO Treaty on the issue of safeguarding databases in a digital setting, and Article 5 ofthe treaty protects collections of data (databases) that contain authorship covered by copyright. The regulations address issues including manufacturing restrictions, sui generis protection, and electronic copyright dissemination. As of August 2021, 110 countries had ratified this agreement. The WCT and WIPO Performances and Phonograms Treaties collectively make up the WIPO "Internet Treaties".

CONDITIONS FOR COPYRIGHT PROTECTION

"Original literary, artistic, musical, or dramatic works, as well as motion picture and sound recording works, are all protected by copyright laws." Being original indicates that no part of the work was stolen from another source. "Copyright safeguards are in place as soon as a work is created, and registration is not necessary. However, registering is always advised for better security. Although it does not confer any rights,copyright registration is prima facie proof that the work has been entered in the Registrar of Copyrights' Copyright Register." The copyright doctrine does not apply toideas or facts. Once ideas are set in some concrete form, whether by their arrangement or original and creative presentation, they are protected by copyright.

These are the requirements for copyright claims:

Fixation: The ideas must be written out in detail. "Even while officially registering yourwork with the Copyright Office has benefits, copyright protection is always present. An expression is instantly covered by copyright rules the moment it is fixed in a tangible form." In other words, it covers published and unpublished works that are both finishedand unfinished.

Originality: A fixed statement of ideas can only be protected by copyright if it is original. Excellence and uniqueness are not requirements. Good or bad works are all protected by copyright rules. Copyright protects distinctive works that are similar butindividually created.

Minimal Creativity: Effort alone is not enough to secure copyright protection.Additionally, a certain amount of imagination is required.

Examples: a. A list of the parts for a child's toy is not likely to be covered by copyright.

"Copyright may be applicable to a page of instructions for assembling a toy from itsindividual

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parts."

b. "The entirety of a telephone white page is not covered by copyright."

A website that allows users to search a database of white pages can be protected bycopyright, as can a yellow pages directory with categories.

Limited Term: Depending on the nation and type of work, copyright protection is givenfor a specific amount of time. In most nations, a work's copyright protection is valid during the author's lifetime as well as a predetermined number of years following theirpassing.

Copyright protection is automatic, which means that it starts the moment a work is produced and fixed in a physical medium. Registration (Optional): Copyright protectionis automatic. However, registering with a governmental organisation, like the US Copyright Office, might offer other advantages like the capacity to file an infringement lawsuit and the assumption of ownership.

Fair Use: "The owner does not have the exclusive right to veto any uses of a work thatis protected by a copyright. According to a copyright law provision known as fair use,copyrighted works may be used in certain circumstances for things like criticism, commentary, news reporting, teaching, scholarship, and research."

Originality, fixation, expression of an idea, limitation of time, voluntary registration, and fair use are among the characteristics that must be met for copyright protection to apply. These guidelines should be understood by the authors and owners of copyrightedworks in order to safeguard their rights and prevent infringement.

SCOPE OF COPYRIGHT PROTECTION FOR COMPUTER DATABASES

Under the Copyright Act, 1957, computer databases are considered as "literary works" and are eligible for copyright protection. The scope of copyright protection for computer databases in India is broad and covers the original expression of the database,which includes the selection, arrangement, and presentation of the data.

The protection of computer databases in India includes the following rights for theowner of the copyright:

1. Reproduction of the database: The owner of the copyright has the exclusive rightto make copies

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of the database, including the right to create backups of the database. This means that no one else can reproduce the database without the permission of the copyright owner.

2. Distribution of the database: “The owner of the copyright has the exclusive rightto distribute copies of the database, either by sale or license. This means that no one else can distribute copies of the database without the permission of the copyright owner.”
3. Display of the database: The owner of the copyright has the exclusive right to display the database publicly, such as on a website or in a public database. Thismeans that no one else can display the database publicly without the permissionof the copyright owner.
4. Creation of derivative works: “The owner of the copyright has the exclusive right to create derivative works based on the database, such as by creating summaries or reports based on the data.” “This means that no one else can createderivative works based on the database without the permission of the copyright owner.”

It is crucial to remember that copyright protection for computer databases in India is subject to a number of restrictions, including the fair use doctrine. This implies that some restricted uses of the copyrighted content may be permitted without the copyright owner's consent, including criticism, commentary, news reporting, teaching, scholarship, and research.

Furthermore, it's crucial to understand that India's copyright laws for computer databases only protect the database's creative expression and not the data itself. As longas they do not reproduce the database's original expression, the copyright owner cannotforbid others from utilising the data contained therein.

In conclusion, “India's copyright laws for computer databases are comprehensive andonly protect the database's unique expression—not the data itself. Subject to some restrictions like the theory of fair use, the copyright holder has the only right to reproduce, distribute, display, and make derivative works based on the database.”

CHALLENGES IN ENFORCING COPYRIGHT PROTECTION IN COMPUTER DATABASE

DIGITAL AGENDA- “A work is considered copyrightable if it is said to be fixed in aphysical form of expression, such as a copy or phonorecord, and that embodiment is sufficiently stable or durable to allow for its reproduction or other long-term dissemination.” To put it in another way,

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"a work made on a word processor that is justimmediately exhibited on a screen or temporarily stored in a computer's memory is not fixed and cannot be covered by copyright."

- Some people believe that "using a database and simply rearrange the data to create something new does not violate the copyright of the original database. The alternative perspective holds that since data in databases are currently storedin computer memory without any particular order and are simply accessible for retrieval, rearranging data implies a violation of the original database. Another opinion claims that a compilation should not be eligible for copyright protection if no skill was used in choosing the individual items that would make up the database and if no skill was used in the arrangement (no keywords or indexing terms were added, just a listing)."
- New technologies that are now being developed, such as CD-ROM, multimedia,and cyberspace, have made it possible to store and transmit information databases, making them readily accessible to a wide range of users. The main problem is downloading.

ISSUES OF DOWNLOADING- Databases are treated as ordinary copyright works, regardless of their format—online, on a CD-ROM, or in another way. Such collections shouldn't be sent out without authorization over local or countrywide networks to multiple key stations, nor should they be downloaded or copied in any other manner (limited sections only for fair use purposes, such as research or private study). Neither should they be duplicated in any other way. The process of transferring information digitally from one database to another, particularly information from an online databaseservice, through the use of a local computer is referred to as "downloading." The primary issue at hand is whether or not downloading should be permitted. The problem has not been solved. In the case that downloading is permitted, there are those who are in favour of locating fair ways to pay for the use and reuse of the data resource, while there are others who are opposed to this idea.

For commercial online databases, remote access via telecommunications networks is increasingly becoming crucial. Using this technology, individuals can access a databasethat is housed in a central computer system from a distance. Data transmission through satellite raises copyright concerns that have not yet been resolved.

COMPUTER GENERATED WORKS- An important topic is who owns the creations that computers produce. Are these works appropriate copyright targets? If so, who is theowner of the copyright—the person using the software or the person running the computer programme?

"Does the term 'fair use' refer to the use of works produced by computers?"

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This suggests that the user is able to access and make use of the information includedwithin the database, such as citations, in the same manner that they would with any other work that is protected by copyright. “The owner of the copyright is the only person who has permission to save a computerised database in the memory of a computer.”

PROTECTING PERSONAL INFORMATION IN DATABASES- Nowadays, a lot of databases are created that store personal data about people, such as business card holders or library users. These databases have sparked concerns over the protection andabuse of peoples' personal information. In response to privacy concerns raised by thesedatabases, many nations have passed data protection laws that provide people the right to know what information is kept on them and what is contained in that information.[3]

DATABASES OF ABSTRACTS OF PUBLISHED ARTICLES- The question of whether a database of abstracts violates the authors' copyright has generated a lot ofdiscussion. In this instance, two inquiries are posed:

(i) Are the abstracts only factual reports?
(ii) Are the abstractions used in place of the original texts?

In the case of (i), a trend or collection of facts have no copyright. On the other hand, if the original item contained a substantial amount of text that was accurately replicated inthe abstract, it would probably be seen as a copyright violation. The original text shouldnot be replaced by the abstract, which should be somewhat shorter.

The prohibition of open piracy or illicit economically significant usage of the databasesis the key issue facing the database business.

To effectively enable the commercial activity, database protection rules would need to be applied with a high degree of confidence. “The requirements of scientific and technological enterprise for free information exchange and that data and information inthe general public domain should not be lost to the corporate interests are equally crucial. Any legal agreement or instrument for the protection of databases should strikea balance between the two objectives.”

[3] LISLU(:Legal Issues of Concern to the Library and Information Sector. journal of Information Science, 1995,21(4), 300-04

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CHAPTER 3: COPYRIGHT PROTECTION FOR SOFTWARE IN INDIA

“The Copyright Law in India protects computer software's Intellectual Property Rights(IPR). As a result, the provisions of the Indian Copyright Act 1957 provide protection for computer programme copyright.”

“The Copyright Act defines literary works as include computer programmes. A "computer programme" is a collection of verbal or written instructions that can be utilised directly or indirectly in a computer to achieve a certain goal.” The structure and design of computer programmes cannot be copied due to copyright laws. A programmemay violate even if no code was copied because the images, sounds, and look of a computer programme may be protected as audio-visual work.

A copyright is created for any addition or alteration to the source code that exhibits sufficient originality, just as one was created when the first lines of source code were produced by the programmer. As a result, a computer programme is typically coveredby a number of copyrights, beginning with the one that applies when it is originally developed and extending through the latest change.

EULA

An agreement between the licensor and the buyer of the right to utilise software is known as a software licence agreement. A user must "accept" many form contracts that are only available in digital form and only displayed as click-throughs. These documents might constitute contracts of adhesion because the user won't likely see themuntil after they've already paid for the programme. These papers frequently refer to themselves as EULAs (end-user licencing agreements).

