COMPUTER SCIENCE

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ASSIGNMENT – 6

COMPUTER ETHICS AND CYBER SECURITY

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COMPUTER ETHICS AND CYBER SECURITY

INTRODUCTION:

- Internet is a communication media which is easily accessible and open to all. Information Technology is widespread through computers, mobile phones and internet. There is a lot of scope and possibility for misuse of Information Technology.
- A cyber-crime is a crime which involves computer and network. This is becoming a growing threat to society and is caused by criminals or irresponsible action of individuals who are exploiting the widespread use of Internet. It presents a major challenge to the ethical use of information technologies. Cyber-crime also poses threats to the integrity, safety and survival of most business systems.

ETHICS:

- Ethics means "What is wrong and What is Right". It is a set of moral principles that rule the behavior of individuals who use computers. An individual gains knowledge to follow the right behavior, using morals that are also known as ethics.

COMPUTER ETHICS:

- With the help of internet, world has now become a global village. Internet has been proven to be a boon to individuals as well as various organizations and businesses.
- Computer ethics deals with the procedures, values and practices that govern the process of consuming computer technology and its related disciplines without damaging or violating the moral values and beliefs of any individual, organization or entity.

GUIDELINES OF ETHICS:

- **Honesty:** Users should be truthful while using the internet.
- **Confidentiality:** Users should not share any important information with unauthorized people.
- **Respect:** Each user should respect the privacy of other users.
- **Professionalism:** Each user should maintain professional conduct.
- **Obey The Law:** Users should strictly obey the cyber law in computer usage.
- **Responsibility:** Each user should take ownership and responsibility for their actions.

ETHICAL ISSUES:

- An Ethical issue is a problem or issue that requires a person or organization to choose between alternatives that must be evaluated as right (ethical) or wrong (unethical).

  Some of the common ethical issues are listed below:
  - Cyber crime
  - Software Piracy
  - Unauthorized Access
  - Hacking
  - Use of computers to commit fraud
  - Sabotage in the form of viruses
  - Making false claims using computers

Various crimes happening using computer:

Crime	Function
Cyber Terrorism	Hacking, threats, and blackmailing towards a business or a person.
Cyber stalking	Harassing through online.
Malware	Malicious programs that can perform a variety of functions including stealing, encrypting or deleting sensitive data, altering or hijacking core computing functions and monitoring user's computer activity without their permission.
Harvesting	A person or program collects login and password information from a legitimate user to illegally gain access to others' account(s).
Spam	Distribute unwanted e-mail to a large number of internet users.
Spoofing	It is a malicious practice in which communication is send from unknown

SOFTWARE PIRACY:

- Software Piracy is about the copyright violation of software created originally by an individual or an institution.
- It includes stealing of codes / programs and other information illegally and creating duplicate copies by unauthorized means and utilizing this data either for one's own benefit or for commercial profit.
- In simple words, Software Piracy is "unauthorized copying of software".
  Types of Privacy:
  - Duplicating and selling copyrighted programs.
  - Downloading software illegally through network.

Different types of cyber attacks:

- **Virus:** A virus is a small piece of computer code that can repeat itself and spreads from one computer to another by attaching itself to another computer file.
- **Worms:** Worms are self – repeating and do not require a computer program to attach themselves.
- **Spyware**: Spyware can be installed on the computer automatically when the attachments are open, by clicking on links or by downloading infected software.
- **Ransomeware:** Ransomware is a type of malicious program that demands payment after launching a cyper-attack on a computer system.
- **Pharming** : Pharming is a scamming practice in which malicious code is installed on a personal computer or server, misdirecting users to fraudulent web sites without their knowledge or permission.
- **Phishing:** Phishing is a type of computer crime used to attack, steal user data, including login name, password and credit card numbers.
- **Man In The Middle (MITM):** Man-in-the-middle attack is an attack where the attacker secretly relays and possibly alters the communication between two parties who believe they are directly communicating with each other.

Encryption and Decryption.

- Encryption is the process of translating the plain text data (plaintext) into random and mangled data (called cipher-text).
- Decryption is the reverse process of converting the cipher-text back to plaintext. Encryption and decryption are done by cryptography.

Tamil Computing:

- Tamil is a living language for thousands of years. Development of modern technologies, does not affect the growth of classical Tamil as it is ready to adopt the growing technological changes. **Tamil is not just a language, it is our identity, our life and our sense.**

Search Engines in Tamil:

- The "Search Engines" are used to search any information from the cyber space. Although there are many search engines, but only a few of them are frequently in use. Google and Bing provide searching facilities in Tamil, which means you can search everything through Tamil. The Google search engine gives you an inbuilt Tamil virtual keyboard.

e – Governance:

- Getting Government services through internet is known as e-Governance. Govt. of Tamilnadu has been giving its services through Internet.

e-Library:

- E-Libraries are portal or website of collection of e-books. Tamil e-Library services provide thousands of Tamil Books as ebooks mostly at free of cost.

Familiar Tamil Keyboard Interface:

- NHM Writer, E-Kalappai and Lippikar – are familiar Tamil keyboard interfaces software that is used for Tamil typing which works on Tamil Unicode, using phonetics. Sellinam and Ponmadal – are familiar Tamil keyboard layouts that works on Android operating system in Smart phone using phonetics.

Tamil Translation Applications:

- Thamizpori is a Tamil translation application having more than 30000 Tamil words equalent to English words. Using this application, we can translate small English sentences into Tamil. Google also gives an online translation facility.

Tamil Programming Language:

- Programming languages to develop software in computers and smart phones are available only in English. Now, efforts are taken to develop programming languages in Tamil. Based on Python programming language, the first Tamil programming language "Ezhil" is designed.

TSCII (Tamil Script Code for Information Interchange):

- TSCII (Tamil Script Code for Information Interchange) is the first coding system to handle our Tamil language in an analysis of an encoding scheme that is easily handled in electronic devices, including non-English computers.
- This encoding scheme was registered in IANA (Internet Assigned Numbers Authority) unit of ICANN.

Tamil Virtual Academy:

- With the objectives of spreading Tamil to the entire world through internet, Tamil Virtual University was established on 17th February 2001 by the Govt. of Tamilnadu. Now, this organisation functioning with the name "Tamil Virtual Academy". This organization offers different courses regarding Tamil language, Culture, heritage etc., from kindergarten to under graduation level.

EDUCATION IS THE

KEY TO UNLOCK

THE GOLDEN DOOR OF

FREEDOM.

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