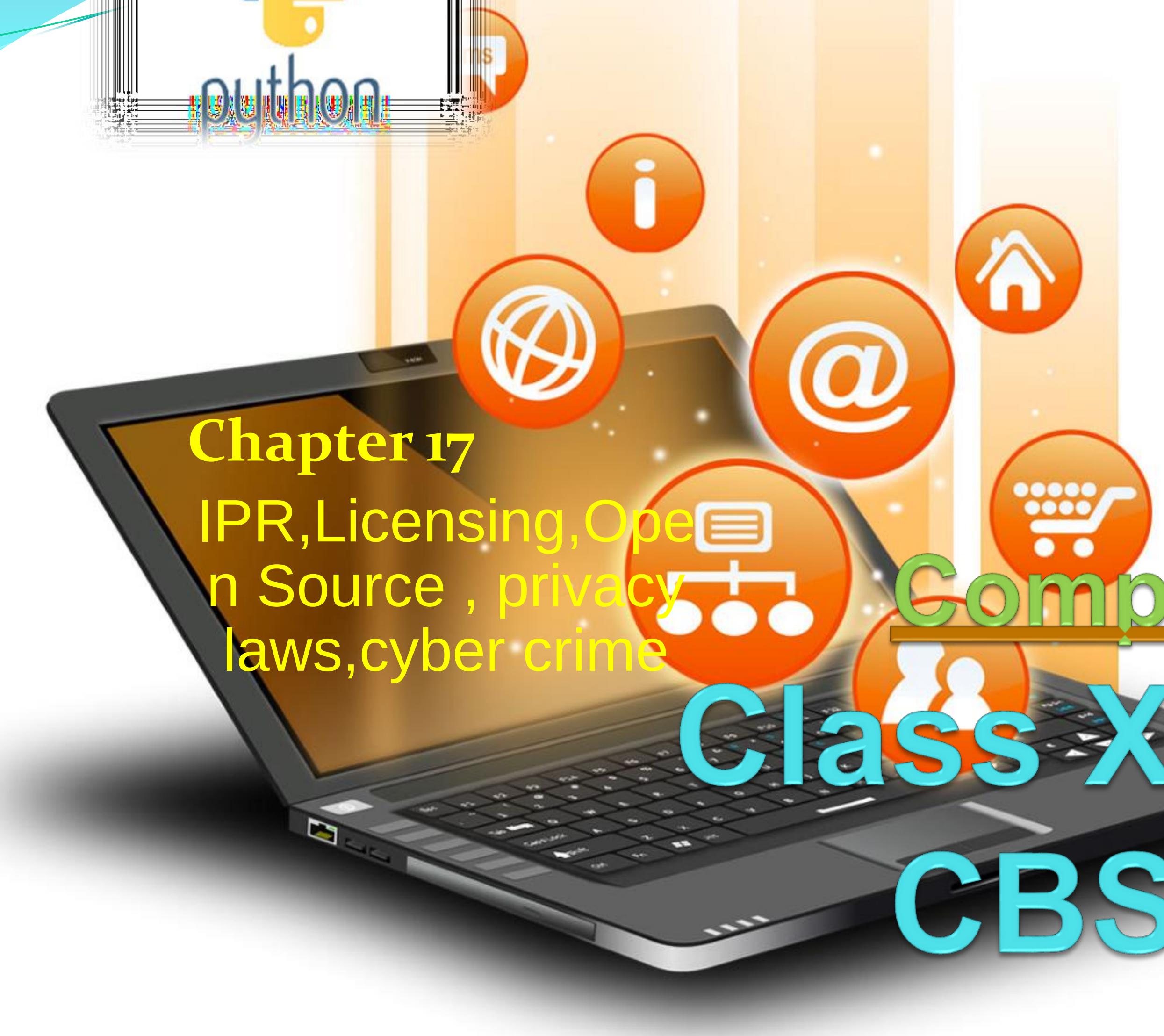


Chapter 17

IPR,Licensing,Open Source , privacy laws,cyber crime

New syllabus 2022-23

Computer Science

Class XI (As per CBSE Board)

Visit : python.mykvs.in for regular updates

Intellectual property rights

Intellectual Property (IP) – is a property created by a person or group of persons using their own intellect for ultimate use in commerce and which is already not available in the public domain.