In general, copyright rules guard the way an idea is expressed but not the concept itself.In the context of software, this often means that the algorithms and techniques contained in a programme are not protected expression, but the computer programme itself, in both human-readable (Source Code) and machine-executable (Object Code) form, is. Literal copying of source code and code for objects is prohibited.

All original literary works, whether published or unpublished, are protected by copyright; this definition covers computer programmes, tables, and compilations, as well as computer databases regardless of their tangible form. Therefore, in order to receive copyright protection, work must

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be recorded into a programme on some tangiblemedium.

Solutions for Copyright Software Infringement

1. Injunctions, both temporary and permanent
2. Seizing and destroying all counterfeit copies, including master copies
3. Actual financial losses plus the gain of the infringersStatutory damages, fourth
4. Court expenses and fair legal fees

LEGAL FRAMEWORK FOR COPYRIGHT PROTECTION OF SOFTWARE IN INDIA

In recent years, India has become a global leader in software services, with a particularemphasis on operating system platforms, applications, and network administration for industries like manufacturing, banking, insurance, and health care. As a result of this recent development, it is necessary to expand the definition of intellectual property rights (IPR), as unauthorised or illegal production of software poses a threat to the industry.

A group of instructions that direct a computer's actions are collectively referred to as software. It consists of the full set of applications, processes, and practises involved inrunning a computer system.

OVERVIEW OF SOFTWARE COPYRIGHT

The Copyrights Act of 1957 and the Patents Act of 1970 are the two main statutes that govern software protection in India. The definition of "literary work" in Section 2(o) ofthe Copyright Act of 1957 includes computer programmes, tables, and compilations, including computer databases.

“A computer programme per se, other than its technical relevance to industry or its coupling with hardware, is not patentable, according to the Patents Act of 1970. As a result, only when software is used in conjunction with hardware can it be registered as apatent.”

The expression of a concept, not the actual idea, is protected by the copyright laws in relation to software protection. In other words, it is referred to as a computer programme that also includes relevant documents and is protected in both its machine executable (also known as "Object Code") and human readable (also known as "SourceCode") forms. Therefore, it is illegal to reproduce the structure and design of computer programmes due to copyright. It cannot be denied that a

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program's methods and algorithms qualify as expression yet are not covered by copyright protection.

REGISTRATION OF SOFTWARE COPYRIGHT

- The "Source Code" (kept secret by the Authority) and "Object Code" (released by the Authority) must be included in the application, along with documentation of the applicant's identity, nationality, work description, address, copies of the work submitted, and the date the work was published.
- The authority makes the source code available in the journal after receiving theapplication.
- If no complaints are raised after 30 days of the public's access to the sourcecode, the process moves forward. If objections are submitted, a copyright hearing is held.
- If the application is approved, the examiner will check it for errors and notify theauthor of any discrepancies in writing. If there are no inaccuracies the application is accepted.
- When the work is approved by the registrar, copies of the work bear a copyrightnotice denoted by the symbol (copyright).

RIGHTS OF THE AUTHOR

If a group of people develops the software, the government gives them all these rights.

- The right to copy or even recreate the work, or to save it using any electricdevice.
- The authority to publish copies of the work.
- The right of the display software.
- Translation of Any format of the work
- Creation of a work adaption.
- For the necessary purposes, the work may be sold or rented.

The period of copyright protection for literary works published during the author'slifetime is 60 years, starting at the first day of the year after the author's passing.

INFRINGEMENT OF COPYRIGHTED SOFTWARE

Simply said, software piracy is theft, or the taking of another person's original concept and work. Legally speaking, it refers to the use, distribution, or reproduction of softwareproducts without

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the Author's consent. The process is as follows:

The right to copy or even recreate the work, or to save it using any electric device.

(i) End User Privacy: In this case, a business or individual user who haspurchased a licence for the installation of software on a computer uses that licence to install the software on further machines. The Business Software Alliance (BSA) is getting quite concerned about this phenomenon known as "under licencing." End user licencing agreements (EULAs) are signed by the software's creator and the buyer in order to prevent this.

(ii) Hard Disc Loading: This refers to the illegal pre-installation of software by computer sellers prior to the sale of the computers or theinstallation of legally purchased copies on multiple machines. ThesePCs are typically offered without any licencing information or discs.

(iii) software counterfeiting: Software copying illegally and selling it in aform that is nearly identical to the original product .

(iv) Internet piracy: In this case, software programmes are offered for sale and posted online for free download by others. This is the mostrecent and rapidly expanding type of software theft.

Every software author must register copyright due to the rise in competitiveness and e- business in all spheres of economic development. This is important for both the author'sown protection and to prevent software piracy from impeding national economic progress.

CONDITIONS FOR COPYRIGHT PROTECTION

“Original literary, artistic, musical, dramatic, cinematic, and sound recording works” areprotected by copyright laws. The protection is automatic from the moment the work is fixed in a tangible form, and registration is optional. However, registration is recommended for better protection. Ideas or facts are not protected, but the original and creative expression or arrangement of ideas is. In this article, we will discuss the conditions for copyright protection and its benefits.

Conditions for Copyright Claim:

Fixation:

The author must record the thoughts in a tangible form. Copyright protection is automatic once the expression is fixed in a tangible form. It applies to both completedand unfinished works, published and unpublished.

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Originality:

The fixed expression of ideas must be original for it to be protected by copyright. Excellence or originality is not necessary. Copyright laws protect all works, good or poor. Individual works that are similar yet independently produced are also protected bycopyright.

Minimal Creativity:

Copyright protection requires some degree of imagination. Working hard is insufficientto obtain copyright protection.

Examples:

The article gives examples to explain the concept of minimal creativity. “It is unlikelythat a list of parts for a child's toy is protected by copyright. However, copyright may apply to a page of instructions for putting together a toy from its component pieces.

Similarly, a telephone white page in its entirety is not protected by copyright. Still, copyright may apply to a yellow pages directory with categories. A website that allowsusers to search a database of white pages can also be protected by copyright.”

Limited Term:

Copyright protection is granted for a limited period, depending on the country and typeof work. In most countries, copyright protection lasts for the life of the author plus a certain number of years after their death.

Registration (Optional):

Registration with a government agency, such as the US Copyright Office, is not necessary for copyright protection. However, it provides additional benefits, such as the ability to sue for infringement and the presumption of ownership.

Fair Use:

“Copyright protection does not give the owner the right to control all uses of the work.Fair use is an exception to copyright law that allows for limited use of copyrighted works for purposes such as criticism, commentary, news reporting, teaching, scholarship, or research.”

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Copyright protection is subject to certain conditions, including fixation, originality, minimal creativity, limited term, optional registration, and fair use. Creators and ownersof copyrighted works should be aware of these conditions to protect their rights and avoid infringement. Although registration is not mandatory, it is recommended to obtainbetter protection. Fair use allows for limited use of copyrighted works for specific purposes.

SCOPE OF COPYRIGHT PROTECTION FOR SOFTWARE

In India, software is protected by the Copyright Act, 1957, which grants exclusive rightsto the owner of the software, preventing others from using or reproducing the software without the owner's permission.

The scope of copyright protection for software in India covers both the source code and object code of the software. Although copyright is created when the source code is written, it is actually the object code—which contains the actual commands that the computer follows when the programme is run—that is typically covered by copyright. Even though countless copies of the programme have been distributed as object code, the source code is typically never made public and is therefore kept as a trade secret. Aneasier way for a programmer to create or comprehend the programme was provided by the source code.

Although source code and object code are separate, it is nevertheless helpful to hold onto the idea that they are simply various versions of the same copyrighted work. For purposes of registration, the Copyright Office considers the source code and object codeto be equal.

This means that the owner of the software has the exclusive right to reproduce, distribute, and make adaptations of the software, as well as to perform or display thesoftware in public.

Copyright protection for software also covers any original graphics or user interfaces that are part of the software, as well as any accompanying documentation such as usermanuals and help files.

The protection provided by copyright law in India is automatic upon creation of the software, meaning that the owner of the software does not need to register it with any government agency to enjoy copyright protection. However, registration with the Copyright Office can provide additional benefits, such as the ability to sue for copyrightinfringement.

It is important to note that copyright protection only extends to the expression of an idea, not the

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idea itself. Therefore, if someone creates a similar software using their owncode, it would not be considered copyright infringement, unless the original software was copied directly.

In conclusion, the scope of copyright protection for software in India is comprehensiveand covers both the source code and object code of the software, as well as any accompanying graphics, user interfaces, and documentation.

CHALLENGES IN ENFORCING COPYRIGHT PROTECTION FORSOFTWARE

Enforcing copyright protection for software is a complex and challenging task in India,primarily due to several factors. Here are some of the challenges faced in enforcing copyright protection for software in India:

1. Software Piracy: Software piracy is one of the biggest challenges faced in enforcing copyright protection for software in India. Pirated software is widelyavailable in India, and it is challenging to identify and prosecute the offenders.
2. Lack of Awareness: There is a lack of awareness among the public regarding theimportance of copyright protection for software in India. Many individuals and businesses do not realize that software piracy is illegal and infringes on the copyright owner's rights.
3. Lack of Adequate Laws: The Copyright Act, 1957 governs copyright protectionin India, but it does not explicitly cover software-related copyright issues. Thereis a need for specific laws that address the challenges faced in enforcing copyright protection for software in India.
4. Difficulty in Proving Infringement: It can be difficult to prove software copyright infringement in India because of the lack of specific laws and regulations governing software copyrights. Additionally, establishing thesimilarity between two software programs can be challenging, and it mayrequire technical expertise to analyze and compare the software.
5. Lengthy Legal Procedures: Legal procedures in India can be time-consuming and complicated, leading to delays in enforcing copyright protection for software. The cost of litigation can also be high, making it difficult for softwarecopyright owners to pursue legal remedies.
6. Jurisdictional Issues: Software copyright infringement cases can involve multiple jurisdictions, making it challenging to identify the appropriate court to file the case. This can lead to delays in legal proceedings and further increase thecost of litigation.

