

Copyright in Computer Databases

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Abstract—Computers have changed the way we interact and work in our daily life. With ubiquitous computing and handheld devices, we have started generating data at larger rate than ever. Tech Companies, Programmers, Software engineers and even user may be using different computer databases to help their businesses and daily life. This article addresses the question of copyrightability of computer databases. In India, computer databases are granted protection under copyright law. The article defines the different principles of protection of computer databases with a short comparative study with US and UK legal position.

Keywords—computer, computer databases, dbms, copyright, law and policy

I. INTRODUCTION

In the early era, computers were only considered to be the means to process the electronic data. But now we live in Information Technology era where computer has led to the growth of Information Communication Technology. Information or the data is now the crucial part of this whole present system. The large amount of data is stored or kept as compilation which is called the database. A computer database is the collection of data or the data entered by a person in the computer for purpose of record and reuse, such as image file *etc.* It does not mean computer programs¹ though it is mostly the outcome or subject of any computer program.²

Copyright is a bunch of rights protecting the literary, artistic, musical and dramatic works of their authors from being unauthorized copied by any other person and thus protects their economic rights. Copyright is considered purely intellectual property right rather than being industrial. Where computer database is purely industrial in nature, the question of extant of copyright protection arises.

In the present era where a single piece of information is vital, the whole collection of data or database is of utmost concern for protection from being unauthorized copied and misused or commercially exploited. Database has a great value in every segment of economy.³ In absence of any specific legislation or *sui generis*⁴ system, this paper examines the protection of databases under the Copyright Law in India and also discusses the practical and legal methods of protecting computer databases from unauthorized copying and use, and areas of trade secrecy and non-disclosure.

II. WHAT IS COMPUTER DATABASE?

A. Meaning

A database is a collection of data arranged in a systematic way to allow for the easy and efficient retrieval of information. Database is not a new term. Database means 'collection or compendium of information or data'. Earlier database existed in manual form or book form such as telephone directory, dictionary, encyclopaedia and legal reporter *etc.* Computer database is the collection of data, collected and stored electronically, stored on computer, server, cloud⁵ or any storage medium. Essentially, computer database is a collection of information stored, in personal hard disk drives, floppy diskettes, tape drives, CD-ROMs, DVDs or on network attached drives, server's disk *etc.* for easy searching capability or usability, which increases data's utility. According to Ashok Ram Kumar,⁶ "The computer database is essentially an information compendium like a phone book, which has been placed in a computer and automated. When information is computerised, there are many more ways for the information to be accessed, manipulated, and used; the value of the database to users is thereby greatly enhanced." He has further defined automated database as "a body of facts, data, or other information assembled into an organised format suitable for use in a computer and comprising one or more files".⁷ The IT Act, 2000⁸ defines computer database as "representation of information, knowledge, facts, concepts or instructions in text, image, audio, video that are being prepared or have been prepared in a formalized manner and have been produced by a computer, computer system or computer network."⁹

A computer database is a unique animal. As **Guy Kawasaki** says in his book *DATABASE 101*,

You may find this weird, but there is one more way to define a database. It's like an electronic pet; like a loyal and affectionate cat or dog. Unlike most other computer programs, a database is a living organism. It grows and requires nurture and care.

He concludes with "When you are 'one' with your database, you'll enter information into it every day. It will make you more productive and creative. You'll come to think of it more as a pet than as a thing; Zen and the Art of Database Management." A database must be distinguished from a database system¹⁰ which is a software or computer program which administers the

database. This is an important distinction to keep in mind when considering what is protected in a database.¹¹

A stored computer database is like an electronic file cabinet/drawer full of necessary documents. What makes computer databases useful is the ease with which the data can be entered, stored and manipulated. Unique data needs to be entered only one time. From then on it can be used to create lists, summaries, reports, letters, labels and many other things. Before data can be entered into a database, the database must be designed. A layout or set of layouts, sometimes called templates, are created. Within these layouts are data fields associated with labels. The calculation fields result from other data and data cannot be directly entered into these fields.¹² These data extracted from other data in conclusion fields can also be used for further use.