Examples of IP Property which are, an invention relating to a product or any process, a new design, a literary or artistic work and a trademark (a word, a symbol and / or a logo, etc.),

Intellectual Property Right (IPR) is the statutory right granted by the Government, to the owner(s) of the intellectual property or applicant(s) of an intellectual property (IP) to exclude others from exploiting the IP commercially for a given period of time, in lieu of the discloser of his/her IP in an IPR application.

Intellectual property rights

Why should an IP be protected?

- IP is an assets and can be exploited by the owner for commercial gains any manner
- IP owner may intend to stop others from manufacturing and selling products and services which are dully protected by him
- IP owner can sell and/or license the IP for commercial gains
- IP can be used to establish the goodwill and brand value in the market.
- IP can be mention in resumes of it's creator and thus show competence of it's creator
- IPR certificate establishes legal and valid ownership about an intellectual property

Intellectual property rights

Kinds of IPRs

- Patent (to protect technologies - The Patent Act)
- Trade Mark (to protect words, signs, logos, labels –The Trade Mark Act)
- Design (to protect outer ornamental configuration – The Designs Act)
- Geographical Indications (GI) (to protect region specific product –The Geographical Indications of Goods Act)
- Copyright (to protect literary and artistic work –The Copyright Act)

Intellectual property rights

IPRs are protected in accordance with the provisions of legislations of a country specific. In India, IPRs can be protected and monopolized as per the act. Some of them are

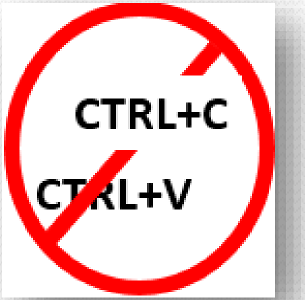
1- The Patent Act, 1970,
2- The Designs Act, 2000,
3- The Trade Mark Act, 1999,
4- The Geographical Indications of Goods Act, 1999,
5- The Copyright Act, 1957,
6- Protection of Integrated Circuits Layout and Designs Act, 2000,
7- Protection of Plant Varieties and Farmers Rights Act, 2001, and also Trade Secret

Plagiarism

Plagiarism is

"the act of presenting the words, ideas, images, sounds, or the creative expression of others as it is your creation or your own."

The word *plagiarism* is derived from the Latin word *plagiare*, which means to *kidnap* or *abduct*



Why is it important to understand Plagiarism?

- **Plagiarism is stealing of intellectual property**
- **Plagiarism is cheating**
- **Plagiarism is an *Academic offence***
- **Plagiarism is *Academic theft*!**

Plagiarism

Two Types of Plagiarism

- **Intentional Plagiarism**

  *Copying other's work

  * Borrowing/buying assignments

  * Cut , paste from electronic resources

  * Downloading essays/text from the Internet and presenting as our own work

- **Unintentional Plagiarism**

  * Not knowing how to acknowledge or incorporate sources of information through proper paraphrasing, summarizing and quotation

  *Careless copying or cutting and pasting from electronic databases

  *Quoting excessively

  * Failure to use our own "voice"

Plagiarism

How to avoid plagiarism

1: Use your own ideas

2: Cite the sources-When someone else's ideas are used, always acknowledge the sources and tell your reader WHERE THE IDEAS ARE FROM.

3: Rewrite other's ideas in your own words

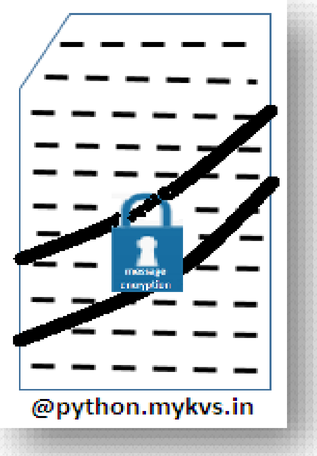
4: Take careful notes

5: Develop your writing skills

Digital rights management

DRM – A scheme that controls access to copyrighted material using technological means.

It means applying technology on copyrighted material in such a way that it can be used or it remain in read only mode but further production/copying is restricted.



HOW DIGITAL RIGHTS MANAGEMENT WORKS

Most general, digital rights management includes some codes that prohibit copying, or codes that limit the time or number of devices a certain product can be accessed.

Publishers/authors of content creators use an application that encrypts e-book, content, data, software, media or any other copyrighted material. Only those with the decryption keys can access the material.