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Enforcing copyright protection for software in India is a challenging task that requires the cooperation of multiple stakeholders. Addressing the challenges faced in enforcing copyright protection for software in India will require increased awareness, better laws,more efficient legal procedures, and collaborative efforts from all parties involved.

Copyright protection is essential for the growth and development of the software industry, as it ensures that software creators can enjoy the fruits of their labor while encouraging innovation and competition. However, enforcing copyright protection forsoftware is often a challenging issue, with many legal and technical challenges hindering the effective protection of these works. In this essay, we will explore the significant challenges in enforcing copyright protection for software.

One of the major challenges in enforcing copyright protection for software is the global nature of the software industry. Software developers and users are often located in different countries, with different legal systems, making it challenging to enforce copyright protection effectively. Moreover, some countries may not have adequate legal frameworks for protecting software copyrights, which can make it difficult for softwarecreators to take legal action against infringers.

Another significant challenge in enforcing copyright protection for software is the issueof piracy. “Piracy is the unauthorized use or reproduction of copyrighted works, and it is a significant problem in the software industry.” Software piracy can take many forms,including unauthorized copying and distribution of software, illegal file sharing, and counterfeiting. Piracy is challenging to detect and prevent, as infringers often use sophisticated technologies to hide their activities.

The technical nature of software is also a significant challenge in enforcing copyright protection. The code used to develop software is often complex, making it difficult to identify copyright infringement accurately. Moreover, software is often subject to frequent updates and modifications, making it challenging to keep track of changes anddetermine whether infringement has occurred.

The issue of reverse engineering is also a significant challenge in enforcing copyrightprotection for software. Reverse engineering refers to the process of decompiling or analyzing software to understand its underlying code or functionality. This can be a challenging issue in copyright law, as reverse engineering can be used to create competing software or identify vulnerabilities in existing software. This can lead to legal disputes and challenges in determining the scope of copyright protection forsoftware.

Enforcing copyright protection for software also requires significant resources and expertise. Software creators may lack the resources and expertise to identify and takelegal action against

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infringers, making it challenging to enforce copyright protection effectively.

In conclusion, enforcing copyright protection for software faces significant challenges,including the global nature of the software industry, piracy, the technical nature of software, reverse engineering, and resource constraints. Addressing these challenges requires a comprehensive approach that takes into account the legal and technical aspects of copyright protection. Policymakers, software developers, and users must work together to create effective and efficient systems of copyright protection that promote innovation, creativity, and development in the software industry while protecting the rights of software creators.

CHAPTER 4: CHALLENGES TO COPYRIGHT PROTECTION TOCOMPUTER DATABASES AND SOFTWARE

The protection of intellectual property rights is essential for the growth and development of the software industry. However, the copyright protection of computerdatabases and software has been a challenging issue, with various legal and technical challenges hindering the effective protection of these works. “In this essay, we will explore the significant challenges to copyright protection of computer databases and software.”

One of the major challenges to copyright protection of computer databases and softwareis the issue of originality and creativity. Copyright law generally protects works that areoriginal and creative. However, it is often challenging to determine the level of originality and creativity required for software and databases. The software industry has grown rapidly, with many developers creating new software and technologies that are often based on existing ones. This makes it difficult to determine the level of originalityand creativity involved, which can hinder the effective protection of software and databases.

Another significant challenge to copyright protection of computer databases and software is the issue of reverse engineering. Reverse engineering refers to the process of decompiling or analyzing software to understand its underlying code or functionality.
This can be a challenging issue in copyright law, as reverse engineering can be used to create competing software or identify vulnerabilities in existing software. This can leadto legal disputes and challenges in determining the scope of copyright protection for software and databases.

The issue of fair use is also a significant challenge to copyright protection of computer databases and software. Fair use is an essential exception to copyright law that allows limited use of copyrighted works without permission for specific purposes, such as criticism, commentary, or

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research. However, determining whether a particular use of software or databases is fair use can be a challenging issue, leading to legal disputes and challenges in determining the scope of copyright protection for these works.

The challenges of enforcing copyright protection for computer databases and softwareare also significant. The global nature of the software industry, with developers and users located in different countries, can make it challenging to enforce copyright protection effectively. Moreover, the technical nature of software and databases can create significant challenges in identifying copyright infringement, leading to difficulties in taking legal action.

The copyright protection of computer databases and software faces significant challenges, including issues of originality and creativity, reverse engineering, fair use, and enforcement. Addressing these challenges requires a comprehensive approach that takes into account the legal and technical aspects of copyright protection. Policymakers,developers, and users must work together to create effective and efficient systems of copyright protection that promote innovation, creativity, and development in the software industry.

Copyright protection for computer databases and software faces several challenges,including:

1. Copyrightability: In some jurisdictions, “there is a debate regarding whether computer databases and software qualify for copyright protection. Some argue that these works are functional in nature and, therefore, should not be protectedby copyright.” This debate can make it challenging to enforce copyright protection for computer databases and software.

2. Difficulty in Proving Infringement: It can be challenging to prove infringement of copyright for computer databases and software because these works may nothave a physical form. It may require technical expertise to analyze and compare the software or database to identify any similarities that could indicate infringement.

3. Reverse Engineering: “Reverse engineering of software and databases is a common practice in the technology industry, and it can make it difficult to enforce copyright protection. If a competitor creates a similar database or software program through reverse engineering, it may be challenging to provethat the new work is a copy of the original work.”

4. International Jurisdiction: Computer databases and software are easily accessible and can be distributed worldwide, making it difficult to enforce copyright protection in different jurisdictions. Different countries have different laws regarding copyright protection, which can make it challenging to enforce copyright protection for computer databases and software globally.

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5. Rapid Technological Advances: Technological advancements are rapidly changing the landscape of the software and database industry, making it challenging to keep up with the changing trends and technologies. This can make it challenging to enforce copyright protection for computer databases andsoftware effectively.

SO, enforcing copyright protection for computer databases and software is a complex and challenging task that requires the cooperation of multiple stakeholders. Addressingthe challenges faced in enforcing copyright protection for computer databases and software will require increased awareness, better laws, more efficient legal procedures,and collaborative efforts from all parties involved.

LACK OF CLARITY IN COPYRIGHT LAWS FOR COMPUTER DATABASES AND SOFTWARE

The copyright laws for computer databases and software have been a contentious issuein many countries, including India. One of the major challenges in this area is the lack of clarity in the copyright laws, which often creates confusion among software developers, content creators, and users. This essay will explore the lack of clarity in copyright laws for computer databases and software and its impact on the software.

Lack of precise definitions for crucial concepts like "originality," "creativity," and "derivative works" is one of the major problems with copyright rules for computer databases and software. These phrases are essential for figuring out if databases and software are copyrighted, but different jurisdictions define them differently, which causes uncertainty among developers and content producers. For instance, the Copyright Act of India categorises software as a literary work, but it offers no expressprotection for databases, making it challenging to assess whether or not they are copyrightable.

Determining the extent of protection is difficult because copyright regulations for software and databases on computers are not clearly defined. For instance, in certain jurisdictions, the copyright protection for software also applies to the source code, whereas in others, it only protects the product's functional components. Software developers may become perplexed as a result of the inconsistent copyright regulations,which may result in legal issues and impede innovation and research.

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The vagueness of the fair use doctrine is a fundamental problem with copyright rules forcomputer databases and software. A crucial exception to copyright laws is fair use, which permits the restricted use of works protected by copyright without seeking permission for things like criticism, commentary, news reporting, teaching, scholarship,or research. The fair use concept, however, is frequently unclear, making it challenging to decide whether a specific use of copyrighted material is fair or not. The lack of innovation and originality in the software industry is a result of the uncertainty this ambiguity causes among software developers.

The lack of clarity in copyright laws for computer databases and software has a significant impact on the software industry. It leads to legal disputes, hindering innovation, research, and development of new software and technologies. Moreover, itcreates a negative impact on the economy, as companies may face legal challenges, leading to significant financial losses.

The lack of clarity in copyright laws for computer databases and software is a significant challenge faced by the software industry. The lack of clear definitions of keyterms, ambiguity in the scope of protection, and uncertainty in the fair use doctrine create confusion among developers, content creators, and users. It is essential for policymakers to address these issues and provide clear guidelines for the copyright protection of computer databases and software. This will help promote innovation, research, and development of new software and technologies, and create a positive impact on the economy.

Revolutionary changes have been brought about by digital technology in the fields of Software and database. Modern technologies have made it considerably simpler for theaverage person to communicate, distribute, and reproduce works of art. Making identical copies and transmitting them quickly to a population of millions spread out over distances has become more simpler thanks to digitalization.

It is possible to carry out all of this without the owners knowing and finally take advantage of their interests. Both a need and a threat have emerged from the internet.The rights of copyright holders have been threatened by a number of concerns.

The lack of clarity in copyright laws for computer databases and software is a significant challenge faced in protecting these works. Here are some of the factorscontributing to the lack of clarity in copyright laws for computer databases and software:

1. Varying Definitions: The definitions of what constitutes computer databases andsoftware may vary depending on the jurisdiction. This can create confusion and uncertainty regarding what qualifies for copyright protection.

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2. Functional Nature: Computer databases and software have a functional nature, and this can make it challenging to distinguish between the functional aspects ofthe work and its creative expression. This can make it difficult to determine what aspects of the work are eligible for copyright protection.

3. Lack of Specificity: Some copyright laws do not specifically address computerdatabases and software, which can make it challenging to enforce copyright protection for these works. This can lead to legal ambiguity, and it can be challenging to determine what actions constitute copyright infringement for computer databases and software.

4. Rapid Technological Advances: The technology industry is continually evolving, and new developments in software and databases are emerging at arapid pace. This can make it challenging to update copyright laws to keep upwith the latest technologies and ensure that these works are appropriately protected.

5. International Jurisdiction: Computer databases and software can be accessed and distributed globally, and different countries have different laws and regulations regarding copyright protection. This can create confusion and uncertainty regarding which laws apply to a particular work, and it can be challenging to enforce copyright protection in different jurisdictions.

