COPYRIGHT IN COMPUTER SOFTWARE

One of the factors which has contributed greatly to the projection of the topic of copyright into a central position on the legal stage in recent years is the realisation of its potential application to the problems posed by the use of computers.

There are two distinct aspects of the matter - both the extent to which computer programs can be protected against copying and other unauthorised acts, and also the extent to which copyright works, generally in the literary fields as observed in last chapter of this study, can be protected from unauthorised computer use.

Computers have been with us in a commercially viable for less than thirty years, but the rate of expansion in their use has been phenomenal. In this area of technology as in a number of others there has been a reduction over the years in the physical size and relative cost of the equipment and a consequent increase in their accessibility. Computer technology has revolutionised our lives directly and indirectly over the last quarter of a century, but copyright law has only recently come to terms with this technology.

The magnitude of the problem to provide copyright protection to computer programs is staggering: it has been estimated that some 15,000 computer programs are written each day in the United States and the total value of this software is in the tens of billions of dollars.¹

The growth oriented change in the India’s economic policy necessitates availability of latest information to all in all fields. In order to
realise the dream of changing our country from developing into developed and from bulk importer to bulk exporter, the latest information had to be made available to the experts in different fields for action and interaction. In order to change the process from manual to electronic for information, not only are computers essential but various types of computers like desk top computers, master computers to feed desk top computers and super computers to which the master computers are linked, are essential. Thus, the purpose served by the memory bank in the shape of a monster machine will be of great utility in the development of our socio-economic, political, scientific and cultural life. Since a massive amount of time is required to create a computer program and the investment in terms of money is huge, reproduction of this software by pirating the original will be much easier and would not involve expenditure of so much of time and money. Therefore, some kind of protection must be provided to creators of software against piracy. otherwise, we may reach a stage when no one is willing to create software for the simple reason that returns are not equal to the investment.\(^3\)

While it has been recognised world over that the computer technology is best protected by the use of an array of legal rights, for example contract, patents, trade secrets and trade marks, it has been accepted widely that copyright protection normally would be the most important mechanism to rely upon.

This chapter, therefore, examines at length the question of copyrightability of computer generated works, computer programs etc. It discusses the question of duration, joint - authorship and works produced
during the course of an employment. It also makes an attempt to evaluate the recent legislative amendments undertaken by U.K., U.S.A. & India with regard to copyright in softwares.

(A) COPYRIGHT LAWS ON SOFTWARE & RECENT LEGISLATIVE ACTIVITY:

'Software' is a general term for what is fed into a computer, whereas the machines themselves are known as the 'hardwares'. Thus, the question of the extent to which proprietary rights may exist in computer programs has become an important issue. But the U.K. copyright Act 1956 and its Indian counter part, Indian Copyright Act 1957 and similarly the U.S. Copyright law prior to 1976 revision, were all silent on the question of computers probably as it were still early days for computers.

United States was the first country which recognised that the computer databases represent an increasingly significant and valuable form of intellectual property, which the 1976 House Report specifically declared to be copyrightable as 'literary works'\(^4\). With respect to computer programs the report was a bit more guarded; it expressed the intention to cover them as 'literary works' to the extent that they incorporate authorship in the program's expression of original ideas, as distinguished from the ideas themselves\(^5\). Following the recommendations of the National Commission on New Technological Uses of Copyrighted Works (CONTU), the U.S. Congress amended the statute in 1980\(^6\), adding a definition of 'computer' program (a set of statements or instructions to be used directly or indirectly in a computer to bring about a certain results')\(^7\), and
making clear that, although they were not expressly listed among the seven categories of copyrightable works, computer programs were eligible for copyright protection as literary works. It has remained for the courts to determine whether particular types of programs were entitled to copyright protection.

In United Kingdom also, the Copyright Act 1956, the former major source of copyright law, was silent on the question of computers as it were still early days for computers when the Act was brought into force. However, growing disquiet in the computer industry, and the perceived reluctance of the courts to come to grips with the question of copyright protection of computer programs, caused an amending piece of legislation to be passed. Known as the Copyright (Computer Software) Amendment Act, 1985. This Act confirmed that computer programs and works created using a computer or stored in a computer were protected by copyright. The Copyright. Designs and Patents Act, 1988 whose principal provisions as they relate to copyright came into force on 1 August 1989 further consolidated the copyright protection of computer programs and works created using computers or generated by computer, by and large satisfactorily. There are, however, as detailed later in this chapter, some areas of doubt which have to be resolved by the courts.

As far as Indian Copyright Act, 1957 is concerned, for the same reasons as its British counterpart, to begin with it did not have any provision granting protection to computer software. But in the early years of the last decade itself, the need of giving some copyright protection to the software was recognised by us since the cost of developing a program
is far greater than the one involved in duplicating it, this works as an incentive to pirates to go in for unauthorised duplication at the cost of original creator of a program. Therefore, the programs will be disseminated only if the creator can recover all his costs plus some kind of profit and he can spread his cost over sale of number of copies of his work with some kind of protection from unauthorised duplication since these works are the product of great intellectual effort and their utility can not be questioned. As a result of this recognition, the Copyright Act was amended in 1983 to give protection to software by including it in the definition of ‘literary’ works. This was also justified because India did play a leading role in the Paris Revision of Berne Convention in 1971.

The Copyright (Amendment) 1994 has also significantly altered the Indian copyright law and brought several areas in conformity with Uruguay Round Agreement on Trade - Related Intellectual Property Rights (TRIPS). These changes are of particular importance to the computer industry in that a new ‘rental right’ of computer programs has been created, the traditional fair dealing exception has been eliminated and radical new penalties have been imposed on users of infringing programs.

(B) MEANING OF SOFTWARE:

For effective protection, it is essential to know in material details as what is sought to be protected. Therefore, there must be a workable definition of software program which qualifies for protection.

Computer software is explained to constitute the following three elements:

(i) "Computer program" - which is a set of instructions capable, when put in computer, or causing a machine having information processing capabili-
ties to indicate, perform or achieve a particular function, task or result;
(ii) "Program Description" - which is a comprehensive procedural presentation in verbal or other form, in sufficient detail to determine a set of instructions constituting a corresponding computer program;
(iii) "Supporting Material" - which is any material other than a computer program or a program description, created for aiding the understanding or application of a computer program, i.e. problem descriptions and user instructions.

Thus, the definition of software covers not only the actual software but also switching operations of hardware components according to a particular program and the action which translates other programs expressed in a programming language into the final form”. It also covers many other kinds of programs complementing the hardware in a computer so as to make easy the carrying out of the new programs in view of this comprehensive definition, it is important to protect the rights of the individuals and the firms which develop software.

(C) **COMPUTER PROGRAMS** :

“Computer software”, thus in all the three countries which form the subject matter of present study includes computer programs, computer files and associated printed documentation such as manuals for uses. There has never been in both United Kingdom as well as U.S. & India any difficulty with regard to printed materials as these have been and continue to be protected by copyright as literary works in the case of diagrams or flowcharts, as artistic works. The protection of the computer programs themselves in United Kingdom has been less certain and before 1985, it
was unclear whether computer programs were protected by copyright. One view was that listings of source code programs were protected as literary works by analogy with codebooks or because they resembled written English to some extent. On the whole, the courts appeared to be sympathetic towards the notion that computer programs were protected. For example, in *Saga Enterprises Ltd. V. Richardo*\(^1\), which was concerned with the alleged copies of the computer game ‘FROGGER’ (the object of which was to get a frog across a busy road without being squashed by a lorry), the trial judge was of the opinion that the source code program was protected by copyright and the object code was protected indirectly as an adaptation of the source code version. However, this was an interlocutory hearing only and the case did not go to a full trial, so the point was not finally decided. Indeed, cases involving copying of computer programs did not seem to get beyond the interim stage, probably because the relief granted by the court was sufficient to satisfy the plaintiff.