Digital rights management

Different ways to protect your content, software, or product

- Restrict /prevent users from editing / saving/sharing /forwarding our content.
- Restriction from printing. E.g. some document or artwork may only be printed up to a limited number of times.
- Restriction of screenshots capture
- Set an expiry date on your document or media, after which the user will no longer be able to access it or opening of any document for fixed limited times.
- Lock through ip address,means media accessible in india can't be accessed in any other country.
- Watermark artworks and documents in order to establish ownership and identity.

CHALLENGES OF DIGITAL RIGHTS MANAGEMENT

Not everybody agrees with digital rights management. For instance, users who pay for music on specific app would love to be able to listen to the song on any device or use it in whatever way they wish.

Digital rights management

BENEFITS OF DIGITAL RIGHTS MANAGEMENT

- It educates users about copyright and intellectual property.
- It helps make way for better licensing agreements and technologies.
- It helps authors retain ownership of their works.
- It helps protect income streams.
- It help secure files and keep them private.

Licensing

A **software license** is a document that provides legally binding guidelines to the person who holds it for the use and distribution of software.

It typically provide end users with the right to make one or more copies of the software without violating copyrights. It also defines the responsibilities of the parties entering into the license agreement and may impose restrictions on how the software can be used. Software licensing terms and conditions usually include fair use of the software, the limitations of liability, warranties and disclaimers and protections.

Benefits of Using Licensed Software

- Using Unlicensed Software Against the Law
- The Right Software License Can Save our Money
- We can Receive Around-The-Clock License Support

Licensing

Creative Commons (CC) is an internationally active non-profit organization to provide free licenses for creators to use it when making their work available to the public in advance under certain conditions.

Every time a work is cre [illegible] al article is written or a photograph taken, that work is automatically protected by copyright. Copyright protection prevents others from using the work in certain ways, such as copying the work or putting the work online.

CC licenses allow the creator of the work to select how they want others to use the work. When a creator releases their work under a CC license, members of the public know what they can and can't do with the work. This means that they only need to seek the creator's permission when they want to use the work in a way not permitted by the license.

The great thing is that all CC licenses allow works to be used for educational purposes. As a result, teachers and students can freely copy, share and sometimes modify and remix a CC work without having seeking the permission of the creator.

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The Pros of using a Creative Commons License

- Our work will be freely available online and people can share and use as per permissions applied on creative work.
- Further improvement in creative work(open source code also) is possible ,if permission is given.
- Our original Copyright is protected and can be modified within the parameters of the Creative Commons licensing regime.

The Cons of using a Creative Commons License

- We cannot revoke a Creative Commons License once given. Only subsequent uses will not be permitted.
- if someone profits from our work (provided we have not given a Non-commercial license/ attribute license), we can't ask for compensation or a license fee
- The Copyright of derivative works can be ambiguous. If someone uses your work to develop a new work and their 'updated' work is substantially different, there is an argument that the initial Creative Commons License no longer applies. So think first before attaching a Creative Commons License to work.

Licensing

GPL - General Public License(GNU GPL), is the most commonly used free software license, written by Richard Stallman in 1989 of Free Software Foundation for GNU Project. This license allows software to be freely used(means freedom for use,not price wise free), modified, and redistributed by anyone. WordPress is also an example of software released under the GPL license, that's why it can be used, modified, and extended by anyone.

Core values of GPL software are

- Anyone can download and run the software
- Anyone can modify it
- Anyone can redistribute free copies of the software
- Anyone can distribute modified versions of the software.

One of the primary aspects of the GPL is copyleft. Copyleft is a play on the word copyright, but with similar concept. Means same protection is applied over the softwares developed over the GPL software. For this reason any work based on WordPress inherits the GPL license.

The GPL itself is under the copyright ownership of the Free Software Foundation (FSF), a tax-exempt charity organization founded by Stallman's GNU project in order to generate funding for free software development.

Licensing

Advantages of publishing software under GPL (General Public License):

- Regular feedback from users helps in the development of software in new areas.
- Open source software aids to the free development of several other open source software.
- It will get technical support from the developer's community.
- The cost of software maintenance will be reduced as the volunteers' increases.
- Bugs can be identified easily as the number of people working on it increases.
- It is first Copyleft license created for the open source community.
- Open source product itself will tempt the users to try and use it.

