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# Jordanian legislations and recent trends in the legal protection of computer programs: A comparative study

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**Abstract**
Computer technology plays an extremely important role in modern society and it seems that this role will be still more important in the future. The study aims to protect the computer programs, also known as software, is essential in order to encourage the creation of programs and safeguard the considerable investment represented by such programs, which breathe life into the mere hardware, the "clever morons". This study used the comparative method for follow-up of the new legislations mainly Indian, English, French and Jordan legislations, and the decisions of courts and jurisprudence, and it is hope that the analytical study of this subject will be reflected in turn relevant legislations and the most important legal issues, created by the use of computer. As for the position of the Jordanian legislature, it has been empty for a long period of the law of copyright protection, so that the great voices started calling for the enactment of a law to protect copyright, that Law No. (22) 1992, which can put the protection of literary works. This research deals with the most important legal issues, created by the use of computer: identification of computer programs and its legal nature, if are they works subject to protection under the Copyright law, or are they inventions that can be protected under industrial property, such as those for Patents.

**Keywords:** computer technology, Jordanian legislature, Jordanian law of protect copyright 1992, industrial property

## Introduction

A computer by itself is in away quite unless its electronic circuits are made for, and cannot operate without, instructions. These instructions (programs) may be embedded into the hardware, for example in ROMs (Ready only Memory, Circuits from which digital information can be retrieved), but frequently they are created, reproduced and distributed in media which are separate from the computer hardware.

Earlier, when computers had been huge installations and when programs were normally delivered by the same firm as the one which delivered and serviced the computers, the practical questions concerning the use of the programs were dealt with in contracts between the computer suppliers and the users. With the advent of micro-computers and, in particular, personal computers this situation has changed because the programs suddenly became a commodity, sold in the ordinary consumer market, it became obvious that the protection of computer programs was of crucial importance.

Even in cases where local translations or adaptations are not necessary, an efficient protection improves the access to the most advanced and the best-suited software because producers and distributors are only reluctantly releasing their valuable products in countries where rampant piracy can expect. This is an obvious obstacle to the development of such countries.

## 1. Definition of software

Computer program means, as defined in Section 2 of Indian Copyright Act 1957 as amended by the Amendment Act 2012 hereinafter ICA) [2]: as a set of instructions capable 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". The definition adopted for "program description" may usefully be noted. This means "a complete procedure presentation in verbal, schematic or other form, in sufficient detail to determine a set of instructions constituting a corresponding computer program".

It is clear then that the term "computer software" refers not only to the computer program in which computer scientist has to go through several stages in preparing it, but also to its supporting material. The former are part of the machine and direct its operations, whereas the latter are written in high-level language and can be used by all customers regardless of the make of their machines. The definition of computer software seems very broad; software will take to mean only computer programs, so the two terms are synonymous. As for "program descriptions" and "supporting material", they are not covered here as they are protected by copyright law. Needless to say, such "descriptions" and "material" must satisfy the stipulated requirement of originality.

However, ICA does not throw any light on the subject. There are various judicial decisions explaining the scope of the term "literary works". The word "literary work" are not confined to works of literature in the commonly understood sense but include all works expressed in writing whether they have any literary merit or not. The definition of the term" Literary work" under S.(1/2(b)) of ICA includes computer programs, tables and compilations including computer data basis". The same approach had been adopted in America, as it is also understood in Article (3/8) paragraph (b) of 1992 (Jordanian Copyright and neighboring rights law, hereinafter JCL). Thus, computer includes any electronic or similar device having information processing capabilities. In relation to any literary, dramatic, musical or artistic works which is computer-generated, the words

("computer - generated" means that the work is generated by computer in circumstances such that there is no human author of the work.

JCL (1992), as well as the Copyright, Designs and Patents Act 1988 in U.K. (hereinafter CDPA) contain no definition of computer programs as Indian Act defined computer programs in Section (2) (ffc) aforesaid, but it seems that it will include any program which has the effect of controlling a computer to operate in a particular way. One the other hand, the term "literary work" by Section 3(1) of the CDPA means any work, other than a dramatic or musical work, which is written, spoken or sung, and includes a table or compilation and computer program. This Section applies copyright to computers, and includes a table or compilation, a computer program, the preparatory design for a computer program and database. The EC Council Directive 91/250/EEC on the legal protection of computer programs contained an inclusionary definition of the term" computer program". There is no doubt that copyright covers such things. Thus, copyright subsists in original computer programs as literary works. In addition, we shall see later the meaning of copyright in case of computer program as a literary work.

