Devila Bakrania

10457590

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Hacking
Review Essay - CS 573 Assignment 2

In today's circumstance hackers are continuously exploring new techniques and skills to attack and gain control of sensitive data for their malicious purpose. Hence it is very important for organizations and people to keep themselves aware about risks and safety. Businesses are attacked many times for their customers' personal and financial information and are often exploited by their own employees, whenever they are angry. Businesses lose billions of dollars every year because of hacking and other cyber-attacks. Many times, the true cost cannot be evaluated because the effects of a security breach can stay for years after the attack. Companies can lose consumer's confidence and cases are filed legally responsible for the loss to their customers.

Companies of all sizes have adopted the cloud technology and open source has become the standard for infrastructure software so we can certainly expect an increase in the number of cyber-attacks based on open source vulnerabilities. Since the code is open, any opportunist can identify and exploit the program through hacking and viruses. Proprietary software companies have team members dedicated to ensuring the security of their software. While it's true that anyone can look at and potentially exploit the code, it's also true that anyone can look at the code to identify potential causes of security breaches and address them immediately. In many cases, using this type of software helps companies save money while also getting a product that is better suited to their needs. Once company learns how to use open source software - and how to mitigate some of the risks associated with it, like many others, may lead to great benefits.

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In my opinion, the work done in this paper is remarkable and in the right direction to keep our systems safe. Although, it doesn't have enough scope because many companies wanted their clients to as developers, programmers or event manager but those people who are belonging or wanted to pursue this field are paid handsome amount of money. It includes –It is an emerging branch so no ethical hacker can ensure by using same technology again and again, so as a result people wanted to develop and research more about this technology. As the growing demands of E-commerce sites many E-commerce marketing companies like Flipkart, Amazon and Ebay will demand more the ethical hackers because of their security concerns, many companies like ISRO, Wipro, IBM wanted their databases not to get leaked and spread related to their productions and profits and loses so they are hiring ethical hackers and paying a good some of money which will increase in future to. Even start-ups companies are also demanding more ethical hackers, so that it doesn't lead to their demolition of company. More advanced software and tools will be used by ethical hackers leads to overall technology development Thus the necessity of ethical hackers is slowly but demandingly being increasing in the field of IT sector day by day. [12]. In response to the various hacking activities being taking place regularly, the various techniques that can be used for preventing the same include: Proper Security Infrastructure, Intrusion detection system, Code review and the security patches. The usage of all the above techniques can help in preventing the leakage of sensitive data, reduces investigation cost as well as the monetary loss/ reputation losses, facilitates detecting the risk early and mitigating the same etc. The various tools that can be used for preventing the hacking are: Honeynet, Anti-viruses, Patches, Password crackers, Vulnerability scanners, Wireless sniffers.

In conclusion, this paper has presented a several ways to hack, also explained the hackers types, insights, recent trends in cyber security however it is limited to ethical users and I disagree at some level because ethical users can use the data for their own purpose too which may be illegal then, however they are to find the loopholes and they work for profitable intentions for others. Most of the advantages and profits of ethical hacking are cleared, but many of them are taken lightly such as Fighting against terrorist attacks such as stealing and frauds, Preventing malicious hackers from gaining access, Prevents leaking of sensitive information that is not authorized to have access to it, Testing your own computer and network security if gained deep knowledge about it, Provides security to banking and financial infrastructures, etc.

Though ethical hacking doesn't have any disadvantages but sometimes it leads to failures and faults which can be exploited as harming personal privacy and sensitive information, Threatening persons with fear for their lives or their lives of families for money, System failures and errors leading to corruption of systems if not properly done. They sometimes use the data for malicious and harmful purposes. Hiring

ethical hackers can be expensive because of their specialized work and some areas of training they need.

After all this discussions, preventing measures from user side is what benefits the user which they should be aware of like keeping mobile phones or system updated & installing antivirus always. Bewaring while shopping online. Always shopping from trusted websites. Finding out your vulnerabilities before cyber criminals do to secure your confidential data for your business perspective, etc. In this day and age where most of the wars are fought online in the form of cyber attacks and cyber ransoms, it has become all the more important for governments, private companies and even everyday users to secure their digital devices from being caught up in it. Recent events like the WannaCry attack in 2017 which was able to generate a financial loss of billions of dollars, have raised concerns about the security of computer systems and stirred the need for more effective malware detection software. The aim of this paper is to bring the awareness and show the insights and techniques of hacking, types of hackers and their goals, advantages, disadvantages of ethical hacking ,hacking tricks, trends in cyber security.

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