Chapter 17
Societal Impacts-
Digital footprint,
Netiquettes,
Data protection

Computer Science

Class XI (As per CBSE Board)

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Digital Footprint –

A digital footprint is data that is left behind when users have been online. There are two types of digital footprints which are active and passive.

An active digital footprint is where the user has deliberately shared information about themselves either by using social media sites or by using websites.
A passive digital footprint is made when information is collected from the user without the person knowing this is happening.

Examples of active digital footprints

- Posting on Instagram,Facebook, Instagram, Twitter, and other social media platforms
- Filling out online forms, i.e. when signing up to receive emails or texts
- Agreeing to install cookies on our devices when prompted by the browser

Examples of passive digital footprints

- Websites that install cookies in our device without disclosing it to us
- Apps and websites that use geolocation to pinpoint our location
- Social media news channels and advertisers that use our likes, shares, and comments to profile us and to serve up advertisements based on our interests

How digital footprint is being used for marketing purposes

Digital footprints are also known as cyber shadow, electronic footprint, or digital shadow are generally collected with the help of tracking cookies .these cookies are created while using popular sites. Whatever we search is stored in these along with our dates, GPS relevant data. These are shared by actual site we are visiting to the popular sites.

Popular sites in tern analyze these data and revert back in the form of advertise later on.

For e.g. we search for a flight from x location to y location for a particular date.

Next day if we open search engine ,ads automatically popups even if we have booked out tickets.

Actual site visiting   Visitor leaves

Web visitor

Visitor is brought back

Popular sites

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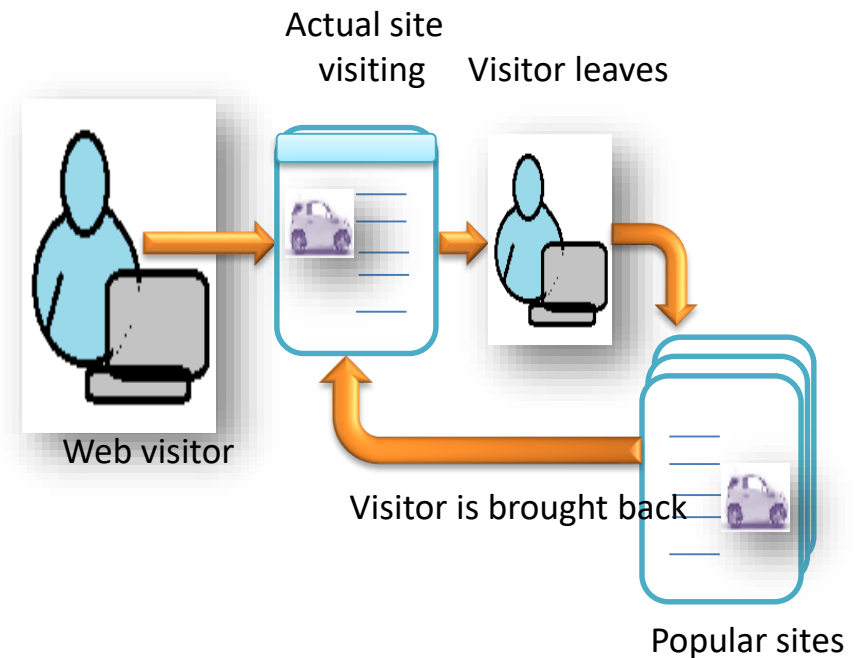
why we should care about managing our digital footprint

For following four reasons

1. To protect our reputation
2. To make safe personal information
3. To prevent financial loss
4. To preserve our freedom

Risk due to digital footprint

- Privacy concern
- Scam
- Identity theft
- Fake websites

How to manage digital footprints

- ❑ Enter name into several search engines
- ❑ Double-check privacy settings, but don't trust them
- ❑ Create strong, memorable passwords
- ❑ Keep all our software up to date.
- ❑ Review our mobile use. Delete useless files(temp.)
- ❑ Build reputation through behavior.

Net or communication etiquettes

Netiquette is short for "Internet etiquette" or communication etiquettes over internet. It is Just like etiquette - a code of polite behavior in society, netiquette is a code of good behavior on the Internet. It includes several aspects of the Internet, social media, email, online chat, web forums, website comments, multiplayer gaming, and other types of online communication.

Net or communication etiquettes

Do

- Keep Messages and Posts Brief
- Use Discretion
- Protect Personal Information
- Obey Copyright Laws
- Help Others
- Respect other people's privacy
- Verify facts before reposting
- Check messages and respond promptly
- Thank others who help you online
- Show good sportsmanship when playing online games

Don't

- posting inflammatory /offensive comments shout
- respond to Internet Trollers
- Post private or embarrassing images/comments
- Name-call or express offensive opinions
- Exclude people or talk behind their backs
- Stick to the topic
- spam others by sending large amounts of unsolicited email.