The lack of clarity in copyright laws for computer databases and software is a significant challenge faced in protecting these works. It is essential to address these challenges and ensure that copyright laws are updated and specific to address the uniqueaspects of computer databases and software. This will help to ensure that these works are appropriately protected and encourage innovation in the technology industry.

DIFFICULTY IN PROVING INFRINGEMENT AND COPYING

"The legality of copyright infringement must be carefully considered, and both the original work and the allegedly infringing work must be examined. Because it establishes who has the exclusive right to reproduce, distribute, perform, and exhibit thework, copyright ownership is essential. The next step after proving ownership is to show that the alleged infringer had access to the original work and that it was copied. Ifthe purportedly copied work is not identical to the original or remarkably similar, this may be challenging."

If the owner of the exclusive copyright can prove that their rights were violated, they may be

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entitled to a range of punishments, including monetary damages, statutory damages, injunctions, legal fees, and even jail time. The copyright holder must show both a valid copyright and that the original work was utilised improperly in order to establish copyright infringement. This can be accomplished by displaying a copyrightcertificate or other proof of the work's creation date and proving that the infringer hadaccess to the original work.

The copyright owners must also demonstrate that the copied work is eerily close to theoriginal. If the purportedly copied work has been marginally tweaked or changed, this may be difficult. Although the copying party may assert independent production as a defence, it is frequently challenging to sustain this argument if the original work is freely accessible to the general public.

Cases involving copyright infringement can be difficult, and the evidence must be carefully examined. Working with a legal professional is crucial because they can guideyou through the legal system and assist you choose the best line of action for copyright protection.A reminder of how challenging it might be to prove copyright infringement comes from the Funky Films, Inc. v. Time Warner Entertainment case. According to theclaim made against Funky Films, the award-winning Home Box Office miniseries "Six Feet Under" breached the rights of the screenplay for "The Funk Parlour." On appeal, the district court's conclusion that "The Funk Parlour" and "Six Feet Under" weren't really comparable was called into question.

In “Funky Films, the district court assumed that the defendant had access to the plaintiff's materials. In order to establish "access" in most circumstances, a plaintiff must show that the defendant had the opportunity to review or copy the plaintiff's work.This opportunity must be a "reasonable opportunity" as opposed to a "bare possibility" where anything is possible. After establishing access, a judge will decide if the two publications are substantially similar.” The concept of considerable similarity and the issue of access are closely intertwined in the Ninth Circuit. The "inverse ratio rule" establishes a lower standard of proof of substantial similarity when a high degree of access is shown.

Strong evidence is required to fulfil the extrinsic standard, as the Ninth Circuit found inits Funky Films decision. A work's analytical analysis and an expert witness are typically required for the extrinsic test. In situations like Funky Films, the focus is on articulable similarities between protected components (such not scenes a faire) of the two works rather than core story concepts.

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JURISDICTIONAL CHALLENGES ENFORCING COPYRIGHT PROTECTION

Copyright protection is essential for promoting creativity and innovation, but enforcingcopyright protection can be challenging, particularly in today's globalized digital economy. One of the significant challenges of enforcing copyright protection is jurisdictional challenges, which can arise when trying to enforce copyright protection for works that are distributed and accessed globally, such as computer databases and software. This essay will discuss the jurisdictional challenges of enforcing copyright protection and explore possible solutions.

One of the primary jurisdictional challenges in enforcing copyright protection is the different laws and regulations that exist in different countries. Copyright laws and regulations vary by jurisdiction and can create confusion and uncertainty regarding theenforceability of copyright protection for works that are distributed globally. The different laws and regulations can also make it challenging to determine which laws apply to a particular work. This can create legal ambiguity and make it challenging to enforce copyright protection effectively.

Another challenge is the difficulty in obtaining evidence to prove copyright infringement. Enforcing copyright protection requires evidence of infringement, which can be challenging to obtain in different jurisdictions. Gathering evidence may requirelegal action in multiple countries, which can be time-consuming and costly.

Additionally, the legal requirements for obtaining evidence may differ acrossjurisdictions, further complicating the process.

The lack of international treaties and agreements regarding copyright protection is another jurisdictional challenge. There is a lack of international treaties and agreements regarding copyright protection, which can make it challenging to enforce copyright protection in different jurisdictions. Some countries may not recognize the copyright laws of other countries, leading to legal ambiguity and challenges in enforcement.

Language and cultural barriers can also create challenges in enforcing copyright protection. Understanding legal proceedings and requirements in different jurisdictionscan be difficult due to language and cultural barriers. This can make it challenging to navigate legal systems in different countries and enforce copyright protection effectively.

Finally, cross-border infringement can create challenges in enforcing copyright protection. Copyright infringement can occur across borders, making it challenging toenforce copyright

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protection in different jurisdictions. This can be particularly problematic when it comes to digital works, such as computer databases and software,which can be easily accessed and distributed globally.

To address these jurisdictional challenges, there are several possible solutions. One solution is to work towards greater international cooperation and agreement on copyright laws. This can include creating international treaties and agreements that establish common copyright laws and regulations that apply across jurisdictions. This would provide greater clarity and certainty regarding the enforceability of copyright protection for works that are distributed globally.

Another solution is to improve international legal cooperation and collaboration. This can include improving the mechanisms for obtaining evidence across borders and establishing mutual legal assistance agreements that enable law enforcement agencies tocollaborate across borders. This would make it easier to obtain evidence and enforce copyright protection effectively across different jurisdictions.

In conclusion, enforcing copyright protection is essential for promoting creativity and innovation, but jurisdictional challenges can make it challenging to enforce copyright protection effectively, particularly for works that are distributed globally. To address these challenges, it is essential to work towards greater international cooperation and agreement on copyright laws, improve international legal cooperation and collaboration, and establish mutual legal assistance agreements. By doing so, we can better protect therights of creators and promote creativity and innovation globally.

CHALLENGES IN DEALING WITH DIGITAL PIRACY AND INFRINGEMENT

More and more individuals are consuming material online as a result of the expansion of the internet and the quick advancement of technology. The problem is worse in Indiasince a large number of people are unwilling or unable to pay the necessary sum of money for content that is original. The entertainment industry is seeing more content copied and illegally accessed online as broadband speeds increase and become more widely available. With all of this growth in demand also comes growth in piracy.

The holder of intellectual property has the sole right, which is known as copyright. Thisprotects the creator's work from unauthorised replication or use and gives the owner theexclusive right to

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replicate the work.

Unauthorised use of another person's creative work is referred to as piracy. Piracy is defined as "the unauthorised use of another's manufacture, invention, or development, particularly in the infringement of copyright" in both its literal and conceptual senses. “A person's copyright is violated when their creation is copied without permission. Theprevalence of piracy has increased in step with technical development. The film sector is where you'll find the most piracy. Various unlawful websites frequently have pirated content available for download. Whether it's a straightforward video, song, or movie, downloading or uploading any copyrighted content from these websites constitutes a violation of the owner's copyright.”

TYPES OF DIGITAL PIRACY

Unauthorised access to copyrighted media, including movies, music, television, games, and software, is made available on numerous websites.

I. Streaming platforms

You can watch illegally copyrighted content on demand through unauthorised streamingwithout downloading the offending file. Websites may link to content that is being streamed live on other internet pages or stream content themselves. Both hosting and supplying links to unauthorised content are against the law.

II. Cyber lockers

An online service called a "cyber locker" allows users to quickly and easily downloadand upload files from their hard drives to the one-click host's server and vice versa. Italso offers file-sharing and storage options. These links can be shared in a variety of online communities. Megaupload.com, which offered similar hosting services and ultimately shut down in 2012 because to copyright violations, is one example of the same.

III. Peer to Peer (P2P)

P2P networks link and connect computers with the goal of exchanging files or other data. Although the content might be legitimate, these transfers could be utilised to givenetwork users access to illegal content. Any P2P user can easily search and download the content he wants with an adequate amount of users in this network because the network's combined computers give users access to a lot of digital resources. These networks promote users as producers and consumers of digital material.

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IV. Torrent websites

collective content sharing and uploading on private torrent websites, which are typicallysupported by user donations. By providing links to torrent uploads, search engines like "Pirate Bay" make the content available to the general public.

WHY DIGITAL PIRACY IS AN ISSUE?

Here are some of the factors that are contributing to the rise in digital piracy:

- No limits on the variety of individuals to whom content can be published; convenientand extensive distribution via the internet.
- Difficult to distinguish between genuine copies and fake ones.
- Illegal distribution involves almost little expense.
- Unrestricted, cost-free access to content protected by copyright.

LEGAL SCENERIO IN INDIA

The main component of legislation for guarding intellectual property against piracy is the "Copyright Act of 1957". However, due to the rapid growth of technology, the methods established to combat online copyright infringement were insufficient. As a result, the copyright laws was modified in 2012 so that it now covers many types of digital infringement. The following provisions aim to stop persons from using or posting unauthorised content online:

Digital piracy must be stopped thanks to Section 65A of the Copyright Act of 1957,which was designed to "Protect of technological measure." According to the clause,"Any person who violates any right conferred by this Act by defeating an effective technological measure applied to protect such right shall be punished with imprisonment which may extend to two years and shall also be liable to fine."

The "Information Technology Act of 2000" is another law that addresses digital piracy.The Information Technology Act's Section 66 outlines the penalties for illegally distributing copyrighted content online, which include fines of up to Rs 2 lac and imprisonment for up to 3 years.

India's regulations against internet copyright infringement face a number of difficulties. The continuous development of new technology makes the task much more challenging.Digital piracy is not unfamiliar in India. 'Udta Punjab' may be a great case study of digital piracy. Before its

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scheduled release, the movie was online leaked. A 25-year-old Mumbai inhabitant who committed the crime was accused of violating the Information Technology Act. In Kerala in 2012, there was yet another big incident. The Kerala anti- piracy cell in this instance tracked the IP addresses of nearly a thousand individuals in Kerala who were involved in the unauthorised uploading and downloading of the film"bachelor party."