B. What can Databases Do?

Databases play an important role in the development of information market and its products. A computer database can be made up of all kinds of data including pictures, sounds and even movies. A database can be of commercial use as well as of private use. It can be of great economic use being a commercial product or may be within the domain of privacy law¹³ when composed of private data or information. Let's say you have an employee database. You could take each employee's picture, scan the image or use a digital camera and store the employee's photo right along with the rest of the information on the employees. Mailing labels are a snap. It's also very easy to find a piece of data or data record by merely knowing a few bits of information. A set of records containing specific information can be quickly found and searched. Then a particular record from that set can be easily found. The more criteria used for the find, the fewer records will be found, but the records found will be a closer match to what is sought. In addition to finding sets of records, the records found can be sorted by many different options (by different fields, the selected fields can be sorted alphabetically, numerically, ascending or descending order).

The databases generated by a company may be a valuable hidden asset.¹⁴ A few examples of useful databases include: financial information databases that are "indispensable tools for investors, regulators and participants in all financial markets"; credit reporting systems that are the basis for hundreds of thousands of daily business decisions; demographic databases that "play a dominant role in marketing, fundraising and planning decisions"; bibliographic databases relied on by researchers and students; and economic and industrial databases that "underpin momentous decisions made every day at all levels of business and government."¹⁵

III. COPYRIGHT PROTECTION TO COMPUTER DATABASES

With the wider use of technology especially computer and Information Technology most national systems have gradually moved into the direction of providing protection to computer software and databases under

copyright law. In principle, it is the skill, labour and judgement of the author that is protected irrespective of the form in which the product appears *e.g.* whether one types a book on an old-fashioned typewriter or transforms it in a digitized form or in handwritten form. Any reproduction of the work including translations is considered a reproduction of the original.

The database itself is defined as 'a collection of independent works, data or other materials are arranged in a systematic or methodical way'.¹⁶ And a work is copyrightable if described as being fixed in a tangible medium of expression when its embodiment in a copy or record, or otherwise communicated for a considerable period of time. For example, if a presentation is created on presentation software so that it is projected briefly on projector screen or captured only momentarily in the memory of a computer, that work is not fixed and cannot be protected by copyright. Thus it can be said that Computer databases, which are electronic files of information "formed by the collection, assembly, and arrangement of pre-existing materials or data" are thus, considered protected, provided the resulting work as a whole constitutes original authorship.

A database composed of original materials would be protected under the category of compilations¹⁷ known as collective works. A collective work is a collection of "separate and independent works."¹⁸ It receives separate protection for its individual components as well as protection for the overall work as a compilation. Because many, if not most, databases consist of factual or public domain materials that are individually unsuitable for copyright protection, they will not benefit from this additional layer of coverage. Even if a particular database consists of copyrightable materials, in many instances other parties will own the copyright in those materials and thus the developer will not benefit from their protection. Therefore, in discussing copyright protection of databases, this Recent Development treats them as "pure" compilations and assumes that they do not consist of individually copyrightable components.

A. Protection under UK Law

UK law has been more favourable¹⁹ in protecting compilations of factual information than many other countries in Europe and US.²⁰ Prior to 1998,²¹ UK law was clear that database, whether electronic or otherwise, is subject matter of copyright law under the meaning of 'compilations'.²² What was protected is the structure and organization (including its' selection and arrangement) of database as original content. But if it's merely factual information, limited protection was provided.²³ This was, of course, without prejudice to any individual copyrights subsisting in the individual items or works contained within the database. For example, consider a database of modern romantic poems. Each poem would be protected by copyright as an original literary work and, providing sufficient skill, labour or judgment was expended in selecting and arranging, indexing or annotating the poems, there would be a separate copyright in the database as a whole.²⁴