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Social Media Etiquettes

With millions of people active on social media platforms daily across the world, we must keep to protocol standards when interacting with others. Just similar to interacting with people face-to-face, it is important to keep the same etiquette on social media.

Some rules of Social Media Etiquettes

1. Don't pretend to be someone you're not
2. Don't be a smartass
3. Don't get into arguments
4. Don't stoop too low
5. Double-check your grammar
6. Interact with people
7. Censor yourself
8. Don't post party photos
9. Link original sources
10. Have fun

Data protection - refers to the practices, safeguards, and binding rules put in place to protect our personal information and ensure that it remain in control. In short, we should be able to decide whether or not we want to share some information, who has access to it, for how long, for what reason, and be able to modify some of this information, and more.

Consequences of Unprotected Data/Data breaches

- Suffer from security breach/attack
- Physical data loss
- Hit with a virus
- Targeted by hackers
- Suffer from DDoS(Distributed denial of service)
- Lose of money
- Intellectual property at risk
- Damage downtime

Societal Impacts-part 1

How we can protect our personal data online

- Through Encrypt our Data
- Keep Passwords Private
- Don't Overshare on Social Networking Sites
- Use Security Software
- Avoid Phishing Emails
- Be Wise About Wi-Fi
- Be Alert to Impersonators
- Safely Dispose of Personal Information

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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.),

IPR

PATENT,
COPYRIGHT,
TRADEMARK
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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.

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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

Kinds of IPRs

- **Patent** (to protect technologies - The Patent Act). A patent is a right granted to an inventor by government that permits the inventor to exclude others from making, selling or using the invention for a period of time.

- **Trade Mark** (to protect words, signs, logos, labels –The Trade Mark Act) . Trademark refers to a recognizable insignia, phrase, word, or symbol that denotes a specific product and legally differentiates it from all other products of its kind.

- 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). A copyright is a collection of rights that automatically vest to someone who creates an original work of authorship like a literary work, song, movie or software

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

Violations of IPRs

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* & *Academic theft*!

Violations of IPRs
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"

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Violations of IPRs

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

Violations of IPRs

Copyright Infringement:- typically involves someone using another person's original creative work, or a copyrighted work, without permission.E.g. Recording a film in a movie theater, Using copyrighted images , Downloading music or films without paying for their use etc.

Tips for Avoiding Copyright Infringement

- Understand what copyright laws protect
- If it's not your original work, don't use it
- What you find on the internet is generally not fair game.

Under the Copyright Act, 1957, criminal action against copyright infringement can be taken. It would be liable for punishment for imprisonment for not less than 6 months and up to 3 years, or fine of at least Rs. 50,000 to Rs. 2 lakhs.

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Violations of IPRs

Trademark Infringement:- Use of the registered trademark by another party for the Designated Goods or Services is deemed to infringe the trademark rights.

Tips for Avoiding Trademark Infringement

- Make sure your brand name is unique
- Get trademark search done
- Check if there is an actual chance of confusion?
- Compare the marks
- Study similar products and services
- Register your trademark

In the case of a criminal proceeding, the court dictates the following punishment:

- Imprisonment for a period not less than six months that may extend to three years
- A fine that is not less than Rs 50,000 that may extend to Rs 2 lakh

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Open Source Software

In general, open source software 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

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Free and Open Source software(FOSS)

FOSS is a kind of software that all allows users to not only freely run the program for any purpose, but also provides users access to its source code. Moreover, it also allows us to modify as we wish, as well as freely distribute copies of the original version or their altered version.

Following criteria must be met for FOSS

- 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
- It must be free.

Types of Software based on use:

❑ Free Software – Free Software are those which are freely accessible, freely accessible, freely used, changed,improved, copied and distributed. It provides all types of freedom. The term 'Free' means'Freedom' at very little or No cost. The Source Code is also available with Free Software.

❑ Open Source Software: Open Source Software can be freely used, changed, improved, copied and Re-distributed but it may have some cost for the media and support for further development.Source Code is also available with OSS. It can be modified and redistributed with some guidelines. The License may restrict source-code from being distributed and modification to maintain the Author's integrity. A software which is FREE as well as OPEN, called Free & Open Source Software (FOSS) or Free Libre & Open Source Software (FLOSS).

Types of Software based on use:

- **Proprietary Software**: These Software are neither open nor freely available. They must have some cost and Source codeis also not given since it is property of the developer organization. No change, copy and distribution are allowed.

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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.

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Software 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.

Software 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:
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