

## LEARNING IN THIS CHAPTER

- Internet
- Advantages and Disadvantages of the Internet
- Computing Ethics
- Unethical Practices
- Cybercrime
- Safety Measures while using Computer and Internet
- Digital Footprint

 INTERNET

The Internet is one of the largest information databases. It has become a vital part of our life. Internet stands for Interconnected Network of computers. It is a global system of inter-connected computer networks that enables the users to share information and various resources with each other. It uses common communication standards and interfaces to provide the physical backbone for many interesting applications.

Tasks that were usually performed through personal interaction, such as banking, shopping or communication, can now be done online. We can share data and information across the globe instantly. Indeed, the Internet has transformed the world into a smaller and convenient place to live in. The scope of the Internet is getting wider with each passing day. To analyse how fast the Internet is growing, pick any newspaper or magazine, and carefully observe the advertisements given therein. You would realise that almost every enterprise has its website listed in addition to its address and telephone numbers. Every organisation is making its presence felt on the Internet.

The Internet is a boon to the world as the 24x7 operation of the Internet has revolutionised almost every aspect of our life.

 ADVANTAGES OF THE INTERNET

**EDUCATION:** The Internet has changed the traditional learning system. It is widely used for educational purposes by scholars, students, and teachers to learn anytime and anywhere. It has shown dramatic impact on higher education as a growing number of universities offer online courses. IGNOU is one such university which offers this facility. The Internet is a vast storehouse of information and is also used to publish papers and articles.

**CONVENIENT MODE OF COMMUNICATION:** The Internet provides a convenient and economical mode of communication. Users can communicate with each other using various services available on the Internet like e-mail, chat, video conferencing, instant messenger, etc.

**BUSINESS:** The Internet has brought new opportunities for businesses to sell goods and services online, which has proven to be beneficial. Meetings can be conducted economically through the video conferencing facility, without physically visiting the place. Financial transactions can be made online from the office or home.

**E-COMMERCE:** It is the concept used for any type of commercial or business deal that involves the transfer of money across the globe by using the Internet. Nowadays, many companies have their own portals/websites, which are used for E-commerce. E-commerce industry has become one of the biggest industries in the world. We can now purchase a variety of goods and get services from different shopping portals around the world. It also includes booking hotel rooms, and tickets for bus, flight, and train.

**MEDIA AND ENTERTAINMENT:** The Internet has facilitated the media and entertainment industry. Downloading games, videos, songs, visiting chat rooms, or surfing the web, are some of the uses which attract people towards the Internet. The Internet also provides the facility to read different newspapers, magazines, and books online.

**SOCIAL NETWORKING:** It is the latest way to communicate. It offers a platform where an individual can connect with friends and strangers on the basis of shared interests or views. Some examples of social networking sites are: Facebook, Twitter, LinkedIn, My Space, etc.

**FORUM:** An Internet forum is an online discussion site where like-minded people can hold conversations in the form of posted messages.

**HEALTH AND FITNESS:** The Internet is now playing a vital role in providing extensive information on health and fitness. Using various medical sites, one can read more about various diseases, their remedies, and precautionary measures.

## DISADVANTAGES OF THE INTERNET

The Internet has several advantages for every individual and it is extremely popular in this modern age. However, it is a tool which must be handled with caution as its misuse can be hazardous. Some of the threats posed by the Internet are as follows:

**VIRUS THREAT:** Computers that are connected to the Internet are more prone to virus attacks, which can result in the crashing of the system, data loss, and hardware malfunctioning.

**SPAMMING:** It refers to unwanted e-mails, that are of commercial nature, sent indiscriminately to multiple mailing lists, individuals, or newsgroups. It unnecessarily uses the system's resources and can also be used to spread computer virus or other malicious software.

**THEFT OF PERSONAL INFORMATION:** The Internet is the main source of social evils like piracy, plagiarism, and the privacy of an individual or an organization. One should be careful while handling one's personal information, such as name, address, credit card number, etc., as they can be accessed by hackers or crackers for personal monetary gains. Such elements can also disturb system applications by spreading virus and changing program logics and outputs.