**2. Development of computer systems of international level**

With regard to copyright protection, Experts agreed that it would seem appropriate for computer software as a whole (and not merely computer programs), albeit the experts at that time disagree, whether certain kinds of programs (particularly programs in object code form, for example) could be considered literary, artistic or scientific works or not. Furthermore, it has stressed that they should not understood as necessarily requiring adoption in a separate law on the protection of computer software.

The majority of participants were of the view that computer programs were works and should be protected by copyright provide that they were original productions, and that computer programs could be assimilated to literary works. This WIPO/UNESCO meeting marked the decisive breakthrough in the choice of copyright as the appropriate form of protection of computer programs. This was witnessed by the development which followed immediately thereafter: in June/July, 1985, four countries, France, The Federal Republic of Germany, Japan and the United Kingdom all passed legislation clarifying that computer programs were considered works, subject to copyright protection.

It is commonly accepted that copyright is a more useful implement in this field, there has been growing discussion about a special system to meet the needs of the computer industry. In Jordan, JCL was clear enough to extend protection to computer program. This has done by redefining the 'Literary Work' under section 4(8). Now the term 'literary work' includes tables, compilations and computer programs, that is to say, program 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. As, in Jordan, the international trend is strongly towards the use of copyright law as the favored mode of protection, and adapting its traditional form as necessary to cover programs.

**3. Present discussions concerning copyright protection of computer program**

In consequence of the de facto choice of copyright as the appropriate form of protection of computer programs, it has become necessary, on an international basis, to analyze the consequences and to establish appropriate rules in order to ensure the necessary degree of uniformity between national laws. The main forum for such discussions has become the work, initiated by WIPO, on the establishment of a possible Protocol to the Berne Convention. To this end, a Committee of Experts has been established which has held three meetings in Geneva.

At these meetings, a great number of delegations and observers from non- governmental organizations expressed the view that computer programs were already protected under the Berne Convention as literary works, and referred to various national laws and to the 1991 Directive of the European Communities on the Legal Protection of Computer programs which all reflected that understanding.

**Copyright protection of computer program**

the author of a computer program May be in order to maintain the confidentiality of his programs introduce a condition within the traditional contract which he enters into with his customers- purchaser or hirer - that bind the third party to maintain confidentiality and not to allow the latter to disclose, either directly or indirectly the content of the program. However, theoretical there is no point in this condition, because it is difficult to prove the illegal act done by a third party if he breaches of this obligation, also he does not be bound to the author of the program because he was not a party to the contract with him, thus leaving no room to doubt than to say that these contracts appear not to be effective for the protection of computer programs. Therefore, we are to study the two main systems of protection available for computer programs, namely the patents and copyright

**1. Patent Protection**

Jordanian legislator did not provide a definition of innovation in the Patent of Invention Law. But the Egyptian Intellectual Property Law, as defined as "all new or try creative to contribute to innovative unique in the field of science or research lead to the design or adaptation, development or discovery", and thus innovation has of several forms, such as that the invention takes a form of new industry method, in this form the innovation in ways or means to produce something new industrial that already exists and is known before, and not to produce something new is not known from the past, as in the previous form. In this case the invention in order to get of the patent, it must meet the substantive requirements of the invention, particularly through the achievement of this invention to tangible progress in the industrial art beyond what is usual in normal industrial methods, such as inventing a new way to deal with computer virus.

Protection of ideas falls not within the copyright laws, but within the patent laws. Computer programs, discussed under copyrights, are disputed as a possible subject for patent, because there may be a problem with requirement for novelty and an inventive step. Also programs themselves are not a kind of manufacture, although, some programs have exceptionally been patented because they are part of a piece of machinery or an industrial.

