**Cyber Security Challenges and Techniques**

**Abstract**

**Cyber Security plays an important role in the field of information technology .Securing the information have become one of the biggest challenges in the present day. When ever we think about the cyber security the first thing that comes to our mind is ‘cyber crimes’ which are increasing immensely day by day. Various Governments and companies are taking many measures in order to prevent these cyber crimes. Besides various measures cyber security is still a very big concern to many. This paper mainly focuses on challenges faced by cyber security on the latest technologies .It also focuses on latest about the cyber security techniques, ethics and the trends changing the face of cyber security. Cyber Security plays an important role in the field of information technology .Securing the information have become one of the biggest challenges in the present day. When ever we think about the cyber security the first thing that comes to our mind is ‘cyber crimes’ which are increasing immensely day by day. Various Governments and companies are taking many measures in order to prevent these cyber crimes. Besides various measures cyber security is still a very big concern to many. This paper mainly focuses on challenges faced by cyber security on the latest technologies .It also focuses on latest about the cyber security techniques, ethics and the trends changing the face of cyber security.**

**Introduction**

**The process of digitization in all aspects of human life, like healthcare, education, business, etc., has gradually led to the storage of all sorts of information, including sensitive data. Security, is the process of protecting the digitized information from theft or from physical damage while maintaining the confidentiality and availability of information but as technology is growing rapidly, the cybercrime rate also increases both in number and complexity. Even the latest technologies like cloud computing, mobile computing, E-commerce, net banking etc also needs high level of security. Since these technologies hold some important information regarding a person their security has become a must thing. Enhancing cyber security and protecting critical information infrastructures are essential to each nation's security and economic wellbeing. Making the Internet safer (and protecting Internet users) has become integral to the** **development of new services as well as governmental policy. The fight against cyber crime needs a comprehensive and a safer approach**.

**Cybercrime**

**Cybercrime is a term for a crime which uses a PC for robbery and crime of commission.** **The U.S. Department of Justice expands the definition of cyber crime to include any illegal activity that uses a computer for the storage of evidence.** **As day by day technology is playing in major role in a** **person’s life the cyber crimes also will increase along with the technological advances.**

**Cyber Security**

**Cyber security is the application of technologies, processes and controls to protect systems, networks, programs, devices and data from cyber attacks. It's also known as information technology security or electronic information security. The term applies in a variety of contexts, from business to mobile computing Privacy and security of the data will always be top security measures that any organization takes care. We are presently living in a world where all the information is maintained in a digital or a cyber form. Social networking sites provide a space where users feel safe as they interact with friends and family. In the case of home users, cyber-criminals would continue to target social media sites to steal personal data. Not only social networking but also during bank transactions a person must take all the required security measures.**

**Literature survey**

**G.NIKHITA REDDY–G.J.UGANDER REDDY :** **Improving cyber security and protecting critical information infrastructure is important for the security and economic well-being of each country. Safer Internet (and protecting Internet users) have been an important part of the growth of new services and public policy**.

**K M RAJASEKHARAIAH :** **This study presents a brief overview of the cyber security problems raised by modern developments in technology and innovations; the paper is also focused on the latest cyber security strategies, trends and other ethics in cyber security.**

**Effects on cybercrime**

**Loss of sensitive customer data can result in fines and penalties for companies that have failed to protect their customers' data**

**Loss of reputation due to personal information that is revealed. corrupted files due to viruses. long-term debt created resulting in poor credit rating due to online identity theft.**

**One of the main effects of cyber crime on a company is a loss of revenue. This loss can be caused by an outside party who obtains sensitive financial information, using it to withdraw funds from an organization.**

**It can also occur when a business's e-commerce site becomes compromised--while inoperable, valuable income is lost when consumers are unable to use the site.**

**This is one of the main reasons people are involved in cyber-crime. Even after all the educational qualifications in the country they are not getting jobs and hence they are**

**depressed and they see that the average life is a**

**means of survival of internet fraud. Even those**

**who are employed are not paid for months,**

**sometimes years and this can also lead to those involved in cyber-crime.**

**Cyber security techniques**

**Access control and password security**

**The concept of user name and password has been fundamental way of protecting our information. This may be one of the first measures regarding cyber security.**

**Authentication of data**

**The documents that we receive must always be authenticated be before downloading that is it should be checked if it has originated from a trusted and a reliable source and that they are not altered. Authenticating of these documents is usually done by the anti virus software present in the devices. Thus a good anti virus software is also essential to protect the devices from viruses.**

**Malware scanners**

**This is software that usually scans all the files and documents present in the system for malicious code or harmful viruses. Viruses, worms, and Trojan horses are examples of malicious software that are often grouped together and referred to as malware.**

**Firewalls**

**A firewall is a software program or piece of hardware that helps screen out hackers, viruses, and worms that try to reach your computer over the Internet. All messages entering or leaving the internet pass through the firewall present, which examines each message and blocks those that do not meet the specified security criteria. Hence firewalls play an important role in detecting the malware.**

**Anti-virus software**

**Antivirus software is a computer program that detects, prevents, and takes action to disarm or remove malicious software programs, such as viruses and worms. Most antivirus programs include an auto-update feature that enables the program to download profiles of new viruses so that it can check for the new viruses as soon as they are discovered. An anti virus software is a must and basic necessity for every system.**

**Future scope**

**In the next ten years we will have computer security algorithms that will allow us to create specific bots. They will hunt for threats and act against <<bad>> bots. But don’t worry this algorithm will still require human intervention. So the enslavement of humans by artificial intelligence is not foreseen soon. In the next ten years we will see more biometrics and use additional authentication methods with the mobile device we have in our pockets.**

**Conclusion:**