**PORNOGRAPHY:** This is a major issue posed by the Internet. There are many pornographic sites on the Internet that can be found easily and can be hazardous to the mental health of the children.

**CYBER TERRORISM:** It causes a serious threat to the world nowadays. Modern terrorist organisations perform targeted attacks on power plants, banks, commercial areas, or buildings of national importance. These can be conducted remotely with the help of a mobile phone and the Internet, which are less expensive than traditional terrorist methods.

**TIME WASTAGE:** Although the Internet provides various services to its users, yet people generally waste time and energy in surfing the net. Spending prolonged time on electronic devices adversely affect our eyesight as well as



mental health. This can also result in the loss of our personal interaction with people, thus affecting both, our socialising skills and personal relationships.

## COMPUTING ETHICS

Ethics is a set of moral principles that governs the behaviour of a group or an individual. Similarly, Computing Ethics is a set of procedures, moral principles, and ethical practices that regulate the use of computers. It focuses on ethical implementation and use of computing resources and include new issues that are raised by new technologies. It basically aims at encouraging IT users to be responsible in order to utilize the technology tools judiciously, respect views of others, and acknowledge the rights and properties of other people on the Internet.

Given below are some of the common ethical guidelines which should be followed while using a computer:

- ➊ Do not use computer technology to steal information or to cause disruption or interference in other users' work.
- ➋ Do not spy on another person's computer data.
- ➌ Do not contribute to the spread of wrong information using computer technology.
- ➍ Avoid buying pirated software. Pay for the software unless it is free.
- ➎ Do not use someone else's computer resources without an authorization.
- ➏ Do not claim ownership on a work which is the output of someone else's intellect.
- ➐ Before developing a software, think about the social impact it can have.
- ➑ Be respectful and courteous with the fellow users while communicating on the Internet.

## UNETHICAL PRACTICES

In the following section, we will discuss some of the common unethical practices which are prevalent in the society:

### PLAGIARISM

Plagiarism is the usage or imitation of the language and thoughts of another person projected as one's own original work. It is considered a crime or fraudulent act.

The Merriam-Webster Dictionary describes 'plagiarism' as follows:

- ➊ To steal and pass off ideas or words of another as one's own.
- ➋ To use another's production, without crediting the source.
- ➌ To commit literary theft.
- ➍ To present as new and original, an idea or product derived from an existing source.



### Know the Fact

**Cyber trafficking** refers to the serious crime of selling drugs, weapons, and even human beings over the Internet. Traffickers contact their customers through encrypted e-mails and fix their deals at places like Internet cafes in order to sell their illegal substances. Some criminals even build websites for online selling and trade of these harmful commodities.

### Let's Know More

**Defamation** is defined as a communication that intends to harm or damage the reputation of a person, business, product, government, religion, or nation.

### Know the Fact

**Key logger** programs are used to check user's keystrokes and get important information, such as passwords, etc.

### Let's Know More

**Social Engineering** refers to psychological manipulation of people into performing actions or divulging confidential information.

International Copyright Laws also state that, "expression of original ideas is considered as Intellectual Property and is protected by copyright laws", just like original inventions. Almost all forms of expressions fall under the copyright protection as long as they are recorded in some manner (such as a book or a computer file).

Plagiarism has become very easy with technological advances like Web Searching and Copy/Paste options. Most critics have linked carelessness, laziness, lack of interest, and arrogance as the major reasons of Plagiarism.

### Measures to Prevent Plagiarism

The simplest way to prevent plagiarism is 'citation'. The process of acknowledging the original writer and the source from where the material has been taken is called 'citation'. It includes the following steps:

- All sources are neither accurate, nor they validate the information as accurate. Therefore, you must specify the source, which informs readers regarding the basis of your ideas and the extent of your research. Citation gives strength to your resource.
- To avoid plagiarism, one can rephrase the matter.
- Use quotation marks around all the quoted words of another person to avoid plagiarism.
- In the education sector, students should be encouraged to present their original and innovative ideas. Even if they wish to refer to the resources, they should be made aware of the pattern of references. In this manner, plagiarism can be avoided and students can be motivated to work hard and bring out their original work.