However, the administration is making the required preparations to maintain control over these serious concerns. Piracy and online copyright infringement can be reduced by training, regulations, and a few preventative measures. The various piracy laws in different nations must also be understood, as the Indian legal system's current anti- digital piracy framework is unquestionably insufficient. However, raising awareness and implementing a few new regulations could aid in addressing the growing problemof online copyright infringement.

INADEQUATE PENALTIES AND REMEDIES FOR COPYRIGHT INFRINGEMENT

Copyright infringement is a significant problem for content creators and owners. It is the unauthorized use or reproduction of someone's creative work, such as music, movies, books, or software. Infringement not only violates the rights of creators but alsocauses financial harm to them. Despite the legal protection provided by copyright laws, inadequate penalties and remedies for copyright infringement have been a persistent issue. In this essay, we will discuss the reasons behind inadequate penalties and remedies for copyright infringement and their consequences.

One of the reasons for inadequate penalties and remedies for copyright infringement is the difficulty of proving damages. The value of intellectual property is not always easyto quantify, and the harm caused by infringement may be challenging to assess.

Moreover, proving actual damages caused by the infringement can be a time-consumingand expensive process. For example, if someone illegally downloads a song, it may be challenging to determine how much the artist has lost in terms of revenue. In such cases,statutory damages may be awarded, which are predetermined amounts specified by law,but they may not always be enough to deter infringement.

Another reason for inadequate penalties and remedies for copyright infringement is thelack of enforcement mechanisms. Even if penalties and remedies are available, they may not be enforced adequately. Law enforcement agencies may not have enough resources to pursue all cases of

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copyright infringement, and even when they do, the penalties may not be severe enough to deter infringers. Moreover, in some cases, infringers may be located in different countries, making enforcement difficult.

The consequences of inadequate penalties and remedies for copyright infringement are significant. Creators and owners of copyrighted works may lose income, and their ability to create new works may be diminished. Moreover, inadequate penalties and remedies may encourage infringers to continue their activities, causing even more financial harm. It may also deter new creators from entering the market and sharing their work, knowing that they may not receive adequate protection against infringement.

To address the problem of inadequate penalties and remedies for copyright infringement, several solutions can be considered. One solution is to increase the penalties for copyright infringement, making them severe enough to deter infringers. This approach could be coupled with more rigorous enforcement mechanisms, such asincreased funding for law enforcement agencies or greater international cooperation.

Another solution is to promote alternative dispute resolution mechanisms, such as mediation or arbitration, to resolve copyright disputes more efficiently and cost- effectively. These mechanisms could be designed to provide prompt and fair compensation to copyright owners, while also providing an effective means of resolvingdisputes between parties.

In conclusion, inadequate penalties and remedies for copyright infringement are a significant problem that affects content creators and owners. The reasons behind this issue are multifaceted, including the difficulty of proving damages and the lack of enforcement mechanisms. The consequences of inadequate penalties and remedies are also significant, with financial harm to creators and owners, deterrence of new creators,and encouragement of infringers being some of the main issues. To address this problem, solutions such as increasing penalties and promoting alternative dispute resolution mechanisms can be considered. Ultimately, it is essential to find ways to protect the rights of content creators and owners while balancing the needs of society to access creative works.

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CHAPTER 5- INTERNATIONAL STANDARDS AND BEST PRACTICES FOR COPYRIGHT PROTECTION OF COMPUTER DATABASES AND SOFTWARE

OVERVIEW OF INTERNATIONAL COPYRIGHT LAW FOR COMPUTER DATABASE AND SOFTWARE

A crucial component of intellectual property law known as copyright law gives exclusive rights to those who create unique works, including computer databases and software. By defending the rights of authors and offering a framework for the fair use ofcopyrighted works, copyright law aims to promote creativity and innovation. The underlying code, algorithms, and user interfaces are safeguarded by copyright law in thecontext of computer databases and software.

The "Berne Convention for the Protection of Literary and Artistic Works, the WorldIntellectual Property Organisation Copyright Treaty, and the Agreement on Trade- Related Aspects of Intellectual Property Rights (TRIPS) all regulate international copyright law for computer databases and software."

The Berne Convention, first enacted in 1886 and updated in 1971, lays out the fundamentals of copyright law and provide protection for literary and artistic works, including computer databases and software. The Convention mandates that signatory nations offer copyrighted works a minimum degree of protection, including a minimumlength of protection (life of the author plus 50 years) and the power to forbid the work's unauthorised duplication, distribution, and performance in public.

The 1996 WIPO Copyright Treaty was created to modernise and expand on the Berne Convention for the information era. The Treaty protects the source code and object codeof software as well as the organisation and structure of computer databases and acknowledges the significance of computer programmes as creative works.

The World Trade Organisation (WTO) accords, known as TRIPS, define basic requirements for the protection of intellectual property rights, including copyright, andwere adopted in 1994. TRIPS mandates that member nations offer computer programmes a minimum level of copyright protection, including the ability to prevent unauthorised duplication, distribution, and public performance of the programme, as well as a minimum period of protection (at least 50 years).

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It is significant to remember that copyright protection only applies to the exact embodiment of those ideas in the form of the programme or database and not to ideas orfunctioning. As long as they do not directly copy the code or structure of the original, competitors are free to develop their own copies of the software or database.

Many nations also have national copyright laws that offer additional protection for computer databases and software in addition to these international treaties and accords.For instance, the United States Copyright Act protects computer databases' structure, order, and organisation as well as the source code and object code of software.

In general, the creative works of software engineers and database designers are important protected by international copyright legislation for computer databases and software. In order to promote innovation and creativity in the digital era, it is crucial toadhere to the fundamentals of copyright law, including the right to limit the use and distribution of works protected by the law.

BEST ACTIVITIES FOR PROTECTING THE COPYRIGHT OF COMPUTERDATABASES AND SOFTWARE

Computer databases and software are crucial resources for many enterprises and peoplein the modern digital age. They must be guarded against unauthorised access, usage, and distribution since they contain important information and intellectual property. Oneapproach to secure these assets is through copyright protection. The best practises for copyright protection of computer databases and software will be covered in this essay.

It is crucial to first and foremost comprehend what copyright protection includes. A copyright gives its owner the sole authority to use, reproduce, distribute, and exhibit their creations. Original works of authorship fixed in any tangible medium of expression, including computer databases and software, are automatically protected bycopyright laws.

The following recommendations should be followed in order to protect computerdatabases and software:

First, register your copyright

Although copyright protection is inherent, registering computer databases and software's copyright with the appropriate authorities offers additional legal security. 2. Use of Copyright Notices Copyright registration with the appropriate authorities createsa public record of the owner's rights to the work and is proof in any legal issues.

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Copyright notices must be used in software and databases to alert potential infringers that the work is protected. The copyright owner's name, the year of first publication, andthe copyright symbol () are all included in a copyright notice. The database or programme should prominently display the alert.

3. Control Database or Software Access

One of the most important ways to protect computer databases and software is to restrictaccess to them. Only those with authorization and those with a genuine need for access to the data in the database or software should be granted access. Access should be secured via passwords and access codes.

Data Encryption #4

Another technique to guard against unauthorised access is to encrypt the data that iskept in a database or piece of software. Only authorised people with the necessary decryption keys can access the data thanks to encryption. Encryption additionally guards against hackers and data leaks.

5. Consistent Backups

To prevent data loss due to malfunctions or accidents, computer databases and softwareshould be regularly backed up. Only authorised staff should have access to the backup copies, which should be kept in a secure area.

6. Watch and Examine Database or software access

Unauthorised access can be found and prevented with the use of monitoring and auditing access to databases and applications. It is crucial to keep track of all database or programme access, including who used it and when. This aids in finding any unusualactivity and locating possible violators.

7. Inform Staff and Users

The key to reducing infringement is educating staff members and users of computerdatabases and applications about copyright protection. This entails educating peopleregarding the value of copyright protection, the dangers of infringement, and the repercussions of copyright

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infringement.

Computer databases and software need to be protected from unauthorised access, usage, and dissemination since they are important assets. One method of protecting these assetsis through copyright protection. The best practises for copyright protection of computer databases and software include copyright registration, usage of copyright notices, access restriction, data encryption, regular backups, monitoring and auditing access, and user and staff education. Individuals and companies can make sure that their software and computer databases are well-protected against infringement by adhering to these recommended practises.

ANALYSIS OF COPYRIGHT LAWS IN INDIA AND OTHER COUNTRIES COMPARATIVELY

The copyright is a subset of the larger class of property rights that includes both tangibleand intangible property.

"Intellectual property, often known as intangible property, includes works of art that areprotected by copyright and trademark regulations as well as technological and scientific inventions that are protected by patent law. Market economies require well defined and effectively applied property rights. The ownership of traded goods and services, as well as the parties' rights to redress in the event of a dispute emerging from any exchange, must be established for arms-length transactions between individuals to be possible. Thelikelihood of being able to collect the money that such acts may ultimately create also influences a variety of decisions, including whether to pursue education, improve one's abilities, or engage in research and development."

In the past, "copyright laws have sought to find a balance between the societal benefits of widespread creative work use and personal motivations for creative exertion. By limiting the power that owners of copyrights have over future uses of their works, emerging technologies like the photocopier and videocassette recorder have in the pastthreatened to skew the balance of the copyright regime. The availability of creative works could be restricted in the future by a similar trend that lowers the income that creators of copyrighted content receive from their labours."

Significant questions regarding copyright law are raised by the swift advancement of information technology. With the advent of fast digital duplication and global Internetdistribution, copyright holders may no longer get revenue from sales of authorised copies of their works. Consumers are starting to grow irritated with copyright owners' use of digital technologies to prohibit or discourage copying and other illegal uses of intellectual material. Websites and other online information are now protected by copyright laws in the modern day. The emergence of the digital

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era and the advancement of technology have made copyright infringement more prevalent. This also holds true for simple copying and pasting from a blog that was created by the author.