After 1998, the legal protection of databases was significantly changed by the Copyright and Rights in Databases Regulations 1997 which came into force on 1 January 1998.²⁵ This directive led to the dual way protection to databases. Firstly, a database as an intellectual creation, it will have copyright protection *per se*. And secondly, if the database is without intellectual creativity but as the result of a substantial investment, it will attract a *sui generis* right, referred to in the Regulations as a 'database right'. Thus in many cases, databases would be protected by both, copyright and a database right, which was designed specifically for valuable databases which failed to reach the requirements for copyright protection. For the database right to subsist, there must be a substantial investment (in terms of human, technical or financial resources) in the obtaining, verification or presentation of the contents of the database.²⁶ In *British Horseracing Board Ltd. v. William Hill*²⁷ Laddie J., held what database right protects, is not the form of data but the *investment* put into the making of database. Thus under UK law noncreative databases are also protectable by way of 'database rights'.

B. Protection under US Law

Unlike UK law, US Supreme Court rejected the doctrine of 'sweat of the brow', which provide protection to the work done with substantial labour and 'sweat on his brow' in celebrated case of *Feist Publications Inc v Rural Telephone Service Co Inc*.²⁸ In this case, it was held that the a typical telephone directory was not protected by copyright because of a lack of creativity, which does not form sufficient act of authorship. The court did recognise, however, that a compilation of facts could be the subject of copyright because the author has to choose and control the compilation work. However, court suggested that the 'yellow pages' section of a telephone directory was protected because of the presence of original material such as drawings in advertisements. There is also some skill in devising the classification system used. Subsequently, however, it was held in the United States that taking a large amount of data from a classified directory did not infringe copyright.²⁹ Bainbridge³⁰ has discussed that the given rigorous approach of US is because of the object of copyright given in US Constitution, which is "to promote the progress of science and the usefulness of arts"³¹, which further restricts rewarding acts of labour only. The case relating to computer database theft *ProCD v. Zeidenberg*³² reiterated the same copyright principle of 'modicum of creativity'. Thus US uphold the same footing in copyright though protection may be granted to database authors under contract and trade secret.

C. Protection under Indian Law

The Indian Copyright Act was amended in 1994 to extend more effective protection to computer programs as literary works and for the protection of computer generated works. The meaning of 'literary work'³³ included works such as computer programs, tables and compilations including 'computer databases'. All original Databases are accordingly protected by copyright as literary work in addition to tables and compilations, which themselves are not databases. The material which

enables databases to be used, such as index, can also be considered as part of databases.³⁴

Section 2(o) of Copyright Act defines 'literary work' as:

"Literary work includes computer programmes, tables and compilations including computer databases."³⁵

This given definition is inclusive one rather than exhaustive. This makes compilations and computer databases copyright subject matter under literary work. This work *inter alia* means original literary work. The word original does not mean that the work must be expression of original or invented thoughts; it may be compiled facts too.³⁶ Copyright act is not concerned with the origin of ideas, but with the expression of thoughts³⁷ and here in case of literary work with expressions of thought in print or in writing. The originality which is required by the act³⁸ relates to expression but not that expression must be in novel form, but that must not be copied from another work.³⁹

1) 'Sweat of the Brow' Approach

Since the standard of originality applied by Indian courts for entitlement of copyright protection is low; almost all compilations is entitled to protection. On the line of UK⁴⁰, labour and skill applied to any compilation is the main criteria to adjudge the originality in matter of any compilation by Indian courts. To obtain copyright protection for a compilation, it must exhibit some creativity or originality in selection or arrangement of contents of the compilation. There has been no clear pronouncement by the Indian courts on the concept of originality and the term is not defined anywhere in the Indian Copyright Act. Typically each case is decided on the basis of its, peculiar, 'facts and circumstances'.⁴¹

The Indian High courts of Calcutta,⁴² Madras,⁴³ Allahabad⁴⁴ and Bombay⁴⁵ upheld the 'sweat of the brow' theory or the skill, labour and judgment test in deciding copyright infringement of databases. The courts held, 'a compilation developed through devotion of time, capital, energy and skill, though taken from a common source, amounted to a literary work and was therefore protected under copyright'.