Disadvantage of using the GPL license.

- If GPL licensed product is used in any commercial product then the entire product has to be released as open source. Most of the companies set a ban to use GPL product.
- Lots of people aren't aware of the stringent terms of GPL
- Its extremely viral. If your project contains a component that contains a component then whole project is subject to the GPL too .

Licensing

The **Apache License** is a free and open source software (FOSS) licensing agreement from the Apache Software Foundation (ASF). Beginning in 1995, the Apache Group (later the Apache Software Foundation) Their initial license was essentially the same as the old BSD license. Apache did likewise and created the Apache License v1.1 - a slight variation on the modified BSD license. In 2004 Apache decided to depart from the BSD model a little more radically, and produced the Apache License v2.

Main Features Of The Apache License

- copy, modify and distribute the covered software in source and/or binary forms
- exercise patent rights that would normally only extend to the licensor provided that:
- all copies, modified or unmodified, are accompanied by a copy of the license
- all modifications are clearly marked as being the work of the modifier
- all notices of copyright, trademark and patent rights are reproduced accurately in distributed copies

Open Source

In general, **open source** means any program whose source code is made available publically for use or modification as users or other developers see fit. Open source software is usually made freely available.

Following criteria must be met for open source

- Source code must be included.
- Anyone must be allowed to modify the source code.
- Modified versions can be redistributed.
- The license must not require the exclusion of other

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Example of Open source software

As Operating system – linux,Ubuntu

As dbms – mysql,mongodb

As Programming language – java,php,python

As internet browser/webserver –chromium,firfox/ apache http server,apache tomcat

Open Data

Open data is data which can be accessed, used and shared by any one to bring about social, economic and environmental benefits. Open data becomes usable when made available in a common , machine-readable format.

Following criteria must be met for open data

- Must be licensed to permit people to use and share.
- It should not have limitation to use in any form
- It must be free to use but cost should be reasonable
- It can be reused and re distributed.

Open Government Data refers to the information collected, produced or paid for by the public bodies (PSI) and made freely available for re-use for any purpose.

The 5 basic principles of open data decided in G8 summit in 2013 are

1. Open data by default
2. Should be in quality and in quality as well
3. Usable by all
4. Release data for improved governance
5. Release data for innovation

Privacy Laws

Privacy is the aspect of information technology which deals with the ability of an organization or individual to determine what data in a computer system can be shared with third parties.

privacy law - Regulations that protects a person's/organization's data private and governs collection, storage, and release of his or her financial, medical, and other personal information to third party.

Classification of privacy laws

- General privacy laws that have an overall bearing on the personal information of individuals
- Specific privacy laws that are designed to regulate specific types of information. E.g Communication privacy laws, Financial privacy laws,Health privacy laws,Information privacy laws ,Online privacy laws ,Privacy in one's home.

Why Privacy Matters

1. To limit on Power- of company who hold data.
2. To respect for Individuals
3. To maintain Appropriate Social Boundaries
4. To maintain Freedom of Thought and Speech of person whom data belong
5. To maintain Freedom of Social and Political Activities of person whom data belong

Privacy Laws

Privacy threats

1. Web Tracking
2. Data collection
3. Lack of security
4. Connected everything
5. Public Wi-Fi
6. Government spying
7. Social networking

Privacy Laws

The (Indian) Information Technology Act, 2000 section 43A of the (Indian) Informdeals with the issues relating to payment of compensation (Civil) and punishment (Criminal) in case of wrongful disclosure and misuse of personal data and violation of contractual terms in respect of personal data.

1. Under Information Technology Act, 2000, a body corporate who is possessing, dealing or handling any sensitive personal data or informationThe Government has notified the Information Technology Rules, 2011. The Rules only deals with protection of "Sensitive personal data or information of a person", which includes such personal information which consists of information relating to:-

- Passwords
- Financial information such as bank account or credit card or debit card or other payment instrument details
- Physical, physiological and mental health condition;
- Sexual orientation
- Medical records and history
- Biometric information.

Under **section 72A** of the (Indian) Information Technology Act, 2000, disclosure of information, knowingly and intentionally, without the consent of the person concerned and in breach of the lawful contract is punishable with imprisonment for a term extending to three years and fine extending to Rs 5,00,000

Fraud

Computer fraud is using a computer and/or internet to take or alter electronic data, or to gain unlawful use of a computer/internet.