### CYBERBULLYING

It is an act of deliberately harming, harassing, or targeting a person by another person using the Internet. This includes insulting remarks and threatening messages sent by e-mail, spreading rumors about the person either by e-mails or social networking sites, posting embarrassing photos and videos to hurt the person, and derogatory remarks against gender, race, religion, or nationality.



### Measures to Prevent Cyberbullying

- Do not disclose your identity to unknown persons.
- Safeguard your password and all private information from inquisitive peers. Do not give bullies any opportunity to misuse the information on the social media platform.
- Search the whereabouts of the person you meet online and know about him fully before starting any conversation with him.
- Restrict your online profile to be checked by the trusted friends only.
- If you are cyberbullied by someone, do not remain silent but take action against cyberbullying. Do not use abusive language, rather block the communication with the cyberbully and share this problem with your parents.

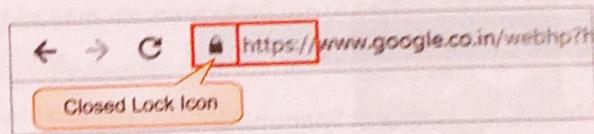
### PHISHING

It is an act of sending an e-mail to a user misleading him to believe that it is from a trusted person or organisation. The user is asked to visit a website in which he is supposed to update or validate his personal details, such as user name,

password, credit card details, etc. In this way the operators of the fake website steal your identity and commit crimes in your name. This could damage your reputation and cause heavy financial losses.

### Measures to Prevent Phishing

- 1 Identify suspected phishing e-mails that come from unrecognised senders. Guard against scam.
- 2 Do not click on links, download files, or open attachments in e-mails from unknown senders.
- 3 Beware of links in e-mails that ask for the personal details.
- 4 Enhance the security of your computer by protecting it with a firewall, spam filters, antivirus, and anti-spyware software.
- 5 Do not divulge personal information over the phone unless you initiate the call. Enter your sensitive data in secured websites only. The URL of a secured website starts with **https://** and your browser displays an icon of the closed lock.
- 6 Check your online accounts and bank statements regularly to ensure no unauthorized transactions are made.



### HACKING

Hacking refers to an illegal intrusion into a computer system or network. Hackers are highly technical people who secretly break into computers to steal or sometimes, destroy important data. Hackers not only steal important data but also hack applications and websites to change program logics. Hackers usually tamper with data for unethical purposes, just for an obsession to break the system securities. Although hacking is done without any consent from the user, yet it is not always destructive. Hacking which is done for a good cause, such as national security, etc., is known as **Ethical hacking**.



Another form of malicious cyber activity is cracking. **Crackers** are technical people who are experts in breaking into systems, to steal important data, such as financial details, passwords, etc. Sometimes they use key loggers for this purpose. Crackers also cause harm to computers by destroying data. Apart from this, they disturb applications by spreading malwares and changing program logics and outputs.

### Measures to Prevent Hacking

- 1 Keep your passwords secret and change them periodically.
- 2 Frequently update your operating systems and other software, like antivirus.
- 3 Avoid using open Wi-Fi as it makes it easy for hackers to steal the information and download inappropriate content to your system.
- 4 Always make use of secure websites by looking at the lock sign or https on the address bar. This ensures that the sensitive data which is passed from your device is encrypted, making it difficult for the hacker to decipher the information.

- Always check permissions and authenticity on the apps before installing them. You should also ensure that the apps are not accessing unnecessary information. For example, a drawing app should not have access to your contact list or your network information.
- Never store your credit card information on a website.

## SPAMMING

Spams are unwanted bulk e-mails that come from strange sources. Spams are generally sent in large numbers for commercial advertising. In spamming, millions of copies of the same message are sent to e-mail users worldwide. Spam is a serious security concern as it can be used to deliver Trojan Horses, Viruses, Worms, Spyware, and organise targeted phishing attacks.