In case of *Burlington Home Shopping Pvt Ltd v Rajanish Chibber*,⁴⁶ the plaintiff was a mail order company whose list of customers had been copied by an ex-employee, the defendant; the court appointed a computer expert to visit the defendants premises and to prepare a complete report on the database being used by the defendants; the expert then submitted a report comparing the plaintiffs and the defendants databases and the extent to which copying had taken place; even the names of non-living persons, incorrect addressees and typographical errors had been copied, on which basis the defendant was enjoined. The court based its decisions on the point that no person was entitled to seize for oneself the fruits of another's skill, labour or judgment and even a small amount of creativity was protected in a compilation. These cases clearly show that the 'sweat of the brow' doctrine is being followed by Indian courts in deciding copyright protection to databases.⁴⁷

2) A Shift to 'Modicum of Creativity'

A general trend among countries⁴⁸ can be seen to shift from sweat of the brow to modicum of creativity following the decision of *Fiest*⁴⁹. This modicum of creativity jurisprudence of US court was also seen after many application of sweat of the brow approach. The same approach was seen in the decision of Delhi High Court in *Eastern Book Company v. Navin J. Desai*.⁵⁰ In this case court refused to apply the 'sweat of the brow' doctrine and insisted upon modicum of creativity to satisfy the test of originality. Again, Supreme court denying copyright protection to judgements, held in *Eastern Book Company v. D.B. Modak*⁵¹ that unless a work has been prepared by own labour, skill and there is originality and creativity in its generation, it will not be a protected work. It recognized that compilation may have nothing original on their part but it is the whole work which constitutes an original work as considerable skill and labour are put in. The court also observed that changes like spelling, corrections of typographical errors, additions or eliminations of quotation do not constitute a significant work to warrant a copyright protection in a compilation.

Interestingly, the Supreme Court adopted the "minimal degree of creativity" as the threshold for copyright protection. Deploying such a standard, the court held that mere copy editing would not suffice, as this involved mere labour and nothing else. However, since there is some creativity involved in the making of headnotes, such headnotes would qualify for copyright protection.

IV. CONCLUSION & SUBMISSION

Out of the two extreme approaches of determining originality in computer databases, there is one the "sweat of the brow" approach to originality, which the Canadian court⁵² refused saying too low standard,⁵³ and another is "modicum of creativity" standard. Both of these approaches lead the work to satisfy certain criteria for protection. But as the one approach being too mean and other being too stringent, court therefore adopted a "middle path" approach by enunciating an "exercise of skill and judgment" standard.

The Indian Supreme Court adopting a 'middle path', neither one of any extreme, endorsed the standard set by Canadian Supreme Court and held that:

Creative works by definition are original and are protected by copyright, but creativity is not required in order to render a work original. The original work should be the product of an exercise of skill and judgment and it is a workable yet fair standard⁵⁴

In my view also, database, especially when it pertains to assimilation of data may not necessarily constitute an original work, additionally with the extensive amount of data possessed by companies, correction and verification of it also require significant effort and therefore has the ability to be distinguished from an earlier work. And thus should be protected as compilation, which is distinct from other original works. The original work contained in the compilation (computer database) would already

be the subject matter of copyright. This 'middle path' is required to be followed especially in the case of computer database where the author of database may be collective group or distinct personalities, inputting their own personal data. To protect the privacy of those persons as well as interest of the companies protecting their data, protection is necessary to be given, whether by way of copyright or by *sui generis* rights. If by way of copyright, which is in case of India, this 'middle path' is the cardinal principle.