Illegal computer activities include phishing, social engineering, viruses, and DDoS attacks.

Cyber crime

Any crime that involves a computer and a network is called a “Computer Crime” or “Cyber Crime.

Or in other term ,it is a crime in which a computer is the object of the crime (hacking, phishing, spamming) or is used as a tool to commit an offense (child pornography, hate crimes).

STEPS TO PROTECT YOURSELF AGAINST CYBER CRIME

1. Make sure your security software is current – and update it regularly.
2. Lock or log off your computer when you step away.
3. Go offline when you don’t need an internet connection.
4. Consider sharing less online.
5. Think twice about using public Wi-Fi.
6. When in doubt, don’t click.

Cyber crime

Phishing is a cyber attack that uses disguised email as a weapon.The attackers masquerade as a trusted entity of some kind, The goal is to trick the email recipient into believing that the message is something they want or need — recipient fills/send sensitive information like account no, username ,password etc. ,then attacker use these.

How to prevent phishing

- Always check the spelling of the URLs before click
- Watch out for URL redirects, that sent to a different website with identical design
- If receive an email from that seems suspicious, contact that source with a new email, rather than just hitting reply
- Don't post personal data, like your birthday, vacation plans, or your address or phone number, publicly on social media

Cyber crime

Illegal downloading is obtaining files or computer resources that w do not have the right to use from the Internet. Copyright laws prohibit Internet users from obtaining copies of media that we do not legally purchase. These laws exist to prevent digital piracy, much of which is generally conducted through Internet file sharing.

How to prevent illegal downloading

movie piracy has actually decreased significantly through BitTorrent and other traceable methods, as the adoption curve of Netflix (and other) streaming options has increased. The answer there is simple - make it cheaper and easier to access media in a "legal" manner, and more people will utilize those paths than the "illegal" paths.

Cyber crime

Child pornography is considered to be any depiction of a minor or an individual who appears to be a minor who is engaged in sexual or sexually related conduct. This includes pictures, videos, and computer-generated content. Even altering an image or video so that it appears to be a minor can be considered child pornography.

Child pornography is a crime in India. IT Act, 2000 & Indian Penal Code, 1860 provides protection from child pornography.The newly passed Information Technology Bill is set to make it illegal to not only create and transmit child pornography in any electronic form, but even to browse it.

Cyber crime

With the growth in online services and internet use, there are many opportunities for criminals to commit **scams and fraud**. These are dishonest schemes that seek to take advantage of unsuspecting people to gain a benefit (such as money, or access to personal details). These are often contained in spam and phishing messages.

Common types of online scams include:

- Unexpected prize scams,
- Unexpected money scams,
- Dating or romance scams,
- Threats and extortion scams,
- Jobs and investment scams, and
- Identity theft.

Do not respond to online scams or fraud. If you receive an email or SMS which looks like a scam, the best thing to do is delete it.It is the best solution for online scam.

Cyber crime

Cyber forensics is a way or an electronic discovery technique which is used to determine and reveal technical criminal evidence. Various capabilities of cyber forensics are.

- **Computer forensics**
- **Computer exams.**
- **Data analysis.**
- **Database study.**
- **Malware analysis.**
- **Mobile devices.**
- **Network analysis.**
- **Photography.**
- **Video analysis.**

IT Act 2000

The Information Technology Act, 2000 provides legal recognition to the transaction done via an electronic exchange of data and other electronic means of communication or electronic commerce transactions.Some of sections under it act 2000 are given below.

SECTION	OFFENCE	PENALTY
67A	Publishing images containing sexual acts	Imprisonment up to seven years, or/and with fine up to Rs. 1,000,000
67B	Publishing child porn or predating children online	Imprisonment up to five years, or/and with fine up to Rs.1,000,000 on first conviction. Imprisonment up to seven years, or/and with fine up to Rs.1,000,000 on second conviction.
67C	Failure to maintain records	Imprisonment up to three years, or/and with fine.
68	Failure/refusal to comply with orders	Imprisonment up to three years, or/and with fine up to Rs.200,000
69	Failure/refusal to decrypt data	Imprisonment up to seven years and possible fine.
70	Securing access or attempting to secure access to a protected system	Imprisonment up to ten years, or/and with fine.
71	Misrepresentation	Imprisonment up to three years, or/and with fine up to Rs.100,000