### How to identify spam?

- Messages that do not include your e-mail address in the TO: or CC: fields are common forms of spam.
- Some spam e-mail can contain offensive language or links to websites with inappropriate content.

### Measures to Prevent Spamming

- Install spam filtering/blocking software.
- If you suspect that an e-mail is spam, do not respond, just delete it.
- Reject all instant messages from persons who are not in your contact list.
- Do not click on the URL links within Instant Messenger unless it is received from a known source.
- Keep the software and security patches up-to-date.

## INDIVIDUAL RIGHT TO PRIVACY

In this digital era, there has been a significant increase in the use of technology. As the technology is progressing, so are the privacy parameters diminishing. The Internet is commonly used for various purposes, such as for personal communication, accessing information on any topic, for financial transactions, etc. The use of the Internet can affect the privacy rights and personal data of a person.

Privacy is one of the major concerns in one's life. The right to privacy may be defined as the claim of individuals, groups, or institutions to determine when, how, and to what extent the information about them could be communicated to others. Privacy issues come into picture when personal information is collected, used, and shared without the consent of the authorised person/business concerned. So, certain preventive measures should be taken to avoid infringement of privacy.

### Measures to Protect Privacy

- Be careful while sharing your personal profile on the social networking sites.
- Never share your login details with anyone.
- Delete the sensitive data when not in use.
- Never click on a link sent to you via text or e-mail from a stranger.

- Protect your online privacy by disabling the cookies in the web browser being used.
- A **Cookie** is a small text file stored on your computer's browser directory that collects the information of your online activity and reports back to the host.
- Install security software like antivirus, anti-spyware, or firewall software to protect your system against intrusions and infections.
- Lock up your system when not in use.

#### Let's Know More

Sometimes spam attackers keep sending bulk mails till the mail server gets full. This practice is known as **Mail Bombing**.

### SOFTWARE PIRACY

When software is copied and distributed illegally, it is called Software Piracy. A license or copyright is required to copy the genuine programs of someone else. You encourage software piracy when:

- You purchase a single licensed copy of the software and load it onto several computers contrary to the license's terms. This is called **Softlifting**.
- You make unauthorised copies of the copyrighted software and distribute them.
- You install unauthorised copies of software on the hard disks of personal computers.
- You make unauthorised selling of software for temporary use or sell or buy the software CDs/DVDs on rent.



### Measures to Prevent Software Piracy

- Buy the licensed copy of software. Follow the terms and conditions of the license for each software product you purchase. Never make copies and circulate them.
- Purchase software CDs from a reputed seller to ensure that it is genuine. Avoid using illegal CDs given by your friends to listen to your favorite music or watch movies.
- If software is available online, download it directly from the manufacturer's website.
- Register your software to avoid Softlifting.



#### Know the Fact

**Vishing** is the criminal practice of using social influence over the telephone system, most often using features facilitated by Voice over IP (VoIP), to gain access to sensitive information such as credit card details from the public.

The term is a combination of "Voice" and "Phishing".

### INTELLECTUAL PROPERTY RIGHTS

Intellectual Property is a term that refers to the legal property rights of a person over creations of his/her mind, both, artistic and commercial. Under Intellectual Property Law, owners are granted certain exclusive rights over the use of his/her creations, such as musical, literary, and artistic works for a certain period of time. These rights ensure that the creator's hard work is safe and protected from unauthorised copying and piracy.

#### Let's Know More

**Bot** is one of the most sophisticated types of crime-ware applications that perform a wide variety of automated tasks on behalf of the cyber criminals.

## A. Fill in the blanks:

1. ..... are a set of procedures, moral principles, and ethical practices that regulates the use of computer.
2. The simplest way to prevent plagiarism is .....
3. ..... is an act of deliberately harming, harassing, or targeting a person by another person using the Internet.
4. An illegal intrusion into a computer system or network is known as .....
5. ..... is a term referring to the legal property rights of a person over creations of his/her mind, both, artistic and commercial.