REFERENCE

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- [2] A "database" is a collection of data stored in an electronic format, a "developer" is the person or party who creates the database and a "database system" is a combination of a database and the software necessary to manipulate that Database. "Database" and "computer database" are used synonymously.
- [3] See Priscilla A. Walter, "Databases: Protecting an Asset; Avoiding a Liability", 8 COMPUTER LAW. 10 (Mar. 1991) (virtually, all businesses, and most individuals, own or use one or more forms of database regularly).
- [4] Latin term for unique. Sui Generis means 'of its own kind or class; unique or peculiar', Black's Law Dictionary, 8th edn, 2004.
- [5] A 'cloud' is the data storage center/facility on internet, which can be accessed by the user through any device and thus assumed virtually data in the cloud.
- [6] Ashok Ram Kumar, "Practical and Legal Protection of Computer Databases" 28 (5) Journal of Library & Information Technology 44 (September 2008).
- [7] Id.
- [8] The Information Technology Act, 2000 based on the UNCITRAL Model Law.
- [9] Explanation (ii) of Section 43 of the Information Technology Act, 2000.
- [10] *Sometimes known as a database management system or DBMS.*
- [11] Available at <http://www.oznetlaw.net/FactSheets/DatabaseProtection/tabid/930/Default.aspx>.
- [12] Jeff Hopkins, "What is A Computer Database?" available at www.hposoft.com/database/fmp/db-def.html (Last Modified May 4, 2003).
- [13] Companies compile tones of personal information based on the personal data entered by persons online which makes them the victims of violation of their privacy rights. See "Big Brother is watching you." Consumer Reports Money Advisor (Oct. 2009) available at: <http://www.consumerreports.org/cro/money/consumer-protection/big-brother-is-watching/overview/index.htm>; "In terms of technical approaches, the requirements for privacy protection for information systems can be addressed in the context of database security. That is, the approaches that are appropriate for privacy protection involve technical means that have been developed for database security." See William Stallings, *Cryptography and Network Security: Principles and Practice* (Prentice Hall, 2011) Chapter 23: Legal and Ethical Aspects; For more broader aspect of privacy law in India see, Bijan Brahmhatt, "Position and Perspective of Privacy Laws in India" Gujarat National Law University.
- [14] Susan Singleton, *E-commerce: A Practical Guide to the Law* 25 (Gower, 2001).
- [15] U.S. DEPARTMENT OF COMMERCE, 1990 INDUSTRIAL OUTLOOK, 29-3 (1990) at p. 8-9 cited in John F. Hayden,