Following considerable pressure from the computer industry, notably from their lobby group FAST (the Federation Against Software Theft), the Copyright (Computer Software) Amendment Act was passed in U.K. in the year 1985 which made it clear that computer programs were protected as "literary works."\(^1\) The situation is made even clearer in the 1988 Act. Section (1) says that copyright is a property right which subsists in accordance with the provisions of Part 1 of the Act in original literary works. Section 3(1) says that ‘literary works’ means any work (except for a dramatic or musical work) which is written, spoken or sung and accordingly includes:
(a) a table or compilation and
(b) a computer program

These wordings make it absolutely clear that computer programs are literary works and not simply to be protected as though they were literary works. Neither the word ‘computer’ nor the phrase ‘computer program’ is defined in the 1988 Act. This is sensible in view of the rapid rate of change in the computer industry as attempts to offer precise definitions would probably prove to be undue restrictive in the light of future changes in technology. It is better to allow the judges to use their discretion sensibly, permitting a degree of flexibility in this respect. In the United States, on the other hand, though the Copyright Act 1976 as noted above did not specifically include computer software within its ambit, yet the copyright office did in fact begin to accept computer programs for registration as ‘books’ in 1964. The Supreme Court in 1972 quoted a 1966 report of the President’s commission on the patent system to the effect that copyright protection, rather than patent protection, was available for computer programs. The definitional provisions of the Copyright Act of 1976 encompasses computer programs and data bases in the definition of "literary works." This definitional section was amended in 1980 by the Computer Software Protection Act to include a definition of a computer program as a "set of statements or instructions to be used directly or indirectly in a computer to bring about a certain result." The copyrightability of computer programs is, therefore, said to be firmly established since 1980 amendments to the Copyright Act, 1976 though some doubts have been raised as to programs written in object code.
As far as Indian definition is concerned, the 1983 amendment in 1957 Act has now provided in explicit terms a definition which is similar to one in United States. The "literary work", the amendment laid down includes "tables and complication and computer programs that is to say, programs recorded on any disc, tape, perforated media or other information storage device, which, if fed into or located in a computer or computer based equipment is capable of reproducing any information." The section was amended again in view of the concerns expressed by societies against theft of computer software and wider and more simpler definition has now been provided by the 1994 Amendment. It lays down that "literary work", "includes computer programs, tables and compilations including computer data basis." Further unlike the and United Kingdom and United States, the 1994 Indian Amendments also give definitions of both 'computer' as well as "computer programs," "computer," it says, "includes and electronic or similar device having information processing capabilities". "Computer programme" means "a set of instructions expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a task or achieve a particular result".

(D) **RECORDED IN WRITING OR OTHERWISE**:

It is a pre-condition of copyright protection that there be some physical manifestation of the work. The 1988 U.K. Act provides in explicit terms that copyright does not subsist in a literary, dramatic or musical work unless and until it has been recorded in writing or otherwise. ‘Writing’ is defined by section 178 to include any form of notation or code,
whether by hand or otherwise and regardless of the method by which, or medium in, or on which, it is recorded. This is a very broad definition and as a result software will be protected whether it is written out in long hand, entered on to a disc or tape or any other means of storing the computer software. However, it is absolutely clear that if the software, or any part of it, is only planned mentally, then copyright protection will not be given to that work unless and until it is recorded in one of the means included by the Act. Whilst not specifically set out in the Act, it is in the nature of an artistic work that it should be in some visible form.  

In the United States also, there is a great emphasis on some form of fixation before a work can be entitled to copyright protection. The U.S. Act, therefore, lays down that the work must be fixed in any tangible medium of expression, now known or later developed, from which it can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device. A work is "fixed" in any tangible medium of expression when its embodiment is sufficiently permanent or stable to permit it to be perceived, reproduced or otherwise communicated for a period of more than transitory duration. The purpose of this broad definition was to overrule the former doctrine that copies, in order to be entitled to copyright protection, must be visually perceptible, that is, capable of being seen and understood by the naked eye.

Thus, under the Copyright Act of 1976, it makes no difference what the form, manner or medium of fixation may be, whether it is in words, numbers, notes, sounds, pictures, or any other graphic or symbolic indicia, whether embodied in a physical object in written, printed, photographic,
sculptural, punched, magnetic or any other stable form, and whether it is capable of perception directly or by means of any machine or device now known or later developed.\(^2\)

The Indian law on the point is also similar to that of U.K. and U.S.A. as it also requires some form of writing, fixation or otherwise.

(E) **REQUIREMENT OF ORIGINALITY & COMPUTER PROGRAMS:**

It has always been a requirement in the three countries under discussion in the present study that a literary, dramatic, musical or artistic work be ‘original’ and this is retained as has been seen, by section (1) of the U.K. Copyright, Design & Patent Act, 1988. This use of the term is most certainly not the same as used in connection with patent law. There have been many decisions on this issue, but it comes down to saying that a work is original to the author, in the sense that the author has not copied it from someone else. As Paterson J said in *University of London Press Limited V University Tutorial Press Limited*,\(^2\)

The word *original* does not in this connection mean that the work must be the expression of original or inventive form. Copyright Act is not concerned with the originality of ideas, but with the expression of thought, and, in the case of ‘literary work’, with the expression of thought in print or writing. The originality which is required relates to the expression of the thought. But the Act does not require that the expression must be in an original or novel form but
that the work must not be copied from another work
- that it should originate from the author.

A phrase often used in this context is to say that an original work is one upon which an author has expended sufficient skill, industry or experience. Similarly, Lord Devlin observed in *Ladbroke (Football) Ltd. V. William Hill (Football) Ltd*:

The requirement of originality means that the product must originate from the author in the sense that it is the result of a substantial degree of skill, industry or experience employed by him.

Similarly in the United States, the essence of copyright protection is originality rather than novelty or invention. To be copyrightable, a work must be original in the sense that the author has created it by his own skill, labour, and judgement, but no large measure of novelty is necessary, all that needed is that the “author” contributes something more than a merely trivial variation, something recognizably *his own* Thus, for copyright purposes, originality is something less than the novelty or uniqueness necessary for patent protection. In other words, copyrighted matter need not be strikingly unique or novel, and any distinguishable variation resulting from an author’s independent creative effort will suffice.

Indian copyright law on the question of *originality* is the same as one in U.K. and United States. The requirement of *originality* in Indian law, as elsewhere, does not refer to ideas but rather to the manner and material forms of expression. The Copyright Act specifically emphasises the requirement of *originality*. Section 13 says that copyright subsists in
three classes of work:

(a) *original* literary, dramatic, musical and artistic works;
(b) cinematograph films; and
(c) records.38

But as noted above, the objective of copyright, it has been stressed in India, is not to create *monopoly in ideas* rather the protection aims at prevention of unlawful reproduction of dealing with the manner and material forms in which ideas are expressed.39 Consequently, *originality* also refers not to novelty or creativity in ideas but only to the manner and material form of their presentation. What is protected is the expression of thought - the form, formulation, order, plan, or arrangement of presentation - as testifying to the investment by the author or mental faculties, skills, competence, craftsmanship, knowledge, labour and capital in the production of any work.40

(F) IDEA VERSUS EXPRESSION DICHOTOMY:

A further distinction that causes much difficulty in practice is a differentiation between the idea and the expression. Copyright as noted above will protect the expression but not the ideas: this is axiomatic in copyright law. This matter in relation to computer software is considered more fully later in the chapter but for the moment it is enough to state that copyright law is intended to protect the particular way in which an idea is recorded, but it is not intended to give protection to the idea itself.

(G) COPYRIGHTABILITY OF COMPUTER SOFTWARE:

(i) Source and Object Code:

Applying the above principles it can be seen that copyright will
protect computer software in the three countries which form subject matter of present study which is recorded in ‘writing’ (as defined widely in the U.K. Act of 1988) and which is original (which has also been given a wide meaning in the three jurisdictions by their courts). At this point, it is necessary to say something of the various ways in which the term ‘computer software’ can be understood. At what is often known as a high level software is produced by the programmer in source code. This can be in one of many computer languages, which each consist of a series of commands addressed to a computer. This can be written out in longhand or it can be entered directly into a computer. It is often said to be human readable, since many computer languages use English words and expressions set out in continuous lines of text.

However, the computer can’t cope with source code. Source code must be converted into a form which a computer can understand. To this end, source code is ‘compiled’ or ‘assembled’ by means of appropriate software to become the object code version, often said to be machine readable or low level. At this stage, the computer software no longer has the format of human language but is series of digits, either 0 or 1 and grouped together in bytes, each of which is the smallest possible store of information, e.g. a single character. A byte will normally consists of eight individual bits, each bit being a 0 or 1.

