Computer security, also known as **cyber-security** or **IT security**, is the protection of information systems from theft or damage to the hardware, the software, and to the information on them, as well as from disruption or misdirection of the services they provide. It includes controlling physical access to the hardware, as well as protecting against harm that may come via network access, data and code injection, and due to malpractice by operators, whether intentional, accidental, or due to them being tricked into deviating from secure procedures.

What are the concerns of computer security?

Computer Security is concerned with four main areas:

1. Confidentiality:- Only authorized users can access the data resources and information.

2. Integrity:- Only authorized users should be able to modify the data when needed.

3. Availability:- Data should be available to users when needed.

4. Authentication:- are you really communicating with whom you think you are communicating with

Why is computer security important?

Prevention of data theft such as bank account numbers, credit card information, passwords, work related documents or sheets, etc. is essential in today's communications since many of our day to day actions depend on the security of the data paths. Data present in a computer can also be misused by unauthorized intrusions. An intruder can modify and change the program source codes and can also use your pictures or email accounts to create derogatory content such as pornographic images, fake misleading and offensive social accounts.

Malicious intents can also be a factor in computer security. Intruders often use your computers for attacking other computers or websites or networks for creating havoc. Vengeful hackers might crash someone's computer system to create data loss. DDOS attacks can be made to prevent access to websites by crashing the server.
Above factors imply that your data should remain safe and confidential. Therefore, it is necessary to protect your computer and hence the need for Computer Security arises.

What is firewall?

A firewall is a security-conscious piece of hardware or soft-ware that sits between the Internet and your network with a single-minded task: preventing them from getting to us. The firewall acts as a security guard between the Internet and your local area network (LAN). All network traffic into and out of the LAN must pass through the firewall, which prevents unauthorized access to the network.

Module 183
183.   CS Impact: Privacy

Individual's right to own the data generated by his or her life and activities, and to restrict the outward flow of that data. Privacy uses the theory of natural rights, and generally responds to new information and communication technologies. In North America, Samuel D. Warren and Louis D. Brandeis wrote that privacy is the "right to be let alone".

From where data comes from:

- ✓ Social Sites (Facebook, twitter)
- ✓ Telephone companies (mobile networks)
- ✓ Smart city cameras on road
- ✓ Emails
- ✓ Personal Software
- ✓ Passwords, logins etc

How to handle on internet

- ✓ Emails can be encrypted
- ✓ Anonymizing proxies
- ✓ Anonymizing networks

Privacy Information

Privacy information of famous websites is given below:

- ✓ Google:
https://policies.google.com/privacy
- ✓ msn:
https://www.msn.com/en-us/autos/partner/privacypolicy
- ✓ WhatsApp:
https://www.whatsapp.com/legal/#privacy-policy

EPIC

- ✓ Electronic Privacy Information Center

- ✓ Independent non-profit research center in Wasgingon D.C. Its mission is to focus public attention on emerging Privacy and related human rights issues.

- ✓ EPIC has pursued several successful consumer privacy complaints with the US Federal Trade Commission, concerning Snapchat (faulty privacy Technology), WhatsAp (privacy policy after acquisition by Facebook (changes in user privacy settings), Google (roll-out of GoogleBuzz), Microsoft (Hailstorm log-in),issues.

- ✓ Privacy International

- ✓ Charity organization of London, UK

Priority Areas:

- ✓ Challenging Data Exploitation

- ✓ Building the Global Privacy Movement

- ✓ Contesting Surveillance

Module 184
184.   CS Impact: Social Issues of IT

The growth in the availability of affordable computing technology has caused a number of major shifts in the way that society operates. The majority of these have been for the better, with home computers and the internet providing unlimited access to all of the information ever created and discovered by humanity.

There are, however, some less positive social issues generated as a direct result of technological advances. In the interests of balance, it is important to analyze these and assess the severity of their impact so that steps can be taken to better understand and combat the negative effects.

1.   Communication Breakdown

Socializing within a family unit has always been important, as it strengthens the bonds between us and ensures cohesion within the group. But with more and more households owning several computers and numerous portable devices granting access to information and entertainment, some argue that this is leading to a lack of family communication.

2.   Defamation of Character

The only means of getting in touch with major corporations or famous people in the public eye prior to the advent of digital communication was via a stiffly written letter. This was, of course, accessible only to the intended recipient and thus a very private way for the disgruntled to vent their spleen. But first message boards and now social media services like Facebook and Twitter are being used to defame people and businesses in an intrinsically public manner.