In France, therefore, Article (7) in its (2) and (3) paras, of the legislation which was issued on 2 January 1968 stipulated that it is not considered an invention; the software industry or a series of instructions on operations of a calculator. There are several reasons for the exclusion of software from protection of patents, but the most two important reasons; due to the difficulty of (novelty) in computer programs to ensure these programs are even assess the maturity of the patent or not; besides, these programs are absolutely free from industrial nature, and thus they are no longer an industrial innovation. Therefore, if it could be shown that two precisely similar works in fact produced wholly independently of one author, the author of the work that was published first would have no right to restrain the publication by the author of that the author's independent and original work. A patent is an absolute monopoly during its term, prohibiting the putting into use by others, than the patentee, of a new manufacture invented by the patentee.

Generally, the patent protection is not attractive even in relation to those few programs which satisfy the requirements of novelty and inventiveness. It is because the obtaining of patent protection can be a very slow process, so that most programs could become obsolete before receiving protection. There is always possibility of succeeding in the challenge to a patent. Further disadvantage in the patent protection is that patent litigation is expensive and the patent specifications are published.

To conclude from what is mentioned above, that in the event enables us to exploit the program in an industrial field as if it enters a new method to exploitation, and at the same time possible to verify novelty of this program, there will be no reason to exclude this program from the protection accorded to the patent invention, and this was confirmed by the French legislator of the year 1978 by virtue of Article (3(10) - L.116). In other words, what is not patentable is the computer program itself but the overall invention can be.

**2. The Subject of Copyright Protection of Software**

Copyright may subsist, in every original literary, dramatic or musical work or adaptation thereof in every original work and in computer programs which is original. No one is entitled to the copyright in any work, whether published or unpublished, except under and in accordance with the provisions of the Act or any other statutory enactment for the time being in force. Copyright means in case of computer program to have rights of author mentioned under Articles (8) and (9) of JCL.

Copyright law protects all intellectual works, regardless of their kind, form of expression, merit or purpose, provided that they are original. Thus, it must be stressed that copyright does not protect ideas unless their forms are expressed. The program must therefore be in writing, but this is defined to include writing in code, not necessary by hand, and regardless of the method by which, or medium in or on which, it is recorded.

There will still be the general copyright considerations: has there be sufficient labor, skill and judgment to satisfy the requirement of originality, and in the case of very simple programs - perhaps to control a watch or telephone - it may not be possible to surmount this hurdle. But the low threshold set by this requirement means that it will pose only minimal difficulty.

Generally, it can be said that copyright protection of computer programs may extend beyond the programs "literal code to its structure, sequence, and organization" to extend to system software, applications software, and video games. French judiciary intended that originality means the intellectual effort of the author, and that the hallmarks of the author in the personal style of expressionism exceed to include the findings of the author (programmer) and not proceeded by somebody else. The French Supreme Court (Cour de Cassation) has also extended copyright protection to flowchart of computer programs and to source listings and their translation or fixation on any medium. This view is adopted in U.K in the sense of that literary work is now explicitly includes a computer program.

**Infringement of Copyright in Computer Program**

First of beginning, it must determine the author of the work prepared computer-assisted, then identify controls to protect his rights under the Copyright Law

**1. Author identification**

The word "author" or authorship is not, defined completely in the (ICA) nor in (JCL). According to article (4) of JCL author is "A person who publishes the work attributed to himself whether by indicating his name on the work or by any other way, shall be considered the author unless there is proof to the contrary. This rule shall apply to pseudonyms provided that there is no doubt as to true identity of the author".

From the viewpoint of the researcher, the legislator had an unfortunate inclusion in this definition of the author, because he is linking to consider a person as an author when he publishes his work attributed to him and without any regard for the conditions of protection of the innovation and expressive distinctive style to his character.

Ownership of copyright in a work is quite independent of the ownership of the physical material in which the work is fixed. A person who owns a book or its manuscript is not necessarily the owner of the copyright therein. As a rule the author of the work is the first owner of the copyright in the work. In relation to any literary, dramatic, musical or artistic work which is computer - generated in circumstances such that there is no human author of the work, the CDPA provides that the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken. For registered design purposes where a design is generated in circumstances where there is no human author, the author is the person by whom the arrangements necessary for the creation of the design were made. Briefly speaking, author is the person who causes the work to be created. This provision is new due to Jordanian Law (JCL) under Article (5) by virtue of Article (7). There are, however, exceptions to this, for example, when the author is an employee and the work is made in the course of employment or the work is a cinematograph film or sound recording.

