The suitability of the copyright system to computer programs in light of the United Arab Emirates law

Ramzi Madi[1], *Iman Al Shamsi*[2]

[1] Al Ain University,
63rd str., Mohammad Bin Zayed, Abu Dhabi, 112612, United Arab Emirates
[2] Dubai Police Academy,
2, Sheikh Zayed Road, Al Sufouh, Dubai, 1200085, United Arab Emirates

For citation: Madi, Ramzi, Iman Al Shamsi. 2024. "The suitability of the copyright system to computer programs in light of the United Arab Emirates law". *Vestnik of Saint Petersburg University. Law* 3: 882–895. https://doi.org/10.21638/spbu14.2024.321

This article investigates whether the new copyright and neighbouring rights law adopted by the United Arab Emirates (UAE) legislature is considered appropriate to protect computer programs, or if it is better to establish an independent legal system that includes the appropriate legal protection that is in line with rapid technological progress. For computer programs to enjoy protection, there are two conditions must be met: the work should be a mental production, and the work should be an innovation. Once these two objective conditions are met, computer programs can enjoy automatic protection under the copyright system. Moreover, the study will spot light on Federal Law concerning Copyright and Neighbouring Rights that granted the author of a program a set of moral rights, which do not differ from the rights granted to the authors of traditional works, and it has been agreed that there are four moral rights. We concluded that the computer programs are considered as per Federal Law concerning Copyright and Neighbouring Rights as literary work. They are therefore subject to the protection established under the copyright system. However, despite the importance of the copyright law, it is still unable to keep pace with the technological and economic developments and is not commensurate with the nature of computer programs whose development pace is increasing daily.

Keywords: copyright, computer programs, United Arab Emirates, copyright federal-decree Law, Berne Convention, TRIPS agreement, moral rights.

1. Introduction

The world is experiencing an information revolution that was detonated not only through the computer and its development as a device but also through the development that affected the software industry, whether this software was operational or applied. The multiplicity and diversity of these programs have changed many legal concepts, including the change in the concept and nature of the work. After the fundamental part of works was the distinctive physical or sensual character, there appeared works that were characterized by an immaterial nature, which were called digital works — the most important of which are computer programs — that are distinguished by their independence from other works in terms of composition, which led to the emergence of some problems related to the appropriate protection of these works and their special nature (Al-Hiti 2011).

Controversy still exists among jurists about the most appropriate system for protecting computer programs, although the Emirati legislature has explicitly included this topic under the Federal Decree-Law no. (38) of 2021 on Copyright and Neighbouring Rights (hereinafter "Copyright Federal-Decree Law")[1], and thus computer programs enjoy protection in this framework as moral works. However, jurisprudence did not agree on this, as opinions differed between subjecting them to the protection prescribed under the copyright or under patent protection.

The need to address the issue arises from the necessity to evaluate whether the copyright and neighbouring rights law in the United Arab Emirates (UAE), adapted under a specific system, is suitable for protecting computer programs. Judicial application has faced challenges due to the unique nature of these programs. The question is whether it is more effective to establish an independent legal system that aligns with the swift technological advancements for proper legal protection.

2. Basic research

2.1. Conditions of computer programs protection

The UAE legislature has included computer programs and their applications within the scope of the Copyright Federal-Decree Law, but has not attributed a definition to it.

For intellectual works to enjoy protection, two conditions must be met: the work should be a mental production, and the work should be an innovation.

2.2. The work should be a mental production

Although the work must be a mental production for it to enjoy the protection established under the copyright system, the copyright law does not protect ideas but rather the form in which the idea was formulated. Therefore, a distinction must be made between form and content, since ideas remain outside the scope of monopolization of moral and artistic copyright (Jaddi 2012), contrary to expression, which means manifesting the work in a tangible way, or in other words, the form of the work which brings it into existence and through which it is transmitted to others, regardless of the method of expression, as it does not require a specific method in order to enjoy the protection and exclusive rights. Expression methods may differ depending on different types of works. Previously, methods of expressing ideas were traditional, manifested in written, visual or audible form, such as being translated in the form of letters written on paper stanchions or by recitals, such as recitation, chanting, singing, and playing instruments, or in the form of suggestive movements (Jaddi 2012).

The situation is different in regard to computer programs that can be expressed by two stages: the preparation stage through the paper substrate, which can be written on, and the final stage where the program takes its final form and is thus expressed in any physical structure in which electronic content can be stored, such as a CD or device memory. In this case, ideas take a new form different from the traditional methods of expression, that being through a technical language called the digital language, which

[1] "Federal Decree-Law no. (38) of 2021 on Copyright and Neighbouring Rights". *UAE Legislation*. Accessed August 7, 2024. https://uaelegislation.gov.ae/en/legislations/1534.

is defined as a double binary language using the two numbers (1 and 0) and whose function is to convert any electronic message to the two numbers (1 and 0), whether this message was in the form of text, audio, words, or fixed images or motion cartoons (Jaddi 2012).