At an even lower level, micro-code can exist in the form of micro-instructions used in a micro-processor. Micro-code takes the instructions given to the computer by the object code and breaks it down into a series of steps to be performed by the computer. Such micro-code is often stored
in a ROM (read only memory) which is a hardware device containing the micro-code and which can not be changed by the user.

There seems no reason to understand that the 1988 Act of United Kingdom does not protect computer program in any of these forms. The Act certainly unlike the 1994 Indian Amendment Act gives any definition of computer programs but wherever expression computer program is used, it is used in a very wide & broad sense. Section 21 (4) states that in relation to a computer program, a translation includes a version of the program into which it is converted into or out of a computer language or code or into a different language or code or into a different computer language or code, without specifying whether it is intended to exclude a particular variety of computer language or code at or below a certain level. This certainly includes, for example, the compiling of source code into an object code, or the decompiling of object code into source code as well as converting a computer program written in one computer language into another.

It is important to be aware, however, that courts in other jurisdictions have not always accepted this British position that all forms of computer programs are protected by copyright. For example in Computer Edge Pay Limited V. Apple Computer Inc., the High Court of Australia decided that copyright did not vest in the object code form of original source code programs, but the effect of this decision was subsequently changed by Statute. On the other hand, in the United States, the courts have, after some initial hesitation, been prepared to accept that software in objective code can be protected by copyright. Furthermore, the American Courts seem to accept that micro-code embodied within a read only
memory forming a micro-processor can also be protected by copyright. Since "object code" is not readable by people, the question in the U.S. has been raised as to whether a computer program written in object code is a "writing" within the meaning of the Copyright Act and, since such programs are normally written in source code and compiled by a separate program into object code, there is a further question whether such programs are authored by a person, rather than a machine. It has been suggested that even if object code is analogized to a recording of a photograph record or a tape in a form that the machine can recognize and play back such items being clearly copyrightable - the transposition of the binary code into a circuit design that replicates the on-off switching of the binary form object code using sophisticated optical, electrical, photographic, and other processes raises serious questions of copyright protectability since the work is not a "writing" but is, in microchip form, a part of a machine, a utilitarian object and hence not normally copyrightable. Some writers have, therefore, concluded that object code is probably not protected by copyright law under the Copyright Act of 1976, as amended by the Computer Software Copyright Act of 1980.

It has been suggested that since the 1980 amendments did not change the definition of "copies" in the 1976 Act, the 1980 Act merely reinforces the view that copies of programs must be in intelligible form for them to be protected under the copyright laws.

But there is a contrary authority as well. Thus, it has been said that the 1980 Computer Software Protection Act, by defining a computer program as a "set of statements or instructions to be used directly or
indirectly in a computer to bring about a certain result.\textsuperscript{49}, includes both source code "statements used indirectly" in a computer) and object code ("instructions" used directly in a computer), as well as microcode, whether Rom or Ram resident.\textsuperscript{50} The courts, too have generally recognised that copyright protection extends to programs in object code form stored on tapes, discs, or Read only Memory (ROM) chips, since such ‘“works’” are fixed in a tangible medium and can be reproduced with the aid of a machine.\textsuperscript{51}

A computer program, whether in object code or source code, is a ‘“literary work”’ within the meaning of the copyright Act and is protected from unauthorised copying, whether from its objects or source code version.\textsuperscript{52} It has been further held that where plaintiff had copyrighted the source code of various operating programs such copyright protected the object code as well.\textsuperscript{53}

The Indian Copyright Amendment Act of 1994 has taken care of aforesaid problems and has provided that literary work includes a computer programme. The definition of ‘computer programme’ is wide enough as noted above to include both object code as well as source code since there has not been any litigation on this issue, there is no judicial pronouncement on the question in India.

\textbf{(H) COMPUTER GENERATED WORKS :}

The 1988 U.K. Act provided for the first time in U.K. for the existence and ownership of computer generated works. By Section 178 of the Act a computer generated work is defined as a work which is generated by a computer without there being any human author of the work, but the precise scope of what sort of works are being referred to is not mentioned.
Section 9 (3) which deals with the question of ownership of rights in computer-generated works and speaks of the case of literary, dramatic, musical or artistic works which are computer generated, so clearly the scope is potentially very large.

(i) **Screen Displays**

It is thought that English law also gives protection to screen displays produced by the computer program. Protection will be available for the underlying program in the ordinary way but provided that it can be shown that the screen display or form display passes the ordinary criteria for the vesting of copyright (in particular the question of originality) then copyright will inhere in those forms. The position in U.S. and India is no different.

Depending on what exactly it is that is being displayed, copyright protection may be sought for the screen displays as a literary or as an artistic work. An artistic work is defined in Section 4 (1) of the U.K. Act of 1988 to include graphic works, paintings, drawings, diagrams, maps, charts and plans. The Indian definition of Section 2 (c) is also on the same lines when it says that an artistic work means - a painting, a sculpture, a drawing (including a diagram, map, chart, or plan), an engraving or a photograph, an architectural work of art and any work of artistic craftsmanship. It is specifically stated in the definitions of both U.K. as well as India that artistic quality is not relevant consideration and, thus, pictorial representations of whatever sort appearing as part of a screen display will be protected as artistic works in their own right.

If the screen display consists of a moving image, then copyright protection as a film could also be relied on. 'Film' is defined in the U.K.
Act to mean recording on any medium from which a moving image may by any means be reproduced. Similarly Indian definition is very wide, infact wider than the one in U.K. is adopted by the 1994 Amendment to Copyright Act. Section 2 (f) now lays down that “cinematograph film” means any work of visual recording on any medium produced through a process from which a moving image may be produced by any means and includes a sound recording accompanying such visual recording and “cinematograph” shall be construed as including any work produced by any process analogous to cinematograph including video-films. Similarly in cases where computer program itself is responsible to some extent for deciding what is displayed on screen (e.g the component in a moving computer game), the protection for the work as a computer generated work might also be invoked.

(ii) **Electronic Videogames**:

In the field of electronic videogames, a copyright owner sometimes focuses on claimed infringement of the game display rather than on a claim that the computer program itself was copied. One reason for this is that a principal concern of the owner is that the game not be copied, even if it is possible to reproduce it with programming that differs in some respects from the original. Second, it often will be quicker to establish that the videogame rather than the underlying program has been copied. The problem in this connection did arise in the United States in 1982 case involving the spaceship game scramble. The defendant contended that the plaintiff’s audiovisual display was not an original work of authorship because its features were determined by the underlying computer pro-
gram. The federal appeals court in New York disagreed:

The...features of the audiovisual display are plainly original variations sufficient to render the display copyrightable even though the underlying written program has an independent existence and is itself eligible for copyright.

The court also dealt with the issue of whether the variable nature of the audio-visual display meant that the game was not "fixed" in a tangible medium of expression. The court rejected this argument, stating in part:

No doubt the entire sequence of all the rights and sounds of the game are different each time the game is played. . . . Nevertheless, many aspects of the sight and the sequences of their appearances remain constant during each play of the game... it is true... that some of these rights and sounds will not be seen and heard during each play of the game in the event the player's spaceship is destroyed before the entire course is traversed. But the images remain fixed, capable of being seen and heard each time a player succeeds in keeping his spaceship aloft long enough to permit the appearances of all the images and sounds of complete play of the game. The repetitive sequence of a substantial portion of the rights and sounds of the game qualify for copyright protection as an audiovisual work.
Thus, an electronic or videogame may be copyrightable as an audiovisual work, since such a game consists of visual and aural features of an audiovisual display containing original variations sufficient to render the display copyrightable as an audiovisual work even though the underlying written program has an independent existence and is itself eligible for copyright.

(iii) Databases:

Copyright protection for the information assembled in a computerised database is less certain under the English law. For the same reason, it was decided not to address this issue in the 1988 Act and there are no English cases which give guidance in this area.

Looking at the traditional law on copyright, where information is extracted from a diversity of sources and compiled into one directory or compilation, then a copyright as a literary work will vest in the ‘author’ or person who performs the work of compiling according to ordinary principles. Naturally, the requisite amount of originality must be shown, and it is, therefore, necessary to show that skill and labour have been spent in the work of compilation. Section 3 (1) of the U.K. Act expressly provides that a literary work as defined extends to cover ‘a table or compilation’. A copyright will subsist in the compilation which is separate from any copyright which may subsist in any of the works comprised in the compilation.