### HINTS

- Intellectual property
- Computer Ethics
- Hacking
- Citation
- Cyber bullying

## B. State True or False:

1. Spams are unwanted bulk e-mails that come from strange sources.
2. Hacking is the usage or imitation of the language and thoughts of another person and projecting them as one's own original work.
3. You can identify the unsecured websites by looking at the lock sign or https on the address bar.
4. Encryption is the process of transforming data into an unreadable code.
5. A patent grants the inventor the sole right to make, use, and sell that invention for an unlimited period.

## C. Application Based Questions:

1. Neha is confused in deciding whether the mail which she has received is a genuine one or a spam. Can you help her in identifying the spam by specifying any indicative feature?
  

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2. Ruby is surfing the Internet to prepare herself for the Civil Services Examination. She wants to know whether the websites which she is referring are secured or not. Suggest her the way in which she can clear her doubt.

### **Multiple Choice Questions:**

1. The unwanted bulk e-mails that come from strange sources are called as .....
- Spams
  - Trash
  - Junk
2. ..... is a small text file stored on your computer's browser directory that collects the information of your online activity and reports back to the host.
- Register
  - Cookie
  - Browser
3. A ..... is a legal right granted by law to the creator for his original work.
- Copyright
  - Patent
  - Trademark
4. ..... is the process of transforming data into an unreadable code.
- Encoding
  - Encryption
  - Decryption
5. ..... is an act of sending an e-mail to a user misleading him to believe that it is from a trusted person or organisation, in an attempt to obtain sensitive information for malicious purposes.
- Phishing
  - Spamming
  - Hacking

### **E. Answer the following:**

1. What are the advantages of the Internet?

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2. Write down any four ethical guidelines which should be followed while using a computer.

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3. Define plagiarism. What steps can be taken to prevent it?

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4. How can you protect your Intellectual Property Rights from getting violated?

5. Write short notes on:

a. Spamming

b. Cybercrime

c. Firewall

d. Software Piracy

e. Hacking

f. Phishing

# ACTIVITY SECTION



## LAB SESSION

### Perfection Through Practice

- Open Microsoft PowerPoint 2010.
- Select the ‘Blank Slide layout’ from the Layout button on the Home tab.
- Click on the Text Box button on the Insert tab in the Text group. Hold-down the left mouse button while dragging the mouse to the right side. Release the mouse button.
- You will get a rectangular box with an insertion point in it.
- Enter the text as shown in the first slide. Insert another slide in the presentation.
- Click on the Layout button on the Home tab and select the ‘Two Content’ layout from the drop-down menu. Enter the text given in the Outline Pane.
- Apply different animation effects to each point. Save the presentation by specifying a name to it.

**Identity Protection while using the Internet**

- **Phishing:** It is the act of illegally acquiring personal and sensitive information such as, online banking details, credit card details, and other login details, of an individual by sending malicious e-mails.
- **Dumpster Diving:** It is a technique used to retrieve personal information of a user from his discarded documents. Cyber thieves search your trash to get information about your bills, credit cards, and other personal information etc.
- **Pretexting:** It is the practice of obtaining a person's personal information using a fake name or fake company and then selling that information to people who use it to steal that person's online identity.

Identity Protection while using the Internet

## GROUP DISCUSSION

### For Concept Clarity

Conduct a group discussion on : **Hackers vs Crackers, Cyber Bullying vs Cyber Trafficking.**



## PROJECT WORK

### Using Creativity

Make a presentation on, **Unethical Practices prevalent on the Internet.** Make use of effective pictures, audio, and video clips wherever required.



## ONLINE LINKS

### Looking For More

To know more about unethical practices, visit the following links:

- <https://www.cybrary.it/op3n/top-10-network-security-threats-security-measures/>
- [https://en.wikipedia.org/wiki/Computer\\_security](https://en.wikipedia.org/wiki/Computer_security)