Copyright also serves the purpose of winning the race to construct a new economic order based on fresh discoveries to improve human lives in today's cutthroat world ofscience and technology development.

Any country that wishes to foster its own authors, composers, or artists in order to further its own cultural legacy must provide robust copyright protection. This calls forrevised national copyright legislation, which must be crafted in a way that best serves those interests and takes into account the needs of the country.

INDIAN COPYRIGHT LAW

The Copyright Act of 1957 became operative in January 1958.In the intervening years,this Act has undergone six revisions: in 1983, 1984, 1991, 1994, 1999, and 2012.

The "Copyright (Amendment) Act of 2012 is the most important amendment. The Copyright Act of 1957 was revised primarily for the following purposes: to bring the Act into compliance with WCT and WPPT; to safeguard the music and film industriesand address their concerns; to address the concerns of the physically disabled and to safeguard the interests of the author of any work; incidental changes; to do away with operational facilities; and social control of rights."

"The extension of copyright protection to the digital sphere was one of the Copyright Act's most important amendments in 2012. The creation of statutory licencing for cover versions and broadcasting organisations, fines for eluding technological protection measures and rights management information, and the responsibility of internet serviceproviders were among the other key changes."

India does not require copyright registration since it sees it as nothing more than astatement of fact.

Registration is not required in order to file a lawsuit to stop infringement, nor does itconfer any new rights. In numerous decisions, the Indian courts have agreed with thepoint of view.

"The associate degree workplace at an institution must be referred to as the Copyrightworkplace for purposes of the Act, per Section 9 of the Copyright Act."

"A Registrar of Copyrights, who will be appointed by the Central Government and follow its instructions, will be in charge of overseeing the copyright workplace directly.Developing nations

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are occasionally categorised individually in terms of copyright because they can all employ the compulsory licencing system put in place for them in 1971 by both the Berne Convention and the Universal Copyright Convention."

However, "the laws of the former British and French Colonies in Africa and Asia havebeen impacted by the copyright and droit d'auteur systems, respectively. This is especially true in India, where the copyright regulations are very similar to those in theUK."

Landmark case in india

"R. G. Anand v. Deluxe Films [AIR (1978) SC 1613]"[4]

The Supreme Court's decision is regarded as a turning point in Indian copyright law. It was argued that even if the play and the movie in this instance have the same "provincialism" topic, it cannot be protected by copyright because it is only a plan. Themovie's premise highlighted two examples of provincialism: first, how it affects weddings, and second, how it affects how accommodations are distributed.

Additionally, "it forbade the dower problem as well as the problems associated with acaste-based society. In no way have the latter two issues been resolved in the play.

Additionally, the play was limited to just one aspect of provincialism, namely the marriage of individuals from different states." Thus, from several perspectives, the plotand its portrayal are vastly dissimilar from the one in the play. It had not been a case of copyright violation. The differences outweighed the similarities since they wereinsignificant and not a "substantial" or "material" replica of the original play.

Copyright law in UK

A ccording to British law, "a copyright is an intangible asset that is attached to a particular qualifying work. The basic source of copyright law is the Copyright, Designsand Patents Act of 1988 (the 1988 Act), as amended. Due to the ecu Union's rapid legalintegration and uniformity, a complete picture of the law may only be derived without reference to EU jurisprudence; however, if the UK leaves the ecu Union, this is frequently possible to modify."

[4] https://indiancaselaws.wordpress.com

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MEPs raised the prospect of contentious new copyright regulations when they voted to alter the legislative procedure in New Style Month 2018; these regulations may require commercial online content sharing services like YouTube to enter into licencing agreements with and pay just compensation to the owners of the intellectual property used on their sites. The EU Parliament brought up these regulations in September 2018.In 2018, on September 12, a new For the purpose of defending the rights of writers andmusicians, the EU Parliament enacted copyright regulations.

The following quotation was part of a recommendation notice that the Intellectual Property Office released in 2014 (and revised in 2015): "27 “The Court of Justice of theEuropean Union has influenced both UK law and European nation law, and it holds thatcopyright can only be preserved in works that are original in the sense that they are the author's own "intellectual creation."” It appears unlikely given these conditions that something that is merely a retouched, digitalized replica of an older work is frequently judged to be "original." This is owing to the fact that if a creator's objective is to produce an exact reproduction of an existing work, they would normally have the least creative leeway.

“The term of protection offered by Crown copyright, Parliamentary copyright, copyright of Acts and Measures, and copyright of international entities in the UnitedKingdom differs from that of typical copyright works.”

The Act, the public domain, and either Crown or Parliamentary copyright may all be used to safeguard government content. “Acts and Measures, legislation in Parliament, and the other devolved legislatures were all protected by the Crown copyright prior tothe 1988 Act; this copyright is now known as the Parliamentary copyright.”

Parliamentary copyright protects works created under the direction or supervision ofeither House of Parliament.

“Acts and Measures are units of measurement that are made public. They are also known as Acts of Parliament, Acts of the Scottish Parliament, Acts of the European Union Assembly, or Measures of the Council of the Church of State.”

For works produced by international organisations, the copyright tenure is 50 yearsbeginning with the work's creation date.

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Copyright law in USA

"The British Statute of Anne, which served as a key source of inspiration for the Copyright Act of 1790, the first federal copyright law in North America, is where theroots of US copyright law may be found."

The Copyright Clause of the United States Constitution, also known as Article One Section VI, Clause Eight, grants Congress the authority to "promote the Progress of Science and useful Arts, by securing for Limited Times to Authors and Inventors the perquisite to their Individual Writings and Discoveries." The majority of the time, musicproduced in the US before to January 1, 1923 is treated as property.

Section 106 of the 1976 Copyright Act normally allows the copyright owner to attemptand authorise others to do the following:

• To make more copies or phonorecords of the work and distribute them to the public

through sales, other property transfers, rentals, leases, or loans; • To produce derivativeworks that are substantially based on the work;

• To publicly display the proprietary work, including the individual frames from a filmor other audio-visual work, pantomimes, literary, musical, dramatic, and dance productions, as well as visual arts like paintings, sculptures, and drawings;

Landmark case in USA

Twentieth Century Fox Film business firm v. MCA Inc. and Ors [715 F.2d 1327(9th Cir. 1983)]

One of the most infamous examples of violation is also known as Star Wars v.

Battlestar Galactic. "It is clear what the law is in regards to a grant of court decision. The moving party can be granted a legal victory if there isn't a genuine dispute over a material fact. On appeal, the issue of whether or not the lower court's judgement was properly granted comes up. The standard guiding our review is the same as the standardadopted by the judiciary under Rule 56(c). This means that the evidence and conclusions drawn from it should be interpreted by the court in a way that is most advantageous to the non-moving party, in this case plaintiffs and appellants Fox and Lucas Film." If there is no true dispute of fabric reality about the questions of significant resemblance of plan and plan expression, the defendants MCA, Universal, and first rudiment may succeed.

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How will Copyright law works?

A judge in a U.S. court ruled in September 2015 that the song "happy birthday" is notprotected by sound copyright.

Even though many of us are unaware, a song cannot be utilised for commercial purposes without paying a royalty to Warner Chappell Music Group. They stated thatthey generated $2 million a year from the song.

However, this simple melody, "Happy Birthday," is owned by one firm, which hasmade money off of it. But specifically, this is a copyright work. This may be the primary reason we want copyright.

For physical manifestations of a notion, copyright offers protection. Copyright,however, is not a good regulation in and of itself.

There are set restrictions that allow for widespread public use. “The inability to print copies of The Lord of the Rings or copy unauthorised films is due to copyright everywhere. It enables the creator to fully enjoy the results of its labour. What you areand aren't permitted to do in terms of copyright stems from the nation to which you belong and how rigorous the copyright rules are there. The Berne Convention, which served as the foundation for the majority of contemporary copyright laws, emphasizes on "The countries of the union, being equally animated by the desire to protect, in as effective and uniform a manner as possible, the rights of authors in their literary and artistic works." The Berne Convention is now followed by the majority of the world.”

The laws that regulate the internet are evolving more quickly than the technology itself.Either the legislature or the courts have adopted new rules that apply to the internet.

Such laws include copyright laws. Today's internet is merely the tip of a much larger iceberg. Internet has a scope that is unimaginably large. Nothing in the world cannot besearched for online. This contributes to the widespread misconception that anything posted online can be copied or downloaded.

The truth is that “everything you view online is protected by copyright in the same waythat anything you see at a library or bookshop is.The requirements of registration and copyright notice are no longer necessary under contemporary copyright law. As long asthe content is unique and meets all three requirements, copyright automatically protectsthe work.”[5]

[5] https://ucomm.wsu.edu/the-internet-copyright/

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Currently, sharing music, movies, software, or any other programmes on the internetresults in the most prevalent copyright violations. The film and music industries are actively preparing to take action against such P2P networks.

Numerous other nations throughout the world, as well as the United States, have seenthousands of lawsuits filed. For their criminal actions, students who download such unauthorised content from campus networks are being sued.

Many governments have set up cyber security cells as specialised police divisions to goafter people who perform unauthorised and illicit internet downloads. Special courts have been established to hear cases with these issues quickly.

Internet copyright violations are drawing lawsuits that could cost you thousands ofdollars or land you in jail.

The same rules and punishments that apply to illegal copying offline or online alsoapply to online copying.[6]

Distinct nations have distinct copyright laws and diverse methods for applying and enforcing those laws. According to US copyright law, a single individual is only permitted to hold intellectual property as their own for a certain amount of time. Thisrestriction typically lasts for 70 years following the author's passing; after that, it becomes public domain, depending on the country.

Anything that is in the public domain may be used and copied by anybody. There are also occasions where it is possible to use some copyrighted work components withoutbreaking the copyright regulations. Typically, this is referred to as a fair use.