This can be seen by the case of Black Lock & Co. Ltd. V. Pearson Ltd., where copyright protection was held to vest in a well known
national publication giving the railway time-tables for the index thereof. More recently, in *Independent T.V. Publications Ltd. V. Time Out Ltd.*, protection of copyright was held to exist in the compilation of the T.V. and radio programs as they appear in the radio times and T.V. times and it was held an infringement for these to be copied and produced in the magazine *Time out*. However, where selection of materials is trivial or common place then copyright protection will be denied. There indeed seems to be no reason in principle why cases which apply to manually maintained databases should not also apply to computerised databases.

In the United States, on the other hand, in December 1980, the Congress amended the 1976 Copyright Act so as to explicitly place copyright owners of computer programs in the same general copyright law position as owners of other literary works. The 1980 Amendment as noted above defines a computer program as a set of statements or instructions to be used directly or indirectly in a computer to bring about a certain result. The 1976 Copyright Law's standards for copyrightability are, by and large, indifferent to medium in which a work of authorship is embodied. Because compilations of data on paper have often been recognised as capable of qualifying as works of authorship, there would seem to be no special problem in carrying over the context as observed above regarding British position, to compilations when in the form of machine-readable materials such as magnetic tapes and disks.

The 1976 Congress was thus willing to acknowledge that copyright would apply, but it was unsure as to precisely how it should apply in connection with computer user of computer data bases or, indeed, of other
copyrighted works. Consequently, congress retained the *status quo* and while it waited for CONTU to complete its studies and report. The way in which Congress preserved the *status quo* was to include in the 1976 copyright law a provision stating that the law.

> Does not afford to the owners of copyright in a work any greater or lesser rights with respect to use of the work in conjunction with (computers)... than those afforded to work under the law in effect on December 31, 1977, as held applicable and construed by a court in an action brought under ...(the 1976 copyright law)

The notion of preserving the pre-1978 law was not a satisfactory long-term solution, as few, if any, people were confident that they knew what the applicable legal standards were. This area of law was quite undeveloped. CONTU, after studying the issue of computer data bases in the context of a general provisions of the 1976 Statute, concluded that the ordinary statutory standards were, by and large, suitable for coping with the issues that arise when works are used in conjunction with computers. And, in order to make the general copyright law provisions applicable to such matters, CONTU recommended that the clause quoted above be deleted from the law. Congress followed that recommendation in its 1980 Amendment to the Statute.

Coming to India, the Indian Copyright law after the 1983 amendment did define ‘literary work’ to include compilation and computer programs, that it to say, programs recorded on any disc, tape, perforated
media or other information storage device, which, if fed into or located in a computer or computer based equipment is capable of reproducing any information and thus was sufficient to include databases but the 1994 Amendment further made the position more explicit by expressly including ‘databases’ in its new definition of “literary work” which now includes computer programs, tables and compilations including computer data bases.69

(iv) **Documentations**:

Documentation in the form of instruction manuals and the like will consist of written text along with diagrams or perhaps, pictures and photographs as well. It is clear that such works will be protected in the three jurisdictions as literary or artistic works as appropriate.

(I) **OWNERSHIP OF COPYRIGHT**

(i) **Authorship and Ownership Distinguished**:

In the three countries which are under study, two concepts are used i.e. *authorship* and *ownership*. The author in relation to a work, means the person who creates it. For instance the 1994 Indian Amendment to Copyright Act lays down in Section 2 (d) (vi) that in relation to any literary, dramatic, musical or artistic work which is computer generated, the author shall be the person who causes the work to be created. Secondly, there is the concept of first owner, the person in whom copyright vests immediately, as from its creation (regardless of the subsequent devaluation or dealing in that copyright).

In these countries as in most other jurisdictions, the author is the first owner of any copyright in it but there are exceptions to this rule which are to be examined.
(ii) **Computer - Generated Works**:

In relation to computer generated works, Section 9 (3) of the U.K. Act 1988 states that where any literary, dramatic, musical or artistic work is computer generated, then the author is taken to be the person by whom the arrangement necessary for the creation of the work are undertaken. There appears to be two candidates for the role of the person who makes the arrangements necessary for the creation of the work. Either this could mean the person who produced the computer program in the first place which was responsible for generating the work in question, the operation of the program which generated that work. It is submitted that the Section is aimed at the latter person, the person who controls the actual operation of the computer program. However, the matter is not beyond doubt and a written agreement between the parties expressly dealing with the issue of copyright ownership of computer - generated works is always advisable.

This new provision dealing with computer generated works is an important and innovative feature of the 1988 Act. With the widespread use of programming tools and automated processes, there are increasing cases of works, including computer software, being created where there is little or no identifiable human skill or labour. Examples of these computer generated works include the telephone directory, crossword puzzles, weather maps produced by communication from a satellite to a computer and the output of expert systems.

However, care must be taken to distinguish between ‘computer generated works’ and so called ‘computer aided work’s. Where the use of a computer is incidental to the creation of a copyright work, and it can be
said that there has been an expenditure of human skill and effort, then the availability of copyright protection for these works produced with the aid of a computer will be subject to the normal rules and not the special provisions of Section 9 (3). A common example of a computer aided work is a literary work written using a word processor.

(iii) Employees And Freelance Programers:

The author of a work is the first owner of the copyright in the work. An exception which applies to literary, dramatic, musical or artistic works, is where the work is done by an ‘employee in the course of his employment’ in which case, in all the three countries i.e. U.K., U.S.A. & India, the employer becomes the first owner of the copyright in the work. This raises the vital questions such as who is an employer? What is the meaning of in the course of an employment and what is the position regarding ‘freelance computer programmers’ and ‘consultants’?

Both the U.K. Act of 1988 and Indian Copyright Act, 1957 do not specifically define these terms but state that ‘employed’ ‘employee’ and ‘employer’ and ‘employment’ refer to employment under a contract of service or apprenticeship.73

(iv) The Employee and the Course of Employment:

As regards persons who can safely be classified as employees, their employers can not safely assume that they will own the copyright in everything produced by those employees. For example, if an employee writes a computer program to help with his work but he is not employed as a computer programmer, his job is not to write computer programs and
an employer can't necessarily assume that he owns the copyright of that particular program. A lecturer normally owns the copyright in any book or article he writes because he is primarily employed as a teacher and not as a writer of books and articles, even though his employer may encourage such writing. A person employed as an accountant who writes a computer program to help with the production of financial accounts will own the copyright in that program if he wrote it in his own time, using his own equipment. Initially, this may create no problems because the accountant may have been motivated by interest and a desire to improve his own efficiency at work, but problems could arise later, if the accountant moves to another firm or discovers that his program is commercially viable. If an employer is faced with the situation where an employee has in his own time and using his own equipment, developed a useful computer program, then the employer should immediately try to reach agreement on question of ownership and use of the programs with the employee concerned, rather than allowing the program to be used without such agreement.

If an employee has produced a computer program outside the normal course of his duties, but has used his employer's equipment or done it during the hours of his employment, the ownership of copyright is more difficult to predict, although it is more likely that the employer will be treated as owner. But, even here, it is wiser to seek agreement at the outset rather than leave matters until there is some disagreement about the continued use or the exploitation of the program. 74

The construction of the words 'in the course of his employment' has on occasions, created difficulties which have received judicial attention.
For example, in *Byne V. Statist company*, the court had to consider this question in connection with a translation of a speech made by an employee. The employee in question was on the editorial staff of the Financial Times and actually performed the work of translation in his own time and received a fee for this. It was held in action by the employee against another journal which had reproduced the text of the speech, that the employee was the owner of the translation as it had not been made in the course of his employment. To create a translation from Portuguese into English was outside the normal functions of an employer on the editorial staff of a daily newspaper.

In a more recent case on this matter, Judge Paul Baker was prepared to extend an interlocutory injunction until trial against a defendant who, it was alleged, has created a rival computer program whilst working for the plaintiff and notwithstanding that the defendant might have produced his program in his spare time and or his own machine, the facts were in dispute and the judge was not prepared to make any decision on the law, but, in accordance with *American Cynamid* principles found, he could not say 'that the plaintiff had no real prospect of success.'