It is noticeable that the Emirati legislature has explicitly excluded the ideas, procedures, working methods, mathematical concepts, principles, and facts that are deprived of protection established by the copyright system, provided that protection applies to the creative expression thereof (Art. 3 (1) of the Copyright Federal-Decree Law) and has also left the field open to all methods of idea-expression through the definition that is included of a work, where it did not require a specific form or type of expression, and this means that it could be in writing, image, numbers, or any form that may appear in the future. Thus, the work can be subject to the protection prescribed in the law so long as it is an innovative expression (Art. 1).

In addition to those mentioned above, expressing ideas requires unloading them on a tangible physical form, whereby Art. 2 (2) of the Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979)[2] stated that: "It shall, however, be a matter for legislation in the countries of the Union to prescribe that works in general or any specified categories of works shall not be protected unless they have been fixed in some material form". From this article, it may be understood that if the work fails to be manifested in a physical form, it shall lose protection, since the physical manifestation may achieve stability for the work and help in its emergence from the project position into a completed work. Moreover, some jurisprudence declares that work that has not been put in physical form is considered an idea that cannot be protected (Al-Jami'i 2004).

The Emirati legislature abandoned the standard of physical establishment as a condition for protection and settled for the innovativeness of the work regardless of the way it is expressed. Nevertheless, it is a futile exaggeration to consider physical establishment as a condition of protection in the field of digital works where physical framework disappeared, and memory storage took its place (Rashid 2018); in addition to the fact that Art. 2 of the Berne Convention and the correct understanding of the law explicitly indicate that putting work in a physical form is not considered to be a condition for classifying it as a protected work unless a legal text specifies that (Al-Jami'i 2004).

2.3. The condition of innovation

Innovation is the second condition stipulated by the Emirati legislature for the work to enjoy protection, acknowledged as well by most laws, and considered as a fundamental condition for protection. However, an aspect of jurisprudence believes that the concept of innovation is relative as it varies with time, for intellectual production that is considered innovative in one era may not be the same in another era. Moreover, innovation differs from one author to another because the nature of creativity varies and is affected by the work and its purpose. Innovation can be in composition and formation, such as when the author introduces a new topic in his work that has not previously been proposed; innovation can also be in expression, such as the translated work that enjoys protection because

[2] "Berne Convention for the Protection of Literary and Artistic Works". World Intellectual Property Organization. Accessed August 7, 2024. https://www.wipo.int/wipolex/en/treaties/textdetails/12214.

its owner has excelled in choosing words that fit his language, express his thought and it reflects his personality (Al-Hassan 2015).

In the realm of work protection, innovation and originality are crucial, distinct from the novelty required for protection in industrial property. Unlike traditional works, digital works, particularly computer programs, pose challenges in embodying them under intellectual property protection. This difficulty arises from the technical nature of the instructions in computer programs, which are not subjective. Additionally, these works cannot be classified under industrial property due to their perceived inability to undergo industrialization, as argued by a segment of legal opinions (Jaddi 2012).

Countries, especially those following the Anglo-Saxon legal system, broaden the concept of innovation by emphasizing that a work should not be a direct copy to qualify for protection. In contrast, the Latin legal system requires a degree of creativity reflecting the author's personality for a work to be deemed innovative (Jaddi 2012).

Thus, the difference between the two systems is reflected in the level of the creative character of the work, whereby the first system requires a normal level of creativity, while the second system requires a higher level of creative character for the work to be considered innovative (Zainuddin 2016).

As for the Emirati legislature, they have chosen to follow the Latin legal system and linked innovation to the creative character which is based on the two elements of originality and distinction by including a definition of innovation, whereby he stipulated in Art. 1 of the Copyright Federal-Decree Law that it is "The innovative character that bestows originality and distinction upon the work". In other words, the author should add his personal touch to the work; thus, if the author did not exert a clear mental effort and did not leave a prominent personal imprint that manifests its uniqueness and distinction from similar works when composing the work, then the innovation condition cannot be considered available in the work. Therefore, as a result, this work will not enjoy the protection stipulated in the law (Zainuddin 2016).

The legislature did not only refer to the condition of innovation in the definition they included, but also emphasized the necessity of the multi-availability of this condition, especially when he defined the work — any creative product (Art. 1 of the Copyright Federal-Decree Law) — and in Art. 3 on two occasions in the first paragraph ("...applies to the innovative expression of any thereof...") and in the last paragraph ("...if their combination, arrangement, or any effort deployed in their respect is innovative").

