

# **Copyright and Related Rights Law**

**Dr. Rohan Cherian Thomas**

**Faculty of Law**

**NALSAR University of Law, Hyderabad**

**WEEK - 01**

**LECTURE - 04**

## **Computer Software**

Welcome back to this course on copyright and related rights law. In the previous three sessions, we have discussed what subject matter listings are. We have also discussed what is the subject matter of literary work through definitions in various legislations of different countries. What we have also understood is whether qualitative assessment and quantitative assessment of an expression is a necessary requirement to consider whether such an expression would become a literary work or not. In the next two sessions, we are going to be focusing our attention on two peculiar types of literary works. These are peculiar types because of their nature, they do not seem to fit directly within the definition of what we understood as a literary work.

The first of such type of literary work that we will discuss is computer software and therefore in today's session, we will look at how is a computer software a literary work. Before we look at the subject matter of computer software itself, a good place to start is - how subject matters under copyright have increased manifold throughout the last century on account of the rapid increase of technology. Computer software after all is a result of technological development that has happened over time. The inclusion of computer software can be likened to the inclusion of copyrightability of works through its communication through radio.

As and when technology has improved, and the copyright owner's right could be exerted over that subject matter, copyright law has found a way to increase its subject matter thresholds. And at this threshold, we discuss computer software and take a look at this photograph. On your screen, you can see an image that we have discussed earlier as well. In this image, you can see an alphanumeric expression. It isn't just any alphanumeric expression.

It is an alphanumeric expression, which is a source code. What do we understand by a source code? A source code is an instruction which is provided by a user who is using a computer. This code will be in a computer language such as C++. Source code, as we had discussed earlier, does not have to satisfy any qualitative assessment. The mere fact that it is expressed through words and numbers and other such symbols, that is enough for source code to be considered as a literary work.

Now consider this image. In this image, you can see a laptop. We must consider the question, what is the role of a computer program in a computer? Surely a computer is a whole other machine. Let us consider what is the role of a computer program in a computer. What we understand is that a computer program serves as a spark.

For what? For the processing function that the computer does leading to some kind of a result or a consequence. Now imagine the whole number of times that you have accessed a computer. You accessed it in order to solve a particular issue, to aid towards the completion of a particular task. And in all such tasks, What supported you in your usage of the computer was the computer program. And therefore we can say that this source code which is eventually turned into a machine readable form called as the binary code or the object code.

Both these codes are enabling the computer to perform a particular task. Or in other words, there is a process that the computer undertakes or a function that a computer does and the trigger for that particular function is the computer program. Now consider this image. You can see a robot in this image. This isn't just any battery operated robot.

A battery operated robot would depend on simple electric circuitry in order to move its mechanical parts. This is a smart robot. And a smart robot's function is more than just any electronic circuitry. A smart robot will have inbuilt computer softwares which are enabling its hardware to function. And therefore we can say that the computer program is making the hardware perform a particular function.

But can copyright protect function? It cannot. In our previous discussion, we saw how An idea that is in the mind of a person cannot be granted copyright protection unless and until it is expressed. This idea can be expressed in n number of ways. We also understood a doctrine under copyright law called as a doctrine of merger - under which if an idea cannot be expressed in different ways, such as the rules of a game, then in such a scenario, the expression cannot be separated from the idea. And such expression cannot be considered copyrightable.

Similarly, a function is something which cannot be copyrighted. Because a function simply put is not an expression. The function, in fact, if expressed, can be expressed in a number of ways. For instance, the function of a webcam. Now there are a whole different varieties of web cameras available in the market.

We must choose a specific type of webcam. What are the functions that that webcam does and these functions can be expressed in many different ways. So the function itself is not something copyright can protect. But does this mean that functions should not be protected at all? On this point, we must consider what intellectual property is attempting to do in terms of providing exclusive rights. Intellectual property is looking to incentivize innovation.

More innovations that are made available to the society help society prosper better. In saying so, if a person in solving a problem has created a function which is new, which is useful, then shouldn't intellectual property incentivize such an innovation? It should. But this domain of incentivization is not the domain of copyright. This is the domain of another intellectual property called patents. Now that we understand that computer softwares or computer programs seem to be veering in some kind of a dual protection system protection seems to be getting covered under copyright and the function seems to be getting protected under patent is this dual protection system in fact something which is applicable or is there only one type of intellectual property protection that's possible? We will elaborate on this point in order to understand better how copyright software and the program of the source code and the object code, how that fits particularly under copyright and that can be distinguished from the functional element which comes under patents.

Let's take a look first at the TRIPS agreement. So the TRIPS agreement is the agreement on trade related aspects of intellectual property rights. A constituent agreement under the WTO. Now the TRIPS agreement provides certain mandatory minimum provisions which must be applied by member states of the WTO. This provision which we are considering is Article 10 Clause 1.

You can see what Article 10 Clause 1 says. It says, computer programs, whether in source or object code, shall be protected as literary works. So not only is the source code that we are seeing here a literary work, but also the machine readable form, which is the object code, That is also a literary work. This is what Article 10.1 tells us. Let's take a look at Section 3 Clause K of the Indian Patent Act. Section 3 of the Patent Act provides a list of inventions which will not be considered as inventions under the Patent Act. So it says that computer programs per se or algorithm is not an invention within the meaning of the patent act. But what is an invention? A definition of invention which is provided within this patent act is that invention means a new product or process involving an inventive step and capable of industrial application. As we can see the object of patent protection is a product or a process and this product or process has effectively been developed to counter an issue which has been faced by people.