Fair use includes “using it for criticism, journalistic reporting, or research, as well as for educational purposes. This is done for the purpose of preventing censorship by stating that it would be illegal to reference its work in any way. Copyright is deep and difficult,and it doesn't even apply to all the nations that haven't ratified any international agreements. The ability to manage and benefit from your ideas, however, is a crucial component of the economy and intellectual property rights throughout the rest of the globe.”

For conclusion. “Copyright laws are designed to protect the original works of authors, artists, and creators from being copied, distributed, or used without their consent. Theselaws vary from

[6] https://indiancaselaws.wordpress.com

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country to country, depending on their legal systems, cultural values, and economic interests. In this essay, we will compare the copyright laws of India with those of other countries."

Firstly, let's take a look at the copyright laws in India. "The Indian Copyright Act was first enacted in 1957 and has undergone several amendments over the years. The currentversion of the Act is the Copyright (Amendment) Act of 2012. This Act provides protection to original literary, artistic, musical, and dramatic works, cinematographic films, sound recordings, and computer programs." The duration of copyright protection in India is generally 60 years from the year following the author's death.

The United States Copyright Law, in contrast, "offers protection to original literary, theatrical, musical, and creative works as well as sound recordings, motion pictures, andsoftware. In the US, copyright protection lasts for the author's lifetime plus an additional70 years."

The notion of fair use is another variation between Indian and US copyright laws. According to US law, fair use permits limited unrestricted use of copyrighted content for functions including criticism, commentary, news reporting, teaching, scholarship, orresearch. Fair dealing is a similar idea that exists in India, but it is restricted to certain objectives such news reporting, criticism, private study, and research rather than being as general as fair usage.

"With regard to the European Union, the EU Copyright Directive, which was enacted in2001 and has subsequently undergone numerous revisions, regulates copyright rules.
The Directive offers protection to original works of authorship, including computerprogrammes and works of literature, the arts, music, and film. In the EU, copyrightprotection lasts for the author's lifetime plus an additional 70 years."

The idea of neighbouring rights is one of the most significant contrasts between the copyright rules in the EU and India. Performers, sound recording producers, and broadcasting companies are all protected in the EU by neighbouring rights. There is nosuch thing as neighbouring rights in India.

Let's now examine China's copyright regulations. The copyright legislation in China was initially passed in 1990 and has since undergone multiple revisions. "The People'sRepublic of China Copyright Law of 2010 is the most recent iteration of the law.

Original literary, artistic, and musical works as well as sound recordings, motion pictures, and computer programmes are all protected by this law. In China, copyrightprotection lasts throughout the author's lifetime plus an additional 50 years."

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The idea of moral rights is a key distinction between copyright laws in China and those of other nations. Authors and other creators in China have the right to claim ownership of their works and to protest any alteration or mutilation that would be damaging to their honour or reputation. Other nations, particularly India, do not generally understandthis idea.

The development of copyright laws has been influenced by various legal frameworks, cultural norms, and commercial interests that vary greatly from nation to nation. Whileideas like fair use, fair dealing, and neighbouring rights may be accepted in some nations but not in others, they may not be. For creators, publishers, and consumers who participate in a worldwide market, understanding the variations and parallels in copyright rules between various nations is crucial.

CHAPTER 6: CONCLUSION AND RECOMMENDATION

Copyright protection is an essential aspect of intellectual property rights, and it plays a crucial role in fostering innovation and creativity. The emergence of computer databasesand software has brought forth new challenges to copyright protection in India. This essay explores the key challenges faced in the protection of computer databases and software copyright in India.

The first challenge is the "lack of clarity in the law regarding the protection of computerdatabases and software. The Indian Copyright Act, 1957, does not explicitly define whatconstitutes a computer database or software. This lack of clarity has led to confusion among the judiciary and legal practitioners, leading to inconsistent application of copyright laws in cases involving computer databases and software. As a result, the scope of copyright protection for computer databases and software remains uncertain, and this makes it difficult for rights holders to enforce their rights."

The second challenge is the issue of infringement of copyright by unauthorized reproduction or distribution of computer databases and software. The ease of digital replication and distribution has made it easy for infringers to reproduce and distribute copyrighted computer databases and software without the owner's permission. The lackof adequate technological protection measures, coupled with the absence of effective legal mechanisms to combat piracy, has made it difficult to curb copyright infringementeffectively.

The third challenge is the issue of "reverse engineering." It can be defined as "the process of analyzing a software program or database to understand its workings, often with the intention of copying or recreating it. In India, reverse engineering is permittedunder certain circumstances,

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such as for the purpose of interoperability." However, the line between permissible and impermissible reverse engineering is often blurred, leading to disputes and litigation.

The fourth challenge is the difficulty in establishing ownership of computer databases and software. In India, copyright ownership is typically determined by the work's authorship, which can be challenging to establish in the case of computer databases andsoftware. In most cases, software and database development involve multiple stakeholders, including programmers, designers, and users, making it difficult to determine who owns the copyright in a particular work.

The fifth challenge is the issue of international piracy. "India is a member of the WorldTrade Organization (WTO) and is obligated to comply with the Trade-Related Aspectsof Intellectual Property Rights (TRIPS) agreement." However, India's enforcement of copyright laws and protection of intellectual property rights have been criticized as being weak, particularly concerning piracy of copyrighted works. This has led to concerns among foreign investors and stakeholders, who fear that their intellectual property rights may not be adequately protected in India.

The protection of computer databases and software copyright in India faces several challenges. The lack of clarity in the law, issues of infringement, reverse engineering, establishing ownership, and international piracy are among the most significant challenges. To address these challenges, the Indian government needs to take steps to clarify the law, enhance technological protection measures, and establish effective legalmechanisms to combat piracy. Additionally, stakeholders need to work together to establish clear ownership and licensing arrangements that promote innovation while protecting intellectual property rights.

RECOMMENDATIONS FOR IMPROVING COPYRIGHT LAW ANDENFORCEMENT IN INDIA

In an effort to address how the creative "industries are performing and evolving in lightof changes brought about by use of the internet, digitalization, and an increasingly globalised market for digital content," the Registrar of Copyrights recently issued a request for comments from industry stakeholders on amending the Copyright Act 1957.India now has the chance to reassess its goals for the production and online dissemination of creative content within a robust legal framework.

"Online content consumption in India is growing steadily. According to the MusicConsumer Insight Report, 2018 published by the International Federation of the Phonographic Industry, 95% of Indian customers stream music on demand.

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Additionally, consumers are becoming more comfortable using OTT services to watchfilms and TV shows. According to a FICCI-EY research on Media & Entertainment in2020, OTT platform subscriptions doubled in 2018. Their share of the total digital segment revenues rose from 3.3% in 2017 to 13% the following year. This change in consumer behaviour is brought on by widespread internet use, inexpensive data plans, and an increase in smartphone users. The Covid-19 pandemic has made the transition todigital a necessity and reignited various discussions on online copyright."

BALANCING TWIN OBJECTIVES OF COPYRIGHT

"The goal of copyright is to create a balance between encouraging content producers toproduce more and maximising public access to them. The Copyright Act offers a voluntary licencing mechanism that enables the copyright owner to make his or her works accessible to the public at various fees in order to promote innovation. The Act also has provisions for ensuring content availability in the event of a failing market."

For instance, "regulations requiring forced licencing guard against copyright owners' monopolisation of content. The majority of content in India is also subject to a 60-year copyright restriction period so that it can become freely accessible once the creator has had a chance to monetize it. If such works are accessed for private use, research, academic, or journalistic reasons, among other things, "fair use" exceptions shield them from infringement lawsuits. These illustrations show how the copyright regime balances the public interest while permitting commercial exploitation."

According to academics William M. Landes and Richard A. Posner, copyrights continue to be economically efficient when the advantages of producing new content outweigh the costs of limiting access. The equilibrium between incentives and availability to fresh creative output, however, was upset by the expansion of the internet. "This is such that the returns on creative content have decreased as a result of the digitisation of copyright industries, such as print and audio-visual media, which hasreduced distribution costs, removed entry barriers to the market, and reduced profits oncreative content. While this is great for audiences and consumers, it has also made it challenging for creators to succeed in a market that is becoming more and more competitive. The ease of access to content on the internet demands a transition to a contemporary copyright policy that restores the motivation to produce new content."

State intervention that "threatens to weaken copyright protection can be seen in recentgovernment

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efforts to impose a mandatory data sharing scheme and expand statutory licencing beyond the scope of the legislation. By allowing access to and use of intellectual property without having to engage in negotiations with copyright holders, these modifications disregard the balance between incentives and access under the Copyright Act."

COPYRIGHTS AND DATASETS

Datasets are used by a number of organisations in the digital ecosystem to store their data. These datasets are the property of the organisations that gather, produce, and process data. "In compliance with its commitments under the TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement, India revised Section 2(o) of the Copyright Act in 1994 to safeguard databases. According to the agreement, India offerssimilar protection to "compilations of data which display creativity in the selection and arrangement of material as a 'literary production'. Recent policymaking initiatives, such as the Draught National E-Commerce Policy, 2019, and the Draught Non-Personal DataGovernance Framework, however, seem to be at odds with both local and international copyright laws."

Particularly, the mandatory sharing of proprietary data is mentioned in both the DraughtE-Commerce Policy and the Draught NPD Framework. "They emphasise that massive platforms have access to enormous amounts of data and profit enormously from network effects, which are comparable to economies of scale in conventional marketplaces. Therefore, in order to level the playing field between start-ups and larger businesses in the digital arena, both frameworks propose mandatory data exchange. TheDraught NPD framework seeks to regulate non-personal data without taking into account its intellectual property features, which might have a negative impact on innovation and the general welfare, as we point out in the explanation on non-personal data. Similar flaws are present in the proposed national e-commerce policy."