Consequently, according to the Copyright Federal-Decree Law, innovation is considered a major requirement for work protection, including computer programs. The issue of whether or not this requirement is available in the work is simultaneously an objective and realistic issue that all methods of proof can prove, and it is a matter subject to the discretion of the competent court with the assistance of experts if required (Zainuddin 2016).

However, the problematic aspect of this requirement may arise in collective and derivative works, and determining innovation may face difficulty, especially in determining the extent of the partner's contribution to the program setup, since the contribution must be innovative in order for the contributor to be considered the author of the program, in such a way that non-innovative and secondary contributions are excluded from the field of protection (Al-Jami'i 2004).

2.4. Formal conditions

Computer programs receive automatic copyright protection when meeting two conditions: being an innovative mental creation regardless of expression. This protection excludes formalities like deposit or registration. The Berne Convention's Art. 5 establishes the fundamental principle of safeguarding authors' moral and financial rights, requiring member states to grant authors all rights under their laws and those specified in the Berne Convention. Furthermore, the second paragraph of Art. 5 obligates the Member States not to subject the entitlement or exercise of these rights to any formality. Accordingly, the obligation to register or deposit the program should not be a prerequisite of acquiring moral and financial rights or a condition of their exercise (Al-Jami'i 2004), even though it is considered one of the preventive means of infringement since it contributes to avoiding risk and warding off the harm that may be reflected on programs of intellectual works, which means preventing the occurrence of infringement (Meshaal, Saleh 2017).

The UAE legislature does not mandate authors to register or deposit their rights for copyright protection, despite mentioning registration in Art. 4 of the Copyright Federal-Decree Law. The Ministry of Economy has a system for filing and registering rights, serving as a reference for work data. Notably, failure to register a work or its dispositions does not affect the protection or rights established by the decree-law (Art. 4 (2)).

The Copyright Federal-Decree Law in the UAE does not explicitly define deposit and registration. Legal deposit is distinct from the recording system for protected works. Under the recording system, authors submit applications for each work to the competent authority, providing essential details. Registration involves filling out a form with information like the author's name, work title, publication details, and language. This information is stored in a legally specified record office, and the author receives a registration certificate. The system also grants access to copyright-related records. In some countries, registration is a prerequisite for protection, allowing interested parties to object within a specified period (Sukkar 2020).

Deposit is defined as: "Handing over one or more copies of the work to the authorities specified by the law, or is obligating the right holder to hand over one or more copies of his work to one of the government authorities or one of the national libraries specified by law or regulation for this purpose" (Al-Fouraki 2018).

Thus, through this definition, it is possible to define what is meant by deposit and determine the features that distinguish it from other procedures that require some copyright laws. One of these features is that it is not considered a prerequisite for the protection of the work; that is, the failure to deposit the work does not result in a breach of the author's rights established by the law.

Legal deposit serves to collect, preserve, and maintain intellectual and scientific works, safeguarding them from damage. The deposited works become available to the public, promoting public interest through presentation or distribution. Legal deposit is crucial for compiling all state-published works in one place, aiding researchers in studying diverse intellectual trends. This process enriches public libraries and allows the state to monitor and censor publications within its territory, contributing to maintaining order and public morals (Al-Fouraki 2018).

Deposit is similar to registration in terms of handing over the work to the competent authority. Still the difference between the two systems lies in the fact that in countries that

adopt the deposit system, non-deposit does not entail depriving the author of his rights, and thus it is not considered a condition for filing a lawsuit; while in countries that apply the system of registration, registration is regarded as protection prerequisite, and therefore, the failure to register will undoubtedly lead to the loss of rights (Sukkar 2020).

Depositing copies of digital works is often perceived as less complicated than traditional works like sculptures or engravings, especially when dealing with unique pieces that are challenging to install or save in their original form on a specific medium. It is possible, however, to deposit one or more copies of these digital works that are created in a more-accessible way than other traditional works, whether on a digital medium such as a "CD" or the like, or by uploading them on plain paper, or through both means. Since the issue of depositing works in the digital field has been the subject of many studies that have been exerted in this field in an attempt to accommodate the deposit of these works in the field of computers and the Internet (Al-Husseini 2019), it should have been a priority for the Emirati legislature to regulate the issue of deposit by making this procedure binding and imposing a fine penalty on whoever fails to abide by it (without prejudice to the copyright's right to enjoy the protection established in the copyright system). Moreover, because innovations are strategic assets of their owner and it is necessary to protect them legitimately, especially that with the absence of proof there is no adequate protection that defends these special innovations, deposit is an essential and valuable step in protecting these assets, and it is necessary measure of proof (Nasser 2017/2018).

The Emirati legislature and the international conventions did not entitle depriving the author of his rights as a result of non-deposit, such as the Berne Convention for the Protection of Moral and Artistic Works[3], and the Agreement on Trade-Related Aspects of Intellectual Property Rights "TRIPS Agreement"[4].