We can say that Jordan law - Article (6) of JCL - belongs to the first trend, so it is principle these rights remain vested in the employees. It is here, in the event, that lies the weak point in the logic adopted by those who subscribe to this view, for the employer, spending an enormous sum of money to create the software, may think it only fair that he alone should enjoy all the recognized rights of the actual authors. Computer-generated works need to be dealt with at

an early stage because the question of whether a work is computer generated concerns all of the rights protecting form and appearance joint authorship can be dealt within the end of the section. It is a relatively straightforward topic but it is important in relation to ownership of rights (particularly where the authors are a mixture of employees and independent contractors), to consider whether the rights can only be exercised by the authors where they all agree and to meeting the nationality requirement.

The national legislator may choose to extend the conventional nation of the collective work to include works created by a single person along with those created with the collaboration of several persons. This would enable the person who assumes responsibility for the work to enjoy economic and moral rights in the software. The legislator could also transfer only the economic rights to that person.

**2. The Rights of Authors of Software**

Copyright is purely a creation of the statute. The rights which an author of a copyright has by virtue of creating the work are defined in Article (8) of (JCL) as well as s. (14) of (ICA). These are exclusive rights, but subject to the other provisions of the Act. In the first place, the work should qualify under the provisions of Article (7 JCL) as well as (S. 13 ICA), in other words copyright should subsist in it, secondly although the rights are referred to as exclusive rights there are various exceptions to them which are listed in Articles (17- 20 of JCL), offset (S. 52 of ICA). There is considerable debate among legal experts as to whether it is possible to extend the rights generally considered to be held by authors so that they become applicable to software. The arguments invoked against this possibility are based on the fact that software is designed for computers and not for the public - the existence of a public being considered essential for the exercise of author's rights.

The doctrine of moral rights protects the non-pecuniary interests of an author in his or her work. The creators of software have certain moral rights, recognized by the general law of Laud in civilized countries, the moral rights have been given statutory recognition under Article (8) of the JCL, which offset to S.57 of the (ICA). The authors moral rights may be exercised even after the assignment, either wholly or partially of the copyright. The Berne Convention (Article 6) recognizes some of these rights and requires member states to provide the author with the right to claim authorship and to object to alterations. These rights remain with the author even after the transfer of copyrights and the protection lasts during the whole of the copyright term.

Comparison copyright laws had identified means by which the author can exploit his work financially, which means no limitation, but received, as an example, that because there is nothing to prevent the emergence of other means of exploitation of works financially in the future may be required for development in the areas of communication and means of dissemination of intellectual production. But, the extrapolation of copyright laws and international conventions on copyright can be drawn three pictures of a major financial exploitation of the work is:

**The reproduction of software (makes copies**)

Strong protection against reproduction is essential in order to discourage the widespread copying of programs, both by pirates who might sell the copied product for a profit and companies that might make numerous copies for their internal use. Copyright laws throughout the world provide authors with strong broad protection against reproduction. Section 17(2) of CDPA, has broadened the definition of copying to include storing the work in any medium by electronic means, it defines copying of a work as " reproducing" the work in any material form copying. Pursuant to section (16) (3) (a) it is an infringement to reproduce the whole or any substantial part of the work.

The author has to give his prior consent each time software is to be reproduced, irrespective of the number of copies made. Whether or not those copies are paid for or provided free of charge does not affect this principle, which applies both to full or identical copies and to near- identical copies. There is a special provision concerning second-hand copyright works sold in electronic form. The provision does not apply to works purchased before 1 August 1989/ 88 Act, Sch. 1, Para 14(6) in U.K. The provision is meant to entitle the purchase of the second-hand copy to copy adapt the copyright work if the first purchaser was entitled to do so. In other words, if a work in electronic form like a computer program was bought by one person and then sold to someone else, the second purchaser might be entitled to copy and adapt the program if the first purchaser was entitled to do so.