"Value creation from datasets requires a significant time and resource commitment. Finding pertinent data and structuring it in a way that enables businesses to gain further information and modify their tactics also needs creativity. For instance, ride-sharing businesses like Uber and Ola analyse traffic information gathered by their vehicles to forecast demand based on location, time of day, and day of the week. They are able to better manage their fleet and serve their clients as a result. The judiciary has also drawn attention to the work required for data organisation. The Delhi High Court noted that thebusiness had committed a significant amount of time, labour, talent, and money in creating a herbal database in The Himalaya Drug Co. v. Sumit (2005). The defendants, according to the ruling, violated the company's copyright."

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Mandatory data sharing policies may undermine incentives to put out the time and effortnecessary to produce new datasets in such a situation. The development of more datasets should be encouraged by any future legal framework for the digital domain, much like copyright does.

MODES OF LICENSING

Through licencing, copyright enables access to creative content. "The Copyright Act ofIndia allows for three different types of licencing mechanisms: statutory licencing, mandatory licencing, and voluntary licencing. In most cases, the copyright holder engages in voluntary licencing negotiations with interested parties to offer a licence to use the work under mutually agreeable conditions. When a copyrighted work is unavailable or when bargaining is impossible, as would be the case in a failed market, mandatory and statutory licencing procedures are triggered."

"In order to give the public access to content that would otherwise be restricted from them, compulsory licencing was adopted. For instance, the law permits people to contact the Intellectual Property Appellate Board (IPAB) and seek licences at a set costin situations when the author of a work is illegitimate or deceased. In contrast, for a more specific objective, Parliament adopted legislative licencing under copyright law. By using this system, broadcasters can request licences directly from the IPAB withouthaving to engage in negotiations with copyright holders. Statutory licensure is thus a unique feature of Indian copyright law."

Due to market failure in the music industry, "statutory licencing was proposed to enablepublic access to musical compositions through FM radio, according to the Rajya Sabha Parliamentary Standing Committee Report on the Copyright (Amendment) Bill, 2010. Under the voluntary licencing structure, copyright owners and collective management organisations were imposing excessive terms. Statutory licencing was first implementedin a very specific setting to address a narrow issue. In Tips Industries v. Wynk Music (2019), when Wynk Music requested a statutory licence to broadcast the musical works owned by Tips Industries, the Bombay High Court reaffirmed this. The Court determined that digital radio is not subject to the restrictions on FM radio material described above."

Reviewing the Copyright Act should help you understand the business case for licencing. The general rule is that the government should only become involved in voluntary agreements if the market is failing. Given the increased distributional efficiency that the internet offers, they will inevitably occur less frequently. Comparedto the decades of content produced on traditional channels, more content is produced every day on the internet. According to the 2019 Ericsson

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Mobility Report, India utilised over 75 exabytes of data in 2019, which is equivalent to more than 16 billion DVDs' worth of data.

Therefore, even though the Copyright Act has a variety of licencing options, not all ofthem might be appropriate for the digital world. The Act's modernization must offer stronger incentives for producing new works online than for conventional media.

WAY FORWARD

Since the" Great British Parliament passed the Statute of Anne in 1710, copyright has been recognised as a legal right in India. It has also been recognised in other parts of theworld. Since then, creators have received the exclusive right to profit commercially from their original works as compensation. The public's interest in creation is also takeninto account by copyright rules through measures that facilitate access. This framework offers the perfect foundation for encouraging creativity and innovation in the digital world. The first step towards a copyright law that is appropriate for the digital economyis to prevent the dilution of copyright. The next step is to update Indian legislation to reflect the new dynamics of online content production and consumption."

Numerous nations have acknowledged the need to update copyright laws for the digital age. "The Musical Works Modernization Act, which was passed in the US in 2018, instituted a mandatory licence for the mechanical replication of musical works without any creative contribution. The Copyright Alternative in Small-Claims Enforcement Act,2019, was also passed, giving creators the ability to pursue a quicker legal remedy for low-value works. By establishing the Korean Copyright Office and Korean Copyright Protection Agency, South Korea similarly enhanced the administrative system for copyright. India could consider a comparable array of comprehensive and forward- thinking policies to strengthen its domestic copyright regime."

FUTURE PROSPECTS FOR COPYRIGHT PROTECTION OF COMPUTERDATABASES AND SOFTWARE IN INDIA

"India has emerged as a hub for software development and IT services, and the protection of intellectual property rights has become crucial for the growth of the software industry. The copyright protection of computer databases and software has been a contentious issue in India, and there have been several debates and discussions on the future prospects for copyright protection."

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The Indian Copyright Act, 1957, governs the copyright protection of software and computer databases in India. The Act defines computer programs as literary works, andthus, they are eligible for copyright protection under Section 2(o) of the Act. However,the Act does not provide explicit protection to databases, and their protection is dependent on the level of creativity and originality involved in their creation.

In 1999, "the Indian government introduced the Information Technology Act, which provides legal recognition to electronic records and digital signatures. The Act also includes provisions for the protection of computer data and computer systems againstunauthorized access, hacking, and computer-related offenses. However, the Act doesnot address the issue of copyright protection of databases and software."

In 2019, "the Indian government introduced the Draft National E-Commerce Policy, which aims to promote e-commerce in the country and address various issues related todigital trade. The policy proposes to amend the Indian Copyright Act to provide better protection for software and databases. The proposed amendments include recognizing databases as copyrightable works, introducing anti-circumvention provisions to prevent unauthorized access to databases, and providing for statutory licenses for database access."

In the current digital era, these newer kinds of intellectual property are quickly communicated over the internet, yet the same internet has also created new obstacles forthe copyright regime by raising the likelihood of copyright infringement by a variety of sophisticated techniques.

This article attempts to educate readers about the copyright protections afforded to computer-based works as well as how the global community has responded to the problems posed by digital technologies in terms of intellectual property. It will also go through how the Indian Copyright Law has changed in the digital age and point out anygaps in the current system for copyright protection.

COMPUTER PROGRAMS

In order to produce specific outputs, the computers are programmed with a given set of instructions. These instructions are referred to as programmes. A computer programme,according to the Encyclopaedia Britannica, is a comprehensive strategy or technique forusing a computer to solve a problem. More precisely, it is an unambiguously organised sequence of computing instructions required to arrive at such a solution.

A computer's memory contains programmes that allow it to carry out a variety of activities

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sequentially or even sporadically. In order to create a task, a programmer creates a computer programme known as "source code" that is later translated into the appropriate computer language (machine language) and executed by the computer as "object code." The source code and object code of a computer programme are two distinct but equivalent formats. As a result, whomever owns the source code also ownsthe object code.

The TRIPS Agreement provides “copyright protection for computer programmes in the same way as it does for any other literary work. Accordingly, the Copyright Act of 1957in India provides for the copyright protection of computer programmes. Computer programmes and databases were added to the Act's definition of literary works in a 1994amendment. Computer programmes are described as "a set of instructions expressed in words, code, schemes or in any other form, including a machine-readable medium, which is capable of causing a computer to perform a specific operation or achieve a particular result" in Section 2 of the Act.”

“Despite the fact that they are considered literary works, computer programmes are covered by separate Act provisions that address their rights and infringement. Section14(b) of the Act specifies the copyright for computer programmes as well as sale andrenting rights.”

“Since the Act was amended in 1999, commercial rental rights are no longer applicablewhere the computer programme itself is not the primary subject of the rental. This exception is thought to be fair given that digital technologies are not yet widely employed in areas that have an impact on daily life. If not, one risked paying fortechnology they never intended to use.”

The copyright offender may be prosecuted in court and subject to the penalties stated inthe Copyright Act. Making or disseminating unlawful copies or using without the appropriate licence are examples of these offences. The legislation has also made the intentional use of counterfeit copies of computer programmes illegal and has set minimum punishments for it, taking into account how distinct computer programmes are from other literary works.

DATABASES

A database is a collection of documents, information, and other items structured in a methodical and logical way. Even though databases are collections of non-original works, they are copyright protected as literary works. The works are considered to be non-original due to the author's talent and labour. Copyright protection applies to the 'expression' of how information is assembled in a particular way to present a particularviewpoint.

A database must be original in its expression, not a copy of another database, and theresult of the

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author's intellectual labour in order to be considered a "intellectual creation."

“Databases are protected under India's Copyright Act, 1957 as literary creations. Computer programmes, tables, and compilations, including computer databases, are included in the definition of "literary works." Similar legal protections against infringement apply to both databases and computer programmes under the Act. It isimportant to note that copyright in databases is recognised by Indian courts in this context.”

According to a ruling, “compiling a list of clients or customers created by someone using their time, resources, labour, and skills qualifies as "literary work" for which the author holds copyright under the Copyright Act. As a result, the outsourcing parent corporation may have recourse under the Copyright Act if any infringement with regardto databases happens.”

According to Indian law, a database is "a representation of information, knowledge, facts, concepts or instructions in text, image, audio, or video that are being prepared or have been prepared in a formal manner or have been produced by a computer, computersystem, or computer network and are intended for use in a computer, computer system, or computer network," as stated in the Information Technology Act, 2000's Section 43 explanation ii.

According to Section 43 of the Act, anyone who infringes the copyright for databases and other online standards must pay the aggrieved party one crore rupees in damages. Awide range of offences are covered by the aforementioned Section 43 of the Act, including data theft, computer trespassing, digital copying, and cracking computer codes. The I.T. Act's Section 66 lists the criminal penalties that apply in certain situations.

However, the draft policy has faced criticism from various stakeholders, including thesoftware industry and civil society organizations. Some argue that the proposed amendments would increase the monopoly of large corporations and limit access to data, which could hinder innovation and research. Others argue that the proposed amendments do not go far enough in protecting the rights of software developers and content creators.

In conclusion, the future prospects for copyright protection of computer databases and software in India are still uncertain. While the proposed amendments to the Copyright Act could provide better protection for software and databases, they also face criticism from various stakeholders. It is essential to strike a balance between protecting intellectual property rights and promoting innovation and research in the software industry. The Indian government must engage with various stakeholders to address theirconcerns and ensure that any amendments to the Copyright Act are in the best interests of all parties involved.

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