Computer programs can receive protection if they meet the required conditions, but the duration of protection under copyright law has sparked controversy. The UAE legislature defines the term as the author's lifetime plus fifty years after death, which is considered lengthy. If the copyright owner is a corporate entity, the protection period is shorter. Regardless, the duration remains problematic, not aligning with the dynamic nature of computer programs. There is a need for the UAE legislature to amend the protection term to better suit the nature of these programs (Abu-Helo 2010).

2.5. The rights included in computer programs

In addition to jurisprudence and the judiciary, national laws and international agreements have agreed that the moral rights — or what is known as the moral rights — of the author are among the important aspects of moral property and are part of the rights that are related to personality. Their imprescriptibly and non-assignment characterize these rights, and their purpose is to prevent any infringement on the work by others. This type

[3] Art. 5 (2) of the Berne Convention for the Protection of Literary and Artistic Works, states: "The enjoyment or exercise of these rights shall not be subject to any formality…"

[4] Art. 9 of the TRIPS Agreement on Trade-Related Aspects of Intellectual Property Rights of Copyright states: "Members shall comply with Art. 1 through 21 of the Berne Convention (1971) and the Appendix thereto…" (*World Trade Organization.* Accessed August 7, 2024. https://www.wto.org/english/docs_e/legal_e/27-trips.pdf).

of right can be considered superior to the financial right because it is related to human thought and has different characteristics (Jaddi 2012).

Generally speaking, copyright laws have granted the author of a program a set of moral rights, which do not differ from the rights granted to the authors of traditional works, and it has been agreed that there are four moral rights. According to the Copyright Federal-Decree Law, the author has the right to attribute the program to himself and associate his name with every copy of it, whether by mentioning his name or title or by adding his academic qualifications or any kind of data that he wants to inform others about. He is also entitled to affix a nickname to the work, and this right remains fixed, even if his circumstances entail not disclosing his real name. This right is called the right of parenthood, which is an eternal right that can never be forfeited (Jaddi 2012), but the question that arises, in this case, is: is it permissible for the author of computer programs to be a corporate body, or is this a right limited to a natural person (Al-Hiti 2011)?

In fact, this issue may arise in one case, which is if the innovation criterion is used as a basis for the qualification of the "author" to be realized, considering that a natural person enjoys mental attributes that a corporate body does not possess, and some laws have defined the author as the natural person who creates the work[5]. In this case, the author of the work can only be a natural person, since according to this opinion, the innovation process cannot be realized except by a natural person whose brain is capable of innovation. However, if the publishing standard is relied upon (the word has not been changed because the intention is publishing rather than composition), then the person who places his name on the work upon publication is considered the program's author. Accordingly, the innovation process may be carried out based on the direction, sponsorship and supervision of another party. In this case, the author may be a natural person or a corporate body because the author's qualification will be based on inserting evidence of revealing his personality, which is not inconsistent with the author being a corporate body (Al-Hiti 2011).

Therefore, the laws have been divided into three parts: the first part adopted the publishing standard whereby the work is attributed to whoever published it, be it a natural person or a corporate body; the second part adopted the innovation criterion by restricting the qualification of the author to the person who created the work; and the third part combined the two criteria, which is what the Emirati legislature has adopted, whereby they defined the author as: "A person who creates a work, whose name is mentioned on a work or to whom a work is ascribed for being its owner, unless otherwise established" (Art. 1 of the Copyright Federal-Decree Law).

In addition to this definition, the Emirati legislature has set specific provisions for some works in Art. 27 and 29 of the Copyright Federal-Decree Law, including an explicit legal text that stipulates that the author can be a natural person or a corporate body, both of whom enjoy the same moral and financial rights[6].

However, this approach would violate the principles stipulated in the Civil Transactions Law[7] rules, which recognized the corporate body and granted it all the rights except

[5] Art. 1 of Bahraini Law no. 22 of 2006 on the Protection of Copyright and Neighbouring Rights (*Bahraini Law.* Accessed August 7, 2024. https://wipolex-res.wipo.int/edocs/lexdocs/laws/en/bh/bh030en.html) and Art. 1 of the Omani Royal Decree No. 65/2008 Promulgating the Law of Copyrights and Neighbouring Rights (*Omani Royal Decree*. Accessed August 7, 2024. https://www.wipo.int/wipolex/en/text/587692).