The problem with this special provision is that it does not apply to computer programs which are licensed for use, i.e., where nothing is actually sold to the user. This is what normally happens in many large computer installations. The consequence is that the computer is due to be sold it may not necessarily be permissible to transfer either the computer program or the license governing its use. Additionally, the qualifications to the right can negate its effect. It is clear from S.17 of C.D.P.A. 1988 that the transient reproduction of any work, for example, on a blackboard or a computer screen or in a computer's memory, will amount to copying.

The general issue of reproduction in computers already been considered. As to reproduction of a computer program itself, in the usual way, where it alleged that the plaintiff's computer program has been, reproduced, what has to be compared in the actual program in which copyright claimed to subsist and the work is alleged to reproduce it.

**Adaptation**

It is also important to protect authors against the unauthorized translation of their work without prior consent. It is obvious that any operation involving the translation of a computer program from one language to another is an adaptation. The expression "adaptation" is defined by reference to particular categories of work. In relation to computer program is specifically dealt with in section 21(4) of the CDPA 1988.

A translation of a literary work is itself a literary work and is entitled to copyright protection, if it is original and the author has expended sufficient labor and skill on it. If copyright subsist in the original work then reproduction or publication of the translation without the consent or license of the owner of the copyright in the original will constitute infringement. That is to say that there are two separate rights that may exist where there has been a translation, namely the right of the author of the original work to restrain reproduction, etc., of the original or any translated form and the right of the author of the translation to restrain reproduction of his translation.

Accordingly, anyone wishing to reproduce a particular translation should therefore obtain a license from the owner of the copyright in both the original and the translation. In the same way, if A's work is with permission translated by B, and C without permission retranslates from B's translation into the original language. C infringes A's and B's copyrights. The position will be the same even B's translation was unauthorized since, although an infringement, it will be entitled to copyright. Thus, the provision on terms which expressly, implied or by virtue of any rule of law allows the purchaser to copy the work or to adapt it or make copies of an adaptation of it, in connection with the purchaser's derogation from grant. The provision applies to all works in "electronic form" which means a form usable only by electronic means.

The user - purchaser or hirer - of the software may then make such lawful adaptation without the prior authorization of the author. It is to be stressed that only small alterations that do not impair the author's dignity or reputation are permitted. Examples might be the updating of software to bring it into line with legislative reforms concerning accounting, and the correction of material errors. Thus, Copyright law punishes piracy in the form of identical or near - identical reproduction, or indeed of adaptation, provided that the features in common are not accounted for by programming norms or by the similarity of the problems dealt with.

Finally, copyright law customarily preserves the author's right to authorize the distribution of a program. In the absence of such protection, unauthorized rental or leasing, for example, is likely to lead widespread. To prevent such conducts, copyright laws generally prescribe a specific legal framework for the assignment of author's rights and give them rights over the distribution process. To ensure fairness, this is typically coupled with a provision stipulating that an author's right to control the distribution of a particular copy of a program is exhausted after the first sale of that copy, so that the individual who purchased that copy can disturb it at a later date.

## Conclusion

It follows from the foregoing that computer programs are true literary works and deserve on that account to be protected by legislation relating to copyright law- an approach that has been adopted by the national legislators of several countries, for example JCL, CIA, and CDPA. The purpose of all these laws is to extend copyright protection to software.

a. Copyright law should protect the concrete expression in a form of a computer program.; and
b. Computer law should protect all computer programs that are original and not a copy.
c. The salient conclusions and suggestions may be summarized as follows:
   The input of a protected work into a computer system includes the reproduction of the work on a machine-readable material support,
d. Wishing that Jordanian legislature to develop a special provision in the law of intellectual property to protect computer programs in a collective works from shareholders who exploit the work independently from the rest shareholders.

1. The author of a computer program should be entitled to claim copyright protection. Therefore we suggest to transfer Article (4) of the JCL which determines who is the author, to be within Article (9) of the JCL which gives examples of who is to be an author;
2. Put the protection of computer software in an international level through the establishment of bodies with jurisdiction in the field of computers so that they have branches in every State in order to apply Rules of intellectual property protection for these works and make sure not to violate them; and
3. Work to establish a specialized body composed of persons with experts in the field of computer automated and include members from the competent judicial authorities, in order to take over the financial exploitation of the programs when its author dies, and to prevent abuse survivors and to protect the public interest and to provide programs to the public.

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