For instance, imagine a time when footballers were facing problem running on the football field with plain soles. To introduce spikes on the sole of such shoes is an invention. But as we've understood, inventions or the function which that invention is

meeting, that function itself is outside the scope of copyright protection. So what section 3 states and in terms of our comparative understanding with copyright law is that the program itself is not something patents will cover. So the source code or the object code as provided by the TRIPS agreement that is completely within the copyright domain, that is not something the Patent Act will touch.

Now this provision is supplemented by Section 2(o) of the Copyright Act, which reads, literary work includes computer programs, tables and compilations, including computer databases. So when we look at section 3(k) and section 2(o) and compare them, we can then say that computer program within the sphere of copyright act forms the expression of the source code and the object code; and the function is something which is not covered by the copyright act. Let us now take a look at two judgments which help us understand What exactly does the patent act cover? In Ferid Alani versus Union of India, the following extracts which have been taken are relevant. I will make a reference to them and explain them as I go ahead.

The Delhi High Court stated, the bar on patenting is in respect of computer programs per se and not all inventions based on computer programs. In today's digital world, when most inventions are based on computer programs, it would be retrograde to argue that all such inventions would not be patentable. Innovation in the field of artificial intelligence, blockchain technologies and other digital products would be based on computer programs. However, the same would not become non-patentable inventions simply for that reason. What is the issue that the Delhi High Court is helping us understand? Now what we have seen is that any function that the computer performs is going to be connected to a computer program.

But the mere fact that this function is connected to a computer program should bring it outside the scope of the patent act - that is not possible. So what the Delhi High Court is saying is that there is a distinction between the computer program and the function that it does. So in focusing on the function, if it is seen that there is an invention there, then such an invention should not be taken out of the scope of the patent act. Further, the court explains, it is rare to see a product which is not based on a computer program, whether they are cars and other automobiles, microwave ovens, washing machines, refrigerators, they all have some sort of computer programs inbuilt in them. Thus, the effect that such programs produce, including in digital and electronic products, is crucial in determining the test of patentability.

What was the claimed invention in this particular case? It was a method and device for accessing information sources and services on the web. What is the purpose of this invention? It is to streamline navigation of the web. And how does it do it? By reducing

bandwidth usage. What the inventor claimed was that this particular computer program was in fact serving a technical effect. So it wasn't just a computer program.

There was a technical effect which it was bringing about. And this technical effect must be considered for patentability. But initially, when this matter or when this invention was brought before the regulator, registration was denied. And it was denied because there wasn't any tangible integration with hardware. Further, the court explained: that the inclusion of per se in section 3(k) was that genuine inventions which were developed based on computer programs must not be refused patents.

So what we understand very clearly now is that we must make a distinction between the computer program and the function. Where the function is something that can pass the considerations of patentability, then that is protected under patents. The software is something which does not come under patent protection. Let's take a look at another case. A more recent decision by the Delhi High Court in 2024 - Lava International v Telefonaktiebolaget LM Ericsson.

In this particular case, the court helps explain what exactly is a technical effect and how it is passed. The court explains, an invention that merely incorporates algorithms, sets of instructions, mathematical or business methods within a method or system, and satisfies all the criteria for patentability is not inherently non-patentable. If the algorithms are directed at enhancing the functionality of a system or a hardware component, the effect or the functionality derived by the system or the hardware component is a patentable subject matter. The algorithm itself is not a patentable subject matter. To illustrate, we may consider the example of a smart thermostat algorithm that dynamically adjusts the heating or cooling of a room in a building based on real-time weather data, occupancy patterns and energy prices.

Through this example, the Delhi High Court has been able to clearly explain the distinction between the computer program and the algorithm per se as against the function that it provides. And this function, for example, as the code explains, if we consider a thermostat and if the thermostat is using a particular computer program, to provide automatic temperature control based on varied subjective factors, then this function is in fact a technical effect. And this technical effect must be protected under patent law and the source code itself, the source code and the object code that is coming within the domain of copyrightability. Having understood that the expression of a computer software falls within copyright and its function falls within the domain of patents, we have effectively understood that a dual protection in a way to computer software is possible. But in splitting computer software into its component parts, which is the expression and its function, two different intellectual properties are protecting each.

Now coming to the point of whether copyright protection extends to protecting incomplete computer programs. Because we have been considering the Indian legislation, I am going to be looking at the provision within the Indian Act to help understand this particular issue better. A provision within the Copyright Act explains what computer program is and it states thus: computer program 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 particular task or achieve a particular result. Because the provision is linking the expression to a particular result being performed, or a specific consequence being achieved by the computer, what we are understanding is that the expression is complete. At least complete in terms of the instruction that it is providing to the computer.

As a corollary, We can then say that if the instruction is not complete and it is not capable of causing a computer to perform a particular task or achieve a particular result, then such an incomplete expression might be outside the scope of consideration as a literary work. Having understood that computer programs even though they are offering a functionality are protected within the domain of copyright - We have understood that even though computer software or computer program is serving a particular functionality, the expression of the software which we find through the source code of the object code is something that is protected within copyright law. In the next session, we will be discussing another peculiar type of subject matter within literary works, which is databases. Thank you for joining me. See you in the next session.