[6] Art. 27 of the Copyright Federal-Decree Law stipulates that: "A natural or legal Person…"

[7] "Civil Transactions Law". *UAE Legislation.* Accessed August 7, 2024. https://uaelegislation.gov.ae/en/legislations/1025.

for the rights associated with the qualification of a natural person according to Art. 93 of the law; therefore, if we want to execute the Civil Transactions Law, then the author of computer programs cannot be an artificial person, because artificial persons do not have the ability of innovation, which is generated from the human mind. This characteristic is relevant to humans and can only come from a natural person. Therefore, it can be said that the moral right is the essence of copyright and is based mainly on innovation (Saliha, Wardiyeh 2015/2016, 26–27). Thus, a corporate body enjoys only financial rights. On the other hand, moral rights are only established for a natural person (Al-Hiti 2011), and this is inconsistent with Art. 27 of the Copyright Federal-Decree Law.

On the other hand, the right to attribute a program to its author leads us to another issue which the jurists have disagreed on, which is that if a program is innovated by an author based on the direction of another person, whether this person was natural or artificial, then who should this work be attributed to (Shalakami 2014)?

Especially since the production of programs in most cases is done by companies that employ one or several persons in order to create or prepare a program. Thus, who does the moral and financial rights go to (Al-Morshedy 2024)?

Holders who adopt the first opinion believe that the law has permitted the granting of moral and financial rights to a non-author in many cases, for example, in the case of anonymous works, which are works that do not bear the name of an author, and where the publisher is authorized to exercise moral and financial rights, as well as collective works, which more than one author creates under the direction of a natural or artificial person who undertakes to publish the work under his name and administration (Shalakami 2014). Therefore, computer programs can be adapted as collective works because the usual situation is the participation of a group of people to prepare a program.

Consequently, whether one person is directed to create the program or a group of people, the program is considered a collective work in both cases. However, some jurists who did not accept the adaptation of computer programs in this way criticized this opinion because this provision would lead to considering them previously and absolutely as collective works, since these programs may contain elements of common works, and therefore their provisions should be applied (Shalakami 2014).

As for the Emirati legislature, they have defined the collective work as: "A work created by a group of authors under the direction and supervision of a person that undertakes the publication thereof it in its name, where the work of the authors is assembled and the separation or distinction of each author's work is impossible" (Art. 1 of the Copyright Federal-Decree Law).

Thus, according to this definition, the collective work of a computer program should be prepared by a group of software experts; in other words, computer programs cannot be adapted as collective works if one person has prepared them through the direction of others. In this case, the program's composer shall enjoy all moral rights, while the financial rights shall be reserved for the person who instructed the setup of the program unless otherwise agreed (Al-Morshedy 2024).

For this reason, we believe that the criticism which was directed to the first opinion is right because computer programs can be adjusted as shared works and collective works as well, but it has become necessary to expand the notion of collective work to include works created by one person by the direction of others as well (Shalakami 2014).

The second right granted to the author is the right to decide on the publishment of the program and choose the appropriate method of publishment and make it accessible to the public for the first time. This moment is considered the work's moment of birth, which entails all the moral and financial rights established according to copyright law. However, it should be noted that there is a difference between the right of deciding publishment and copyright, as the first falls within the scope of moral rights that the author solely enjoys, and by which he alone has the right to decide the appropriate time and means for publishing. In contrast, the second falls within the scope of financial rights, whereby it is permissible for others to use the program through a license and in accordance with certain conditions and controls (Saliha, Wardiyeh 2015/2016, 26–27).

So long as the author has the right to publish his work and make it available to the public, he also has the right to withdraw it from circulation if there are serious reasons, such as if the author believes that the work is not corresponding with his moral stature after reading the opinions of the critics, or that it is no longer compatible with his ideas or that it might discredit his reputation or social standing if it remains circulated. For this reason, the author is granted the right to withdraw his work from circulation (Shalakami 2014).

Article 5 (2) (d) of the Copyright Federal-Decree Law stipulates that the author has "Submission of an application to the Civil Court to recall the work from circulation, based on reasons justifying the same, except for smart applications, software and software applications". It is noticeable that the Emirati legislature has included any exception to the text of this article regarding computer programs and applications, considering that the author of the program can withdraw his program from circulation. This position has gained the approval of some jurists because it is not possible to adhere to the right of withdrawal in the field of computer programs marketing, given that if the program is withdrawn from circulation, the amount of compensation that the program author must pay to the customer will be huge due to the nature of the programs compared to traditional works. In addition to the fact that this right can be misused through the resort of some competitors to coerce the author to withdraw his program from other competitors or threaten them with this right to pressurize them and deny them the benefit from the technical superiority of the program they use (Shalakami 2014).