3.   Identity Theft

Fraud is another spurious activity that has been able to evolve in the wake of easily accessible computers and the internet. Perhaps most problematic and prevalent of the various fraudulent activities is identity theft, in which personal details of innocent people are harvested by a third party so that they can be used for malicious purposes. This includes carrying out illicit online transactions and other damaging activities that can have serious ramifications.

4.   Cyber Bullying

As with the defamation of public figures, the internet and computers have also made it easier for spiteful people to attack people they know personally as well as perfect strangers via the anonymous platforms that are available to them.

5.   Gaming Addiction

Whilst computers and the internet have made it easier for gambling addicts to get their fix, a new type of addiction has also arisen, in the form of addiction to videogames. This is something that can impact people of all ages and leads inevitably to a number of problems, from the social to the financial.

6. Privacy

Whilst high profile cases of online identity theft and fraud should have caused people to become more careful about how they use their personal information, issues of privacy and a lack of appreciation for the

risks are still widespread. This extends beyond simply giving away private data via chat rooms, message boards and e-commerce sites and extends into the compromising world of social media.

7. Health & Fitness

We are living increasingly sedentary lifestyles, because computers are removing the need for us to physically carry out many tasks, as well as keeping us rooted to one spot throughout our working days and during our leisure time.

8. Education

The educational properties of computers are well known and universally lauded but having all the information in existence on tap has its own issues. In particular, the practice of plagiarism has become a major problem, as students can simply copy and paste whole chunks of text from online sources without attributing the work to anyone else. This has become the bane of educational institutions, which tend to come down hard on detected plagiarists in order to discourage similar activities from others.

9. Terrorism & Crime

Computers have been a positive force in allowing for the creation of global movements and righteous activism in a number of forms. However, the other side of the coin is that terrorists and organized criminals also exploit the web for their own nefarious purposes.

10. Access to forbidden literature

Computer has made available the access to the forbidden literature. This has led us to many social problems in the society.

Module 185
185.   CS Impact: Content Filtering, Email-Spams and Laws

Content filtering, in the most general sense, involves using a program to prevent access to certain items, which may be harmful if opened or accessed. The most common items to filter are executable, emails or websites.

How it works

Content filtering works by matching strings of characters. When the strings match, the content is not allowed through. Content filters are often part of Internet firewalls. In such a usage content filtering is serving a security purpose. Content filtering is also used to implement company policies related to information system usage. For example, it's common to filter websites like Facebook, youtube etc which are considered unrelated to work.

Spam emails

As email spam continues to become a major issue, governments around the world have put specific regulations in place to protect their citizens from spams.

Important Laws

- ✓ CAN-SPAM Act in US
- ✓ Canada's Anti-Spam Legislation (CASL)
- ✓ Anti-spam law in Europe
- ✓ Spam Act of 2003 in Australia
- ✓ Africa, Asia and South America have looser spam-law requirements

CAN-SPAM Act

1. Don't use false or misleading header information
2. Don't use deceptive subject lines
3. Identify the message as an ad
4. Tell recipients where you're located
5. Honor opt-out requests promptly
6. Monitor what others are doing on your behalf

Major requirements

- ✓ Ask for permission before adding emails
- ✓ User could identify you as Sender
- ✓ Do not give email address to others
- ✓ Be honest

Module 186
186.   CS Impact: Children Protection and Electronic Theft

There are lots of reasons why people start using parental controls. Perhaps to stop late night phone checking. Perhaps to help stop arguments when it's time put the iPad down and get on with homework. Maybe to reduce the total amount of time being spent on screens in general. There are many more cases. Ultimately though all of these reasons amount to a desire for one's children to become more responsible and disciplined in their use of digital technology.

We hope and aim to encourage an attitude and approach in our kids that will render parental controls unnecessary. But how can we make sure that our use of parental controls doesn't wind up as abstract punishment or authoritarian control but is a genuine tool for building responsibility and right priorities in our kids? One method that's got quite a bit of attention on social media is the idea of a parent/child cell phone contract.