(v) **Freelance Staff:**

In many cases, freelance staff, hired to perform a particular task such as writing or modifying a specific computer program, will be deemed to be self-employed. The consequence of this is that the copyright in any program they write will, *prima facie* and in the absence of any agreement otherwise, belong to the freelance programmer. It is essential, therefore, when employing freelance staff or anyone else who is not employed on a
permanent contract of employment, to make contractual provision for
determining ownership of copyright. The organisation hiring the program­
er or consultant may want to own the copyright so that it can exploit the
resultant program itself, or it may simply want to prevent its competitors
from obtaining a copy of it. In either of these situations the contract should
specifically state that the first ownership of the copyright belongs to the
organisation and not to the programmer, and furthermore, there should be
a written assignment of copyright, signed by the freelance programmer.
It is possible in the case of a commissioned work that there is an
enforceable contract, the party issuing the commission will be considered
an equitable owner, entitled to call on the author who, according to the
statute, is the legal owner, to make a proper legal assignment of his entire
interest to the commissioner. Such cases have been rare, but an English
example was Merchant Adventures Ltd. V. MGrew & Co.\textsuperscript{77}, where, the
plaintiff had commissioned certain designs for electrical light fittings and
it was held that the plaintiff acquired an equitable title sufficient to form
the basis for an interlocutory injunction. It should be noted that the action
was not taken against author of the copyright work, and he indeed made no
claims to the works he had produced. In one case which is otherwise of
interest on the question of interlocutory injunctions, a commissioner of
software was held to have an ‘immensely’ arguable’ case that he was
beneficial owner of it\textsuperscript{78}, on a hearing for interlocutory relief, but the Court
of Appeal, like the judge at first instance, did not elaborate on this or
investigate in detail the merits of the case.
(vi) **Joint Authorship and Ownership**:

It is often the case that a software house will establish a software development team of programmers comprised both of its own staff and of independent freelancing programmers. If the contract for the engagement of the freelance programmers says nothing to the contrary, then it is certainly possible that a work of joint authorship has been created. This is defined in all three countries (U.K., U.S.A. & India) to be a work produced by the collaboration of two or more authors in which the contribution of each author is not distinct from that of the other author or authors. In this case, copyright could then vest in all the authors, or their employers. In the illustration given above, this would mean that the software house would own the resulting software jointly with the independent third party programmers.

However, the above illustration must be distinguished from the position where a number of people have made separate contributions to a software development project, each of which can be identified as such. In this case, a number of different and separate copyrights may exist in the programs and related documentation.

**(J) DURATION OF COPYRIGHT**:

If copyright vests in a work, then it will vest as from the moment of that work's creation. Unlike U.S., under the English & Indian laws, copyright begins automatically without the need for compliance with any formalities.

In relation to a computer program, copyright expires at the end of the period of 50 years from the end of the calendar year in which the author
dies. In U.S., generally it is for 75 years from the first publication. It does not matter that the first owner of the copyright is a different person from the author: thus, if a computer programmer is under a contract of employment with a company, and produces a computer program in the course of his employment, then according to the normal rules, the first owner of the copyright will be the employer not the author but the duration of that copyright will be worked out by reference to the lifespan of the employee programmer plus 50 years.

The right for exploitation of a work under the Copyright Acts, are given for too long a time. It is submitted that with the fast changing reproduction technology, the authors can get returns in the market much faster than their counterparts could get in past. Therefore, there is a need to reduce this time for exclusive use of a work by the author, more so in the case of a fast-changing electronic technology and computer software. It is, therefore, suggested that five or seven years period will be sufficient for the creator of software to get returns in the market with fair share of profit. This has the effect of modifying the present system where the protection is available to the authors for the lifetime and until fifty years after their death from the beginning of the calendar year next following the year in which such author dies and in case of institutional work, it is available for fifty years from the beginning of the calendar year next following the year in which the work is first published.

(i) **Computer - Generated Works**:

Section 12(3) of the U.K. Act of 1988 provides that if a work is computer generated, copyright expires at the end of the period of 50 years
from the end of the calendar year in which the work was done.

(ii) **Works of Joint Authorship:**

It should be noted that different provisions apply in relation to a work of joint authorship, where in general the copyright will last for a period of 50 years after the end of the calendar year in which the last of the author dies.\(^\text{82}\)

Where work is of unknown authorship, then copyright expires at the end of the period of 50 years from the end of the calendar year in which the work is first made available to the public. In both U.K. & India, the identity of an author will be regarded as unknown if it is not possible for a person to ascertain his identify by reasonable inquiry and if the identify of an author is once known, a work can not subsequently be regarded as unknown.

(K) **RESTRICTED ACTS OF COMPUTER PROGRAMS:**

The copyright laws in the three countries give the owner of copyright the exclusive right to do certain acts and these are referred to as acts restricted by the copyright. Of the acts restricted by copyright, three are worthy of special mention as far as computer programs are concerned. these are :

(a) Copying,
(b) Issuing copies to the public, and
(c) Making an adaptation

It may seem strange, but the word ‘copy’ is new in the U.K. Act of 1988, as the word used in the Copyright Act of 1956 was ‘reproduce’. However, copying in relation to a literary, dramatic, musical or artistic
work means, by Section 17(2), reproducing the work in any material form which includes storage in any medium by electronic means; for example, making a copy of a computer program on a magnetic disk. Additionally, in relation to all forms of copyright work, copying includes making copies which are transient or incidental to some other use of the work (Section 17(6). This implies that the act of loading a computer program into a computer only for the purpose of running the program will be considered to be making a copy of the program, even though this 'copy' will be lost as soon as the computer is switched off. In this way, any unauthorized use of a computer program will infringe the copyright in that program.

Issuing copies of a work to the public is a restricted act and will infringe copyright if done without the permission of the owner of the copyright. As regards computer programs, sound recording and films, Section 18 widens this restricted act to include rental of copies to the public. However, this restricted act is only relevant in the context of a particular work if copies of that work have not previously been put into circulation. The restricted act would apply to a situation where a person acquires a computer program which is not available to the public and then sells or sends copies of the program to the public. Usually, there would also be an infringement of copying by making copies of the program.

Making an adaptation of a literary, dramatic or musical work is a restricted act. In terms of a musical work, a new arrangement of a song is an adaptation of the original. Changing a cartoon strip into a story told by words only is also an adaptation, as in a translation of a literary or dramatic work. For computer program, by section 21(4) of the U.K. Act 1988 a
translation has been given a special meaning and includes:

a version of the program in which it is converted into or out of a computer language or code, otherwise than incidentally in the course of running the program.

If a high level, source code computer program is compiled (converted) into an object code program, this will be an adaptation of the source code program and therefore, a restricted act. At first sight, it would appear that the object code program, because it a ‘computer program’, should be protected as a literary work in its own right. However, the elements of skill, labour and effort will be missing from the object code version which will have been created simply by using an appropriate compiler program. These elements will, of course, be present as regards the source code program. Therefore, it is desirable that object code program are protected as adaptations of literary works.

It could be argued that the meaning of ‘translation’ is too wide as it seems to catch a version of a source code program written in different high level language from that used for the original program. If a computer program is written using BASIC and someone then re-writes the program in COBOL, the latter will be an adaptation of the BASIC program because it has been converted into a different computer language. But, to produce a program in a different high level language is not merely a question of translating the program instructions from one language to another as with the spoken languages: the programmer would have to reduce the original program to its underlying concepts and ideas and from those concepts and
ideas (not from the computer programs itself) develop a new version of the program in another high level language.

The difference between the two programs could be as wide as those between *Romeo and Juliet* and *West Side Story*, and as a basic principle, Copyright should not protect ideas as such, only the expression or recording of those ideas. However, it seems that the new version of a program in a different highlevel language will be an adaptation, regardless of the quite considerable amount of skill and effort required to 'translate' the program.

Restricted acts apply to a work as a whole or to any substantial part of it. What is substantial is a matter of fact and the courts will look to quality as well as quantity.

(L) 'LOOK & FEEL' AND THE LIMITS OF COPYRIGHT PROTECTION:

The copyright laws in the countries under discussion, more particularly in the United Kingdom and the United States, clearly take copying beyond a literal, word-to-word reproduction of a copyright work. Copying can be done 'either directly or indirectly'. An illustration of the meaning of this expression is that if, for example, A writes a novel and B (with A's permission) turns it into a play and C without authorisation copies B's play, then C has infringed A's copyright in the original novel (as well as any separate copyright that might exist in the play). This could doubtless be applied by analogy to computer software in the appropriate circumstances.