In addition to the rights mentioned above, the Emirati legislature referred to a fourth right that the author is entitled to, whereby he can object to any amendment to the work if this amendment distorts or contorts the work or harms the author's position. At first glance, when reading the text of this article, we tend to think that the legislature has authorized others to modify a work without a license, but that the author has the right to object to this amendment in some instances (Art. 5 (2) (C) of the Copyright Federal-Decree Law), that is, within the concept of violation, if these amendments do not prejudice the honour, position, or legitimate interests of the author, he cannot object to them (Emara, Amara 2014). Nevertheless, the legislature clarified the issue of the amendment in Art. (7) where they explicitly states that the amendment of the work must be done by virtue of a license from the author and his successors after him or the copyright owner; thus, the general rule is that amendment is not permissible without the permission of the original author, and the exception is that amendment is permissible by virtue of a license; yet, adherence to the right of the prohibition of modification of computer programs without permission from the original author will create many difficulties and practical problems,

given that practical reality and its requirements in the field of computer require providing a kind of flexibility in using the program (Al-Morshedy 2024), and may require adding some adjustments to computer programs by major companies that use these programs in managing their projects, and which believe that modifying the programs saves time and effort and is in their interest. Consequently, restricting amendment procedures to the permission of the program author makes us face practical difficulties such as being under the mercy of this author who may procrastinate in granting permission or license on the pretext that this amendment would distort or contort his work or harm his position, especially that the law did not specify the standard that could be adopted to determine whether this amendment has actually harmed the position of the author or not (Shalakami 2014).

In addition, companies may make amendments daily, which requires approval daily, and this procrastination will lead to a waste of time and effort, which are two of the most important factors on which large companies depend entirely on to achieve success (Shalakami 2014).

Accordingly, and for the rules on moral rights to be in line with these modern works such as computer programs and their applications, it would have been better for the Emirati legislature to adjust these traditional rules in a similar way to what some national laws have done, such as if the law states the permissibility of modifications to computer programs without depending on the original author's permission unless it is otherwise agreed by the original author and whoever wants to make the amendment. This is because there are many issues that must be taken into account when speaking of works that have a special nature, such as those that characterize computer programs. Thus, it is necessary to limit copyright in this regard, especially if the amendment entails making these programs more effective practically and proportionate to the purpose for which they were found, and giving the user of these programs a degree of freedom so that the program can keep pace with informational developments. This can be done by making the permissibility of modifying the programs the original rule as long as the amendments do not harm the author's reputation, as well as setting a standard for assessing the harm; and the exception is non-amendment if so be agreed (Shalakami 2014).

The limitation on modifying computer programs under copyright is not viewed as a violation of the author's moral right but rather as a flexibility for users. This flexibility allows for minor modifications like error corrections or updates without fundamental changes that could compromise the program's primary purpose. As a result, there is a need to exempt computer programs and their applications from the moral rights granted to authors of traditional works, similar to the legislative exception for the exclusive right of leasing[8].

Emirati law grants authors the right to prevent unauthorized modifications to their work and allows them to control various actions specified in Art. 7 of the Copyright Federal-Decree Law. The crucial right among these actions is the right of copying, serving as the legal foundation for many forms of work exploitation. The legislature explicitly states that downloading and electronic storage are considered part of the prohibited copying process.

Even if the principle were to prohibit copying in all its forms without the author's permission, there remain exceptions to this principle, considering that there are some

[8] Art. 8 of the Copyright Federal-Decree Law states that: "The rental right shall neither apply to software and smart applications unless the software itself is the original object of rental…"

forms of copying works that do not require authorization from the author. For example, the UAE legislature in Art. 22 permitted making a single copy of the computer program or its applications or databases after informing the legitimate holder alone. Accordingly, we can conclude that the legislature prohibited copying computer programs without a license from the owner if it were for purely personal, non-profit, or professional use, unlike traditional works[9]. In the same article, the legislature permitted the making of a single copy of the program in two cases: first: quoting it as per the purpose specified in the license, and in the second case, it is permissible to make a single copy for preservation or replacement in case the original copy is lost or invalid. However, this exception is limited to the legitimate owner of the program alone. The destruction of the backup or quoted copy is required when the possession deed of the original copy ceases to exist (Art. 22 of the Copyright Federal-Decree Law).

By referring to the definitions section, we find that the legislature has provided a definition for copying and indicated that the intended copying in the law is copying in whatsoever form, whether by downloading or by permanent or temporary storage[10].