The following risks are involved in such scenarios:

- ✓ Content Risks.
- ✓ Contact Risks
- ✓ Online Marketing
- ✓ Overspending
- ✓ Electronic Theft
- ✓ Information Privacy
- ✓ Information Security

Content Risks

- ✓ Illegal Content
- ✓ Harmful Content
- ✓ Harmful Advice

Contact Risks

- ✓ Online Harassment
- ✓ Cyberbullying
- ✓ Illegal interactions
- ✓ Problematic content sharing

Online Marketing

- ✓ Inappropriate or unsuitable products
- ✓ Illegal and Age-restricted products

Electronic Theft

- ✓ Online Fraud
- ✓ Online scam
- ✓ Identify theft

Information Privacy

- ✓ Personal data collection from children

Information Security

- ✓ Malicious code
- ✓ Commercial spyware

How to protect

- ✓ Web Filtering
- ✓ Parental control software
- ✓ Enable safety features
- ✓ Guide kids

Module 187

187.   Word Processing: MS Word

One of the most important application software are the word processors. These software help individuals and companies to prepare digital documents in a proper format. One of the famous word processing software is MS Word, which is included in the Microsoft Office.

Figure 130 is the screen short for windows XP to open MS Word 2007.
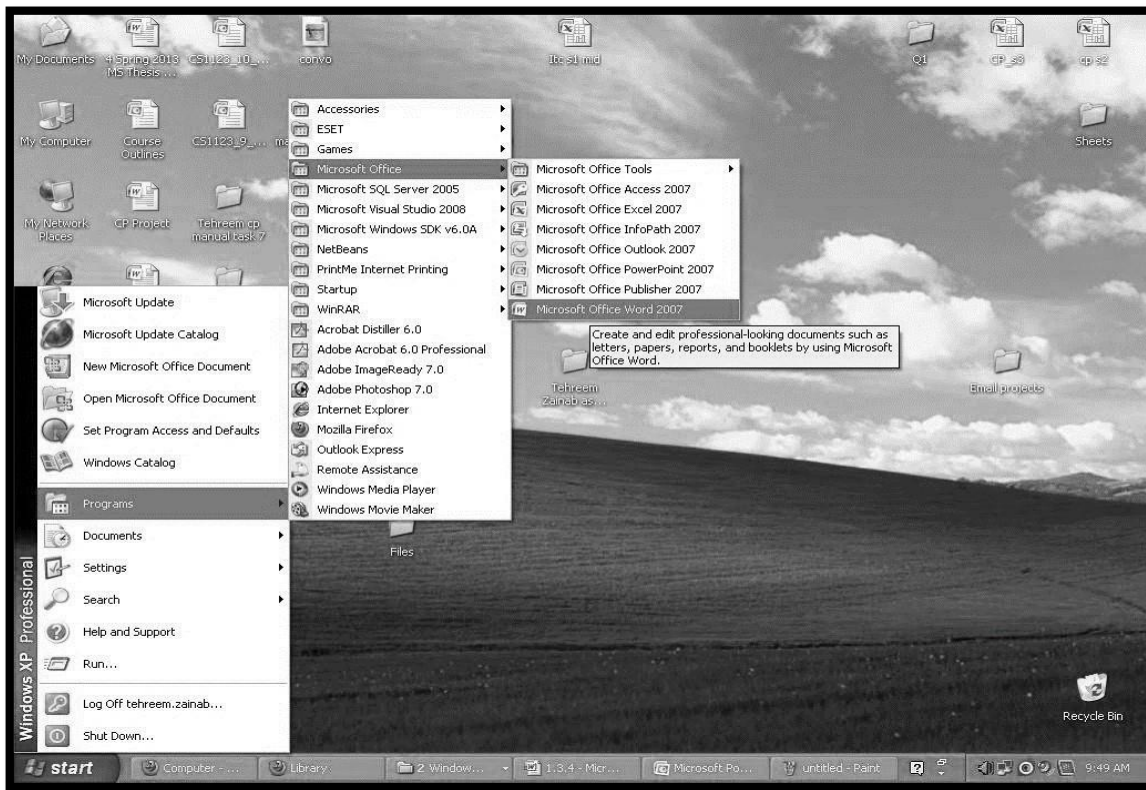
Figure 130: Start Menu to launch MS Word

The Office Button

Figure 130 shows the MS word home ribbon.

Figure 131: MS Word Home ribbon

CS101 updated VU Final term Past Paper Last 5 Year
Created by: VU APEX Campus Teachers Team