As we have seen above that straight copying of a computer program is obviously an act restricted by the copyright. The act of copying may,
however, be much more subtle. Take the situation where an employee is employed as a computer programmer to write a computer program to perform a specific function. That employee may leave and join a competition of his former employer or go into business in his own account. He may then produce his own program which performs identical function as the software which he wrote for his previous employer, but he might have started the coding from search and done it completely differently, perhaps written it in a completely different computer language. What he might have copied, if 'copy' is the correct term to use here, is the underlying design, he saves himself the labour of going back to the very beginning and working out the sequence and flow of a program, work which was all done before the initial act of coding commenced when working for his employer. This is often referred to as copying the look and feel of computer software.

How is copyright law to regard this practice? It is plainly not copying as that word is normally understood, yet it is certainly a practice which enables an individual to take advantage of the investment put in by another party. Copyright as has been noted above does not give a monopoly in ideas; what it does is to prevent a person from copying or otherwise capitalizing on tangible expression of ideas made by other. Copyright protects expression not idea. Therefore, in principle, it is quite acceptable to write a novel about a secret agent in the style of Ian Fleming as long as it doesn't contain copies of parts of James Bond novels.

In the United States, attempts are being made to widen the scope of copyright so that it can protect the ideas behind the particular work. But in the case of computer programs it is difficult to distinguish between idea
and expression. However, the structure, sequence and organisation of the program alleged to be the copy provide useful guidelines. This problem was recognised in an American case *Whelan Associates Inc V. Jaslow Dental Laboratory*, probably the first case anywhere in the world where this issue was litigated, where the court said:  

> the coding process is a comparatively small part of programming. By far the larger portion of the expense and difficulty in creating computer programs is attributable to the development of the structure and logic of the program, to debugging, documentation and maintenance, rather than to the coding.

The court in that case seemed to accept that as little as 20 percent of the cost of program development is directly attributable to the operation of coding itself and that the remaining 80 percent of effort is directed to ancillary matters.

(i) **Different Procedural Approaches Under United States and English Law**

This whole area is a matter that has been litigated on many occasions in the United States but seems hardly to have been raised in English case-law to date. This can be explained by the difference in the conditions for granting remedies between the U.S. courts and the English courts.

In cases of copyright infringement in U.K., the plaintiff will nearly always want, wherever possible, to apply for an interlocutory or preliminary injunction. Under, the U.S. law, one of conditions for obtaining a preliminary injunction (the equivalent of an English interlocutory injunc-
tion) is that the plaintiff must show 'a substantial likelihood of success on the merits' or as it has been put in another case 'a reasonable probability of success on the merit'.

This contrasts with the situation in English law where the grounds for obtaining an interlocutory injunction were set out in *American Cyanamid V. Ethicon Ltd* where Lord Diplock seems to suggest three ways of expressing the same test. First, the court must be satisfied that the claim is not frivolous or vexatious; secondly, the court must be satisfied that there is a serious question to be tried; and thirdly, the Court must ask itself whether the plaintiff has any real prospect of succeeding at main trial. A moment's reflection will indicate that these are all rather different standards and in fact in the subsequent case law on this subject, the courts seem to have required the plaintiff to show what is described as an 'arguable case'. In any event, the standard of proof required of a plaintiff on an application for an interlocutory injunction by the English courts seems to be somewhat lower than that required by the U.S. Courts and for this reason, the English courts have had little opportunity to examine in great detail a case involving allegations of infringement by *look and feel*. It may therefore be instructive to look at the American case law at some length so as to see the general approach adopted by the courts in the United States.

(ii) **U.S. Law: Whelan Associates V. Jaslow Dental Laboratory**

It is necessary to start by looking at *Whelan case* as the basic facts in that case are illustrative of a not uncommon situation. In this case, Jaslow Dental Laboratory was in the business of manufacturing dental prosthetics and devices. Jaslow retained the services of one Elaine Whelan,
then employed by Strohl Systems Groups Inc to write a computer program for their business. This program was written in EDL (Event Driven Language) and was designed to run on an IBM series I machine. Elaine Whelan left her employer and set up her own business to market the program which she has written and her previous employer assigned to her all rights (including copyright) in that computer program. Jaslow agreed to market this computer program and signed an agreement to that effect. Rand Jaslow, one of the owners of Jaslow Dental Laboratory, then wrote a program in BASIC to run on personal computers. This program had a similar function to that produced by Whelan. Jaslow set up a company to market their new product and terminated their existing marketing agreement with whelan.

The court found as a fact that the program written by Jaslow was not a direct translation of the original program (which it could not be owing to the differences between the two computer languages) but was substantially similar to it because structure and overall organisation were substantially similar. The court also found that Jaslow had been able to produce a program with such substantial similarities because it had access to the original program. On these facts, the court, both at first instance and an appeal, found that the copyright owned by Whelan in the program that she had written had been infringed because Jaslow, whilst not making a literal copy of Whelan’s software, had copied its structure, sequence and organisation.

The court seems to have taken a policy decision. We have already seen how the court took account of the proportion of work spent in coding
compared to the amount of work that is spent in pre-coding research and organisation. The court clearly felt that this was effort that deserved to be protected by copyright law. As the court said:

we must remember that the purpose of the copyright law is to create the most efficient and productive balance between protection (incentive) and dissemination of information, to promote learning, culture and development.

The difficulty that the court faced was in distinguishing the idea from the expression of that idea. We have already seen that copyright does not exist to protect ideas, but only those ideas as they are expressed in a form acceptable to copyright law. In this case, the court recognised that the expression of the idea resided in the literal coding developed in Whelan, and the idea was the function of the program as expressed by that coding. In the literal coding, the expression was protected, how far could protection be afforded to the way in which that expression had been organised or, to put it another way, to what extent could copyright protect not just the literal coding, but the overall structure, sequence and organisation of that literal coding?

The U.S. court came up with the solution which it expressed as follows:

... the line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question. In other words, the purpose or would be the work's idea, and everything that is not necessary to that purpose or function would be
part of the expression of the idea ... where there are various means of achieving the desired purpose, then the particular means chosen necessary to the purpose, hence there is expression, not idea.

In other words, where there are several ways of achieving one utilitarian object by means of a computer program, then to apply the same means that object would be to risk copyright infringement. If, on the other hand, there is only one utilitarian solution to a stated problem, then copyright can not be obtained in that single solution, as this would be to grant a monopoly to one person.

(iii) **U.S. Law: After Whelan - Limits to the Doctrine**: 

Courts in the United States have to wrestle with the same problem in subsequent cases. One such case was *Plains Cotton Co-operative Association of Lubbock Texas V. Goodpasture Computer Service Inc.* In this case the plaintiff (Plains Cotton) developed a computer program which it proceeded to market. Certain employees who had been involved in developing that computer program left and formed their own company. One way in which they wished to develop their business was by producing a new version of their former employer’s program, but which would work on personal computers. They ultimately came up with a design whilst in the employment of the defendants in the case. The court found that the PC-based product was very similar to the original main frame product on the functional specification, programming and documentation levels. The court found that several pages of the manuals for the PC based product seemed to be direct copies from the pages of the design manual created
while the former employees had been working for their own company. The
defence was run on the basis that idea and expression were one and that
the form of expression chosen was the only one available to express the
idea. It will be recalled from what was said about Whelan case above that
the court found that only where there were several ways of expressing the
same idea could infringement of copyright be found, provided the defendent
had copied the same manner of expression. If there was only one method
of expressing the idea, then the court would not find that the defendent had
infringed copyright by using that same manner of expression.

The court in the Plains Cotton Co-operative Case thus, held that
idea was merged with expression when it said that the record supports the
inference that market factors play a significant role in determining the
sequence and organisation of cotton marketing software, and we decline
to hold that those patterns can’t constitute ‘ideas’ in a computer context.

(iv) **English Copyright Law & "Look Feel Cases"** :

The position under American law has been dealt with at some length
since there is no relevant reported English and Indian case law which gives
a similar degree of assistance in this difficult area. Yet we can examine the
considerations which an English court would take into account.