The UAE legislature, as outlined in Art. 7 and 22, employs a restrictive system with explicitly listed exceptions to protect the author. According to these articles, the author has exclusive control over all copies, whether stored temporarily or permanently. As a result, any ordinary internet browsing without the author's permission is considered a violation. Notably, the legislature does not differentiate between temporary and permanent storage, treating both as infringements on copyright. Temporary storage is done in the random-access memory, which is a place where information or data is stored transiently and temporarily when moving from one browser to another. The device cannot perform its function of displaying the digital work contents unless the digital work is temporarily stored or copied in the random memory of the computer. Once the file or device is closed, it disappears from the memory (Al-Badrawani, Al-Sagheer 2008). It is noticeable that the UAE legislature did not benefit from the exception stipulated in Art. 9 of the Berne Convention, as this article granted authors of moral and artistic works an exclusive right to authorize making copies in any way or in any form, and simultaneously gave states the right to permit making copies of these works in some special cases provided it does not conflict with the normal exploitation of the work or cause undue harm to the legitimate interests of the author. Moreover, although the copyright agreement project which was presented to the diplomatic conference in 1996 contained a text that stipulates that: "The exclusive right granted to the author of artistic and literary works by virtue of Art. 9/1 of the Berne Convention to authorize copying his works includes direct or indirect copying his works either permanently or temporarily and in any form or medium". This text has not been approved by many countries and ended up being deleted from the agreement because the main objective of its inclusion was to tighten the authors' control over their works (Al-Badrawani, Al-Sagheer 2008).

[9] Art. 22 of the Copyright Federal-Decree Law states that: "Without prejudice… the author, after publishing his work, may not prevent third parties to: Make a single copy of the work for personal and non-commercial or professional use of the copier, excluding the following: C. Software, software applications and databases, except as indicated in Clause (2) below".

[10] Art. 1 of the Copyright Federal-Decree Law defines "reproduction" as: "To make one or more copies of a work, phonogram, broadcasting program or any performance in any form or manner, including download or permanent or temporary electronic storage, whatever the technique or tool used for the reproduction".

It is worth noting that considering temporary storage of a digital work as copying may lead to strengthening the exclusive right of computer program authors and tightening their control over these programs at the expense of the public interest, in a way that makes every user obliged to obtain a license every time they need to read or benefit from the work, as well as highlighting responsibility on the part of internet service providers and making them guardians over the interests of digital work authors, which places a heavy burden on them on the one hand, and affects the flow and spread of information on the other (Al-Badrawani, Al-Sagheer 2008). It would be preferable for the Copyright Federal-Decree Law to define copies as limited to permanent storage, excluding temporary storage. This adjustment is suggested, considering that the current protection exceeds international standards established by the WIPO Copyright Treaty in 1996[11].

The exclusive right of the program author in distribution pertains solely to the original public distribution, not extending to subsequent distribution by the legal rights holder of a received copy. However, the latter must adhere to any contractual restrictions set by the original recipient.

3. Conclusions

Attempts to legally protect computer programs through law amendments provide only short-term solutions to complex issues. The diverse nature of programs and rapid technological progress create uncertainty, requiring constant review of legal amendments for effectiveness and harmony with advancements. Accordingly, we have reached the following conclusions and suggestions.

Results:

— computer programs are considered as per the Copyright Federal-Decree Law as literary work. They are therefore subject to the protection established under the copyright system. However, despite the importance of the copyright law, it is still unable to keep pace with the technological and economic developments and is not commensurate with the nature of computer programs whose development pace is increasing daily;

— the UAE legislature did not separate traditional works from digital works, did not define computer programs, and did not refer to what is meant by the term "applications" thereof, which was stipulated in article of the Copyright Federal-Decree Law;

— the UAE legislature explicitly permitted the author of the program to be a natural person or a corporate body as both enjoy the same rights, which contradicts the principles stipulated in the Civil Transactions Law in Art. 93, whereby this article acknowledged the corporate body and granted it all the rights except for those associated with the character of a natural person, i. e., financial rights without moral rights;

— the UAE legislature defines collective works as those developed by a group of authors under the direction of a natural or artificial person. However, a challenge arises when applying this definition to computer programs developed by one person under the directive of others. In such cases, the author retains all moral rights, but financial rights belong to the person directing the program setup unless otherwise agreed upon;

[11] "WIPO Copyright Treaty". *World Intellectual Property Organization*. Accessed August 7, 2024. https://www.wipo.int/wipolex/en/treaties/textdetails/12740.

— according to the Copyright Federal-Decree Law, the program author does not have the right to withdraw his program from circulation if serious reasons occur that justify this. The UAE legislature has included such exception in law to prevent the misuse of this right by other competitors;

— the UAE legislature has authorized conducting modifications to the program by virtue of a license from the original program's author. However, it also authorized the original author to object to the amendment if it distorts or contorts the program or harms the standing of the original author;

— the UAE legislature has forbidden copying in all its forms without the author's permission and has included some exceptions for computer programs, allowing for a single copy;

— the UAE law considers both temporary and permanent storage as copyright infringement, despite the Berne Convention allowing states to permit copies in specific cases without conflicting with normal exploitation or causing unjustified harm to the author's interests.