- “Copyright Protection of Computer Databases After Feist” 5 Harv.J.L.Tech (1991) at 215.
- [16] Susan Singleton, E-commerce: A Practical Guide to the Law 28 (Gower, 2001).
- [17] Section 2(o) of Indian Copyright Act, which defines ‘literary work’ to include ‘compilations including computer databases’.
- [18] 17 U.S.C. § 101 (1988).
- [19] UK copyright law traditionally applied a low standard of originality by the application of ‘sweat of the brow’ doctrine in assessing the copyrightability of work. This doctrine considered some independent labour and skill in collecting and verifying the data, enough to protect that compilation under copyright law. *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] 1 WLR 273.
- [20] *Fiest Publications Inc v. Rural Telephone Services Co.* 499 US 340 (1991); in this landmark case, US Supreme Court held that telephone directory was not a protectable work as it lacked sufficient creativity/originality and thus took view contrary to that of UK court’s ‘sweat of the brow’ approach. at p. 345.
- [21] UK law prior to 1st January 1998, as on this date EU Database Directives was implemented by ‘Copyright and Rights in Databases Regulation, 1997’.
- [22] Section 3(1) of the Copyright, Designs and Patents Act 1988.
- [23] Simon Stokes argues that “...despite ‘sweat of the brow’ there was considerable uncertainty as to how copyright in the database could be infringed and in particular how much had to be copied for infringement to occur.” See
Simon Stokes, *Digital Copyright: Law & Practice* 55 (Hart Publications, London 2005).
- [24] David Bainbridge, *Introduction to Computer Law* 54 (Longman, 5th edition, 2004).
- [25] The Regulations were made in order to comply with a European Directive on the legal protection of databases (96/9/EC, OJ L 77, 27.03.96, p.20).
- [26] 26 David Bainbridge and Claire Howell, *Law Express: Intellectual Property Law*, 171 (Longman, 2nd Edition, 2011).
- [27] [2001] 2 CMLR 12.
- [28] (1991) 111 S Ct 1282; 499 US 340 (1991).
- [29] see *Bell South Advertising & Publishing Corp v Donnelley Information Publishing Inc* (unreported) 2 September 1993, 11th Cir.
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- [31] Article 1, Section 8, cl 8 of US Constitution.
- [32] 1996 US Dist. LEXIS 167 (WD Wisc).
- [33] S. 2(o) of Copyright Act, 1957.
- [34] See EU Directive 96/9/EC on legal protection of databases, recital 20.
- [35] The term ‘databases’ was added in 1999 by amendment act of 1999.
- [36] see *Bell South Advertising & Publishing Corp v Donnelley Information Publishing Inc* (unreported) 2 September 1993, 11th Cir.
- [37] The very object of the Copyright is to protect expression; it does not extend to ideas.
“...this concept emerged as far back as in the mid-18th century in which expression was regarded as an ‘abstract and isomorphic’ enough to be copied.” Sherman B., Bentley L., *The Making of Modern Intellectual Property Law: The British Experience, 1760-1911*, (Cambridge University Press, 1999); See also TRIPS Art. 9(2).
- [38] India being a member of the Berne Convention and TRIPS Agreement, the requirement of originality in selection or arrangement of the contents of the database is required to attract copyright protection. Furthermore, the Copyright Act provides that copyright shall subsist in original works of authorship.
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- [40] ‘work or skill or expense’ as per Lord Pearce in *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] 1 WLR 273 at 291.
- [41] Apar Gupta, “Protection of Databases in India: Copyright Termination Sui Generis Conception” 12 JIPR (July 2007) 422-427 at 424.
- [42] *McMillan v Suresh Chunder Deb* ILR 17 (Cal) 951, 961.
- [43] *Govindan v Gopalakrishna* 1955 AIR 42 (Mad) 391, 393.
- [44] *Shyam Lal Paharia v Gaya Prasad Gupta Rasal*, 1971 AIR 58 (All) 192, 195, 199.
- [45] *Gangavishnu Shrikiondas v Moreshtar Bapuji Hegishte*, ILR 13 (Bom) 358, 363 (1889).
- [46] *Entertainment Law Review* 6 (1995) 159 (Delhi).
- [47] Apar Gupta, “Protection of Databases in India: Copyright Termination Sui Generis Conception” 12 JIPR (July 2007) 422-427 at 424.
- [48] Canadian Supreme Court in case of *CCH Canadian Ltd. v. Law Society of Upper Canada*, 2004 (1) SCR 339 (Canada) adopted a “middle path” between the two extreme doctrines enunciated by courts (in the US and UK) to explain as to when a work can be considered “original” enough to merit copyright protection.
- [49] *Fiest Publications Inc v. Rural Telephone Services Co.* 499 US 340 (1991).
- [50] AIR 2001 Del 185.
- [51] (2008) 1 SCC 1.
- [52] *CCH Canadian Ltd. v. Law Society of Upper Canada*, 2004 (1) SCR 339 (Canada).
- [53] “Such a standard (which entitles anyone expending “labour” and “capital” to claim copyright protection) shifts the balance of copyright protection too far in favour of the owner, and fails to allow copyright to protect the public’s interest in maximizing the production and dissemination of intellectual works.” See the views of Prof. Samnad Basheer at <http://spicyip.com/2008/01/are-indian-court-judgments.html>.
- [54] *Eastern Book Co. v. D.B. Modak* (2008) 1 SCC 1.