First, it is necessary to look at the English case of *Ms. Associates
Limited V. Power*, which was a case where ‘look and feel’ principles were
raised in an application for an interlocutory injunction. As was shown
above, it is not necessary for an English court to review at great length the
issues relating to merits in such situations and accordingly, on the facts of
the case, Faulkner, J., was prepared to find that the plaintiff had made out
an arguable case of copyright infringement.

(a) **Ms. Associates V. Power:**

*Ms. Associates* case was another case where action was taken against a previous employee. In this case, one Mr. Power had been employed by Ms. Associates Limited and in the course of his employment had written the code for the library section of a program called 'C-Gen'. This program translated computer software written in BASIC into C language. Mr. Power left and set up on his own account and became an authorised distributor of C-Gen. Mr. Power then formed a company and this was in turn nominated an authorised distribution for C-Gen. During this time, Mr. Power wrote his own translator program and called it 'B-Tran'. A great deal of expert evidence was submitted to the court for consideration and the plaintiff relied on the 'many objective similarities in structure and in detail' between the library section of B-Tran and that of C-Gen. As is usual in copyright cases, the plaintiff laid great stress on the opportunity for the defendants to gain access to the plaintiff's work and, therefore, the opportunity to copy it. Evidence was put in as to simultaneous claim between the lines of code involved. The defendants put in evidence that out of a total of 15,000 lines of code, the line similarities between the two programs were only some 43 in total. The plaintiff's response to this evidence was to rely on evidence of similarities of structure. The court does not appear to have considered the American cases and the conclusion reached by Faulkner J. on the question of an arguable case was quite simply stated:

*Giving the matter the best consideration I can, on*
the materials now before me, it seems to me that the plaintiffs have shown that they have an arguable case in that they have a real prospect of succeeding in obtaining a permanent injunction at the trial.

The court was proceeding on the basis that copyright infringement could be made out but without a full consideration of all the issues. The decision is of doubtful authority.\(^97\)

(b) **English Law : A more Recent Decision :**

More recent is the decision in *Computer Aided Systems (U.K.) Ltd. v. Bolwell*\(^98\). This again was a case concerning an action brought against ex-employees who were alleged to have written a program which, whilst not being a translation of their previous employer’s computer program, was alleged to copy the overall design, structure and organisation of their previous employer’s program. Again, evidence was led of the access that the defendant had to the plaintiff’s copyright material and the court was asked to infer from the short time available to the defendants that it was impossible that they could have originated their own computer program without recourse to copying their previous employer’s work. Again, in this case, a direct translation was impossible as the defendants had written their program in a fourth generation language called *Progress* whereas the program which they had allegedly copied from had been written in *COBOL*.\(^99\)

This again was an application for an interlocutory injunction and the court seems to have been prepared to accept that the overall structure of a computer program was a matter in which copyright could subsist, following American authority of *Whelan*. However, in this particular case, the court
was not prepared to find that there was an arguable case on the evidence.

(c) **English Law: General Principles**

What then would be the principles that a court should apply in England? It has always been the case that to make out a case of infringement of copyright it is not necessary to rely on a literal copyright word for word or letter for letter. This is obvious, otherwise a defendant could avoid infringement by merely minor changes. How far a court will go in giving protection against non-literal copying is, however, a fine question depending on the facts of each case.

The breadth of copyright protection for computer programs, thus, is potentially very generous, extending to program structure, screen displays and preparatory materials. But it is shocking that in U.K., this has been significantly compromised by the Copyright (Computer Programs) Regulation of 1992 which came into force on 1 January 1993. The Regulations were made in order to ensure that the United Kingdom complied with the European Community Directive on the legal protection of computer programs.

(M) **INDIAN COPYRIGHT (AMENDMENT) ACT 1994 & COMPUTER SOFTWARE**

Though 1994 Indian Amendment has already been discussed in the chapter, few specific things even at the cost of repetition need further elaboration. The Copyright Act of 1957 was amended in 1983 and then again 1994 to give effective protection to computer programs.

After the 1983 Amendment, Section 2(0) in its definition of "literary work" included:
"tables and compilations and computer programmes, that is to say, programmes recorded on any disc, tape, re perforated media or other information storage device, which, if fed into or located in a computer or computer based equipment is capable of reproducing any information."

After the 1994 Amendment, above section now reads as follows:

"literary work" includes computer programmes, tables and compilations including computer data basis."

The 1994 Amendment now specifically gives definition of "computer" and "computer programme" by inserting new clauses in Section 2(ff).

"Computer" includes any electronic or similar device having information possessing capabilities.

"Computer programme" means a set of instruction expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result."

It is indeed strange to note that though the amendment was introduced in 1992 and was referred to Parliamentary Joint Select Committee, yet it uses the word "'computer programme'" though the appropriate expression is "'computer program'". The latter spelling of "'program'" is the correct usage in relation to computers, both as noun and as verb. Similarly there could be a legal loophole with regard to the interpretation of term "'information'". It is, therefore, proposed that the section be amended and should read:

"Computer" includes any electronic or similar device having information and/or data processing capabilities.
The 1994 Amendment confers following exclusive copyright rights in respect of computer programs -

(i) to reproduce the work in any material forms including the storing of it in any medium by electronics means;
(ii) to issue copies of the work to the public not being copies already in circulation.
(iii) to perform the work in public, or communicate it to the public;
(iv) to make any cinematograph film, or sound recording in respect of the work;
(v) to work any translation of the work;
(vi) to make any adaptation of the work;
(vii) to do, in relation to a translation or an adaptation of the work, any of the acts specified in relation to the work in sub-clauses (i) to (v).

The above rights are available to computer programs in company with literary, dramatic or musical works. But there are some rights which have been specifically guaranteed such as to sell or give on hire, or offer for sale or hire, any copy of the computer programme, regardless of whether such copy has been sold or given on hire on earlier occasions.

Since computer programs are “used” by customers who pay a licence fee to the owner of the copyright in the program to permit them to “use” the program, it should have been explicitly declared that the right to use is one of the rights vested in the copyright owner. Accordingly the clause should have read:

to sell or give on hire, or offer for sale or hire, or use any copy of the computer program, regardless of
whether such copy has been sold or given on hire or

*put to use* on earlier occasions.

As to the acts which do not constitute an infringement of copyright, the 1994 Amendment inserted following clauses in Section 52 in relation to computer programs:

(1) the making of copies or adaptation of a computer programme by the lawful possessor of a copy of such computer programme, from such copy-

(i) in order to utilise the computer programme for the purpose for which it was supplied, or

(ii) to make back-up copies purely as a temporary protection against loss, destruction or damage in order only to utilise the computer programme for the purpose for which it was supplied."

This also needs a minor amendment to use expression "lawful uses" instead of "lawful possessor".

Then the Amendment has inserted Section 63B which provides:

Any person who knowingly makes use on a computer of an infringing copy of a computer programme shall be punishable with imprisonment for a term which shall not be less than seven days but which may extend to three years and with fine which shall not be less than fifty thousand rupees but which may extend to two lakh rupees.

Provided that where the computer programme has not been used for gain or in the course of trade or business, the court may, for adequate and special reasons to be mentioned in the judgement, not impose any sentence of imprisonment and may impose a fine which may extend to fifty thousand rupees."
It seems that the minimum sentence of seven days is too liberal. The original proposal of one month's minimum sentence in the 1992 Bill should, therefore, be brought back.

Thus it has been noticed in this chapter that copyright protection to computer software is the need of this last decade of 20th century. As 21st century is going to a century of computers, complicated legal issues are bound to arise and, therefore, more indepth studies in this vital area are urgently required. It is also to be noted that in all the three countries which form subject matter of present study i.e. U.K., U.S.A. and India, the legislative activity on copyrightability of software has been quite recent one and these countries in quest of keeping pace with fast changing computer technology are trying to bring in quick amendments in this area. It is quite satisfying to note that India has not lagged behind in this vital area, so crucial for our development and both 1983 and 1994 Copyright Amendments did try to provide best possible software protection.


4. The House Report on the 1976 Act states: 'The term "literary work" does not connote any criterion of literary merit or qualitative value: it includes catalogs, directories, and similar factual reference, or instructional works and compilations of data' House Report No 94-1476; Also see Koontz V. Jaffarian, 617 F Supp 1108 (ED va 1985), affd, 787 F 2d 906 (4th Cir 1986).