Recommendations:

— the necessity of separating between traditional and digital works is because the distinction between the two types facilitates the process of classifying them, including a definition of computer and computer programs, and clarifying the intent of the term (applications) in a way that accommodates the technological developments that may occur in the future;

— amending Art. 27 of the Copyright Federal-Decree Law allows a corporate body to exercise moral and financial rights, considering that it conflicts with Art. 93 of the Civil Transactions Law, which does not acknowledge moral rights for a corporate body;

— expanding the concept of collective work to include programs that one person invented under the direction of others;

— amending the Copyright Federal-Decree Law to allow temporary copying, especially since the protection provided by the law in this context goes beyond the international standards established by the WIPO Copyright Treaty.

References

Abu-Helo, Helo. A. R. 2010. "The problem of legal protection for computer programs between patent laws and copyright laws. A comparative study". *Algerian Journal of Legal, Economic and Political Sciences* 47 (3): 207–246. (In Arabic)

Al-Badrawani, Hasan A. M., Husam E. A. Al-Sagheer. 2008. *Copyright in Egyptian law. An analytical study from a developmental perspective*. Egypt, Bibliotheca Alexandrina Publisher. (In Arabic)

Al-Fouraki, Mustafa. 2018. *Copyright protection mechanisms in Morocco*. Accessed August 7, 2024. https://mahkamaty.com/blog/2018/01/19/9990. (In Arabic)

Al-Hassan, Aza. A. M. 2015. *Legal Protection for Computer program, program Protection with Copyright Provisions*. Jordan, Dar Al Jinan for Publishing and Distribution. (In Arabic)

Al-Hiti, Mohammed H. M. 2011. "The scope of criminal protection for digital works: A comparative study in Arab laws for the copyright protection". *Sharia and Law Journal* 25 (48): 367–452. (In Arabic)

Al-Husseini, Ammar A. 2019. *Challenges of legal deposit in the Internet environment*. Accessed August 7, 2024. https://www.uomus.edu.iq/NewDep.aspx?depid=1&newid=2229. (In Arabic)

Al-Jami'i, Hasan. 2004. "Introduction to Intellectual Property Rights". *WIPO National Seminar on Intellectual Property for Journalists and the Media*, 1–44. (In Arabic)

Al-Morshedy, Amal. 2024. *Legal research and study on protecting computer programs with copyright legislation.* Accessed August 7, 2024. https://www.mohamah.net/law/%D8%A8%D8%AD%D8%AB-%D9%82%D8%A7%D9%86%D9%88%D9%86%D9%8A-%D8%B4%D8%A7%D9%85%D9%84-%D8%AD%D9%88%D9%84-%D8%AD%D9%85%D8%A7%D9%8A%D8%A9-%D8%A8%D8%B1%D8%A7%D9%85%D8%AC-%D8%A7%D9%84%D8%AD%D8%A7%D8%B3%D8%A8/. (In Arabic)

Emara Fatiha, Badra Amara. 2014. "Criminal protection of electronic information in the context of intellectual property law". *Al-Haqiqa Magazine* 31: 207–248. (In Arabic)

Jaddi, Najat. 2012. "Informatics and Copyright, Studies and Research". *Zayan Ashour University* 6: 186–200. (In Arabic)

Meshaal, Salam M., Mohammed S. Saleh. 2017. "Legal protection of digital intellectual property rights". *Academic Journal of Legal Research* 15 (1): 104–133. (In Arabic)

Nasser, Gobran K. 2017/2018. "Protection of intellectual property. Copyright in light of national legislation and international agreements". PhD thesis in libraries and documentary science. University of Oran — Ahmed Ben Bella. (In Arabic)

Rashid, Tariq J. A. 2018. *Civil responsibility for the electronic publisher: A comparative study*. Egypt, Arab Centre for Publishing and Creativity. (In Arabic)

Saliha, Zaedi, Zaedi Wardiyeh. 2015/2016. "The literary right of the author". Graduation Memorandum for master's degree in Law, Abdel Rahman Meera University. (In Arabic)

Shalakami, Shahata G. 2014. "The content of the author's literary rights in Bahraini Law: A comparative study, University of Bahrain". *International Journal of Intellectual Property* 2 (1): 102–123. (In Arabic)

Sukkar, Faraj I. 2020. "The extent of filing requirements for copyright protection". *The Islamic University Journal for Sharia and Legal Studies* 28 (2): 1–22. (In Arabic)

Zainuddin, Salah. 2016. *Intellectual Property Rights in the UAE Legislation and International Agreements.* United Arab Emirates, Al Falah Library for Publishing and Distribution. (In Arabic)

Received: November 6, 2022
Accepted: April 29, 2024

Authors' information:

Ramzi Madi — PhD in Law; https://orcid.org/0000-0002-8265-4926, ramzi.madi@aau.ac.ae
Iman Al Shamsi — PhD Candidate in Commercial Law; https://orcid.org/0000-0003-2153-2834, iman.ad@hotmail.com