7. U.S. Copyright Act 1976, Section 101.


9. Indian Copyright Act 1957, Section 2 (o).


11. Ibid. at p. 2


14. Section 1 (1) Provided, "The Copyright Act 1956 shall apply in relation to a literary work and shall so apply whether or not copyright would subsist in that program apart from this Act."

15. Supra note 13.


17. Gottschalk V. Benson, 409 US 63. 34 L Ed 2d 275, 93 SCt 253, 175 USPQ 673.

18. Section 101 defines "literary works" as including works expressed in words, numbers, or other verbal or numerical symbols or indicia,
regardless of the nature of the material objects, such as "tapes, discs, or cards" in which they are embodied. Then section 102 (a) lays down that such works are copyrightable if they are fixed in any tangible medium or expression, now known or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of machine or device.

19. Apple Computer, Inc. V. Franklin Computer Cor., Supra note 8; Williams Electronics, Inc V. Artic International, Inc. (CA3NT) 685 F 2d 870, 215 USPQ 405, 66 ALR Fed 476 (the court declining to consider the scope of the 1976 Act, prior to the 1980 amendments, on the question whether computer programs were previously covered.

20. Supra note 9.

21. Indian Copyright (Amendment) Act 1994, Section 2 (0).

22. Ibid. Section 2(ffb).

23. Ibid, Section 2 (ffc).


26. Ibid, Section 101 A television news feature became fixed when it was recorded on videotape even though it was erased after seven days since seven days is a period of more than "transitory duration" Pache & Souther Co V. Duncan (CA 11 Ga) 744 F 2d 1490.

27. White-Smith Music Co. V. Appalo Co. 209 USI, 52 I.Ed 655. holding that perforated piano rolls were not copies of musical composition and could not be usually perceived from piano role.

28. The technology used in videogames has been cited as an example of a later developed medium of expression. Midway Mfg. Co. V. Artic International, Inc (ND Ill) 547 F Supp. 999.

29. (1916) 2 Ch 601, 608.

30. (1964) 1 WLR 273, 289.

31. Lin - Brook Builders Hardware V. Gertler (CA 9 Cal) 352 F 2d 298.

32. Dorsey V. Old Surety Life Inc. Co. (CA 10 Okla) 98 F2d 872.

34. The test of originality is not whether the work is entirely new, but whether it is the result of independent effort or of copying. Sheldon v. Metro - Goldwyn Pictures Corp. (CA 2 Nt) 81 F 2d 49.

35. Original Akppalachiah Artworks, Inc. v. Toy Loft, Inc. (CA 11 Ga) 684 F 2d 821, the Copyright law, unlike the patent law, recognizes the individual artistic achievement of a similar end product, provided there has been no copying of another's end product, so that the fact of identity of scenes and content do not preclude a publication from being copyrightable. Axelbank v. Rony (CA 9 Cal) 277 F 2d 314.

36. Gerlach - Barklow Co. v. Moris & Bendien Inc. (CA 2 NY) 23 F 2d 159; Dolls that are similar to predecessors in line of development but differing in many details including facial expression and anatomical correctness are sufficiently original to support valid copyright. Original Akppalachian Art Works, Inc. v. Tay Loft, Inc. (CA 11 Ga) 684 F 2d 821; Stuffed animal toys differing from prior art animal toys in appearance, expression, and personality, are sufficiently original for valid copyrights. Dolleroft Industries, Ltd. v. Wellmade Toy Mfg. Co. (CA 2 NY) 479.


38. Indian Copyright Act 1957, Section 13.

39. Supra note 37.


41. 65 ALR 33 (HCA 1986).

42. See, Apple Computer Inc. v. Franklin Computer Corp., Supra note 8.
43. See, NEC Corporation V. Intel Corporation, 645 F Supp. 590.
44. Object code is a binary code consisting of a series of zeros and ones. The central processing unit of a computer recognizes each statement in object code and in response performs one simple operation. Consequently, it takes hundreds of object code statements to execute even a very simple program.
48. Ibid.
49. U.S. Copyright Act 1976, Section 101.
51. Apple Computer, Inc. V. Franklin Computer Corp., Supra note 8; William Electronics, Inc. V. Artistic International, Inc. (CA 3 NT) 685 F 2 d 870.
52. Apple Computer, Inc. V. Franklin Computer Corp. Ibid.
53. GGA Corp. V. Chance (FND Cal) 217 USPQ 718.
55. Indian Copyright (Amendment) Act 1994, Section 2 (1).
56. Stern Electronics V. Kansman, BNA Patent, Trademark & Copyright Journal 565 (Feb 4, 1982); In Midway Mfg. Co V. Artic International, Inc; CCH Corp L. Rafr. 25, 337 (ND.III. 1981), the court noted, but did not resolve, the question of what the copyright covers in the case where registration was made using deposits of videotapes of an electronic game.
57. Ibid.
58. A "videogame" has been described as a computer program to create on a television screen cartoons in which some of the action is controlled by the player, the game being built into a cabinet
containing a cathode ray tube, a number of electronic circuit boards, a loudspeaker, and hand controls for the player, where the electronic circuitry includes memory storage devices called PROMS ("Programmable read only memory") which stores the instructions and data from a computer program in such a way that when electric current passes through circuitry, the interaction of the program stored in the PROM with the other components of the game produces the sights and sounds of the audiovisual display which the player sees and hears. Stern electronics, Inc. v. Kaufman, Ibid.


61. Stern Electronics, Inc. v. Kanfman, Supra note 56.

62. (1915) 2 Ch 376.

63. (1984) 10 FSR 64.

64. GA Gramp & Sons Ltd. v. Frank Smythson Ltd. (1944) AC 379.

65. ROBERTSON, RONALD, Supra note 24, at p. 45.

66. COMMISSION ON NEW TECHNOLOGICAL USES (CONTU) created a legislation of congress in 1974.

67. This provision was Section 117 of the 1976 Copyright Law as originally enacted. It was deleted by legislation in 1980, Public law 96-517, and replaced in that legislation by a new sectin 117.


69. Indian Copyright (Amendment) Act 1994, Section 2 (0).

70. U.K. Copyright, Designs & Patents Act 1988, Sections 9 (1), 11 (1); Indian Copyright Act, Section 2 (d) 17; U.S. Copyright Act 1976, Section 101.

71. ROBERTSON. RONALD, Supra note 24, at p. 47.

72. U.K. kAct 1988, Section 11 (2); Indian Copyright Act 1957, Section 17 (c); U.S. Copyright Act 1976, Section 101.

73. U.K. Copyright, Designs & Patents Act 1988, Section 178; Indian Copyright Act 1957, Section 17 (c).

74. Supra note 13, at p. 29.

75. (1914) 1 KB 622.
76. Supra note 24, at p. 48.
77. (1973) RP C 1; (1972) Ch 242.
79. Indian Copyright Act 1957, Section 2 (2); In United States, a “joint work” is a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole, U.S. Copyright Act 1976, Section 101.
80. U.K. Copyright, Designs & Patents Act 1988, Section 12 (1); Indian Copyright Act 1957, Section 22.
81. Ibid.
82. U.K. Copyright, Designs & Patents Act 1988, Section 12 (4); Indian Copyright Act 1957, Section 22, (Explanation).
83. The Indian definition of ‘adaptation’ a given in Section 2 (a) of Copyright Act 1957 as amended in 1994 is on similar lines.
84. BAINBRIAGE, I. DAVID, Supra note 13, at p. 21.
86. Hawkes & Sons (London) Ltd. V. Paramount Film Service Ltd. (1934), Ch 593,.
87. (1987) F.S.R 1
89. (1986) 797 F 2d 1222, at p. 1231.
90. Plains Cotton Co - operative Association of Lubbock Texas V. Goodpasture Computer Service Inc. 1807 F 2d 1256.
91. Apple Computer Inc. V. Franklin Computer Corp. Supra note 8.
92. (1975) AC 396.
93. Supra note 89, at p. 1235.
94. Ibid, at p. 1236.
95. Supra note 90.
97. ROBERTSON, RONALD, Supra note 24, at p. 70.
98. Ibid.
99. Ibid.
100. Ibid.