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A Study on Different Software Used to Perform Cyber Crime

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Abstract: ***Software used to perform Cyber Crime are the most emerging subject in the field of Forensic Science. Today, the demand of computer and other electronic devices have increased. This creates an increase in Cyber crime and its awareness. This paper provides you vast information about methods of Cyber crime, Software used to perform cyber crime and a research study on them. In this paper you will also learn how can a software and its algorithm perform, what footprints your device left, what are the loopholes which help that software. This will help you for a better understanding of the software which were used to perform cyber crime and how can you prevent yourself from such activities. If you are a Forensic Expert than you will learn about the software tools which are used in computer forensic. I have analyzed many tools and I will share my study in this paper. After reading you will come to know how forensic science expert backup a hard drive, or how hackers steal your information.[1]***
Keywords: Cybercrime, Hacking, Ethical hacking, Virus, Security, Cyber Security, Network Security.

I. INTRODUCTION

Today in this world, Cyber crime was no more an extraordinary term. We all or our loving one have ever faced cyber crime. This is because the number of internet-based devices like Desktop, Laptop, Smartphones and many more have increased. We all have seen the Covid-19 pandemic [14] in which almost everything went online like school classes, office work, interviews, business, banking system, doctor's appointment and much more. This is the latest reality which increase the growth and business of electronic devices in the world. With the increase of those devices and the advancement of Internet and technology humans are depending on those devices, their technology and internet. But it is an unbelievable truth that not even our WIFI password is safe.

What are the things which make cyber crime easy? The answer is less awareness of the people. Today using internet is the need of every user but very few people are aware about the internet and technology, especially how people can misuse this technology. If you install a caller-identification software, you need to give several permissions to that application, including your contacts. Later these contacts get stored in their database, which means your contact data was leaked.

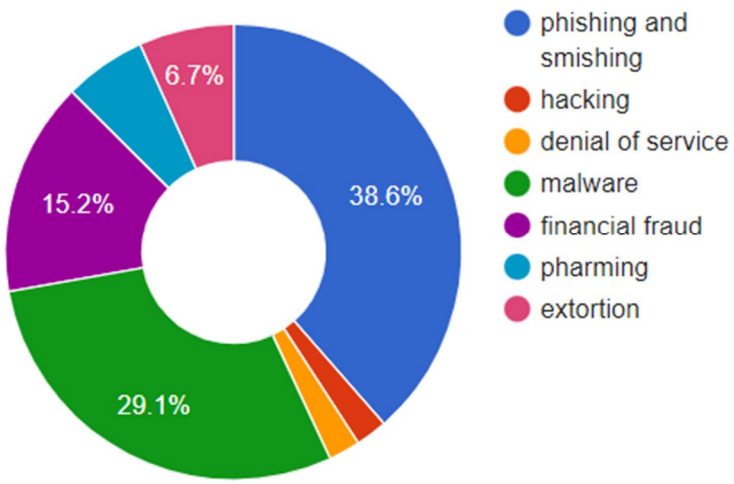


Fig. 1: Static of types of cybercrime happens in 2020 [3]

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In the data above you can see some of the cyber crime types which are phishing and smishing, hacking, denial of service, malware, financial fraud, pharming and extortion. Of which phishing and smishing have a greater percentage.

Here, in this paper I tell you about few software's which are used to perform cyber crime activities. Please accept my study only for your research. Before moving forward, it is important to tell you about some basic terms which you need to understand.

Software is the set of programming instructions, which are used to perform a tasks. These software is used to operate your system. From Tv remote to satellite communication, software are uses everywhere. Software's are consist of programming languages which allow us to do a task. For example:- if you wants to open your camera in your smartphone, then you tap on camera icon. This tap on icon tell the system that you wants to open the camera.

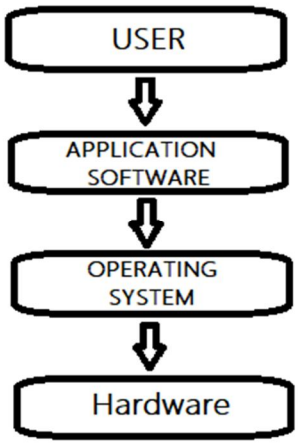


Fig. 2: Showing How User connect with Hardware using Software

Every device which can connect with the internet have an IP address. IP address stands for Internet Protocol address. In easy language you can say it a user address. Private data such as device name, mobile number, storage, device location, SIM card information, camera, microphone, contact, IMEI, IP address are fetch by those softwares.

II. FEW TYPES OF CYBER ATTACKS PERFORM BY SOFTWARES

1) *Software Piracy:* There are many software which are premium software or it was not allowed to use them without paying them or without their permission. Software piracy is a method using which hacker illegally copied the software, or remove its protection and distribute it illegally. Such type of act is known as software piracy [7]. Today software industry is majorly facing this type of attack. In fact if you search on the internet there are many websites which offer mod version of these premium apps.
2) *Phishing:* Phishing is a type of cyber-attack which is mostly used in cyber-crime [1]. Phishing was done to steal user private information like, password, credit card information, login details. It basically fetches the user input from a fake form. This attack was mostly done using a popup window or by sending fake emails.

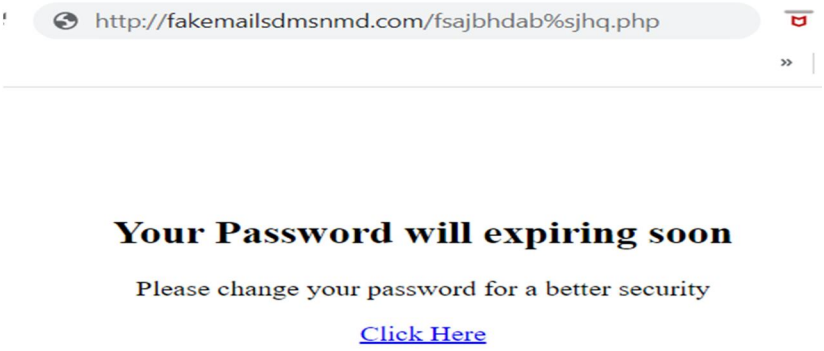


Fig. 3: An Example of Email Phishing

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In Phishing user create a fake page, and ask user to input their details. For example a dummy facebook page is created and shown to you using a popup window. Some user who want to use it fill that form. Every user input will fetch and store to hacker's database. Or you will receive an email that you won a lottery please input your bank account details to get the rewards. Such type of attack are called phishing attack.

3) *Denial of Service:* In DoS attack the criminal send the traffic on a specific website or webpage, so that other users were not able to access that site. Here, the criminal play with the user bandwidth by sending spam mails are by using his bandwidth. The intention of criminal was to disturb the users who are using that website.
4) *Spoofing:* Spoofing is another type of cyber-crime. In this type of attack, the criminal uses software to change its system identity or he will communicate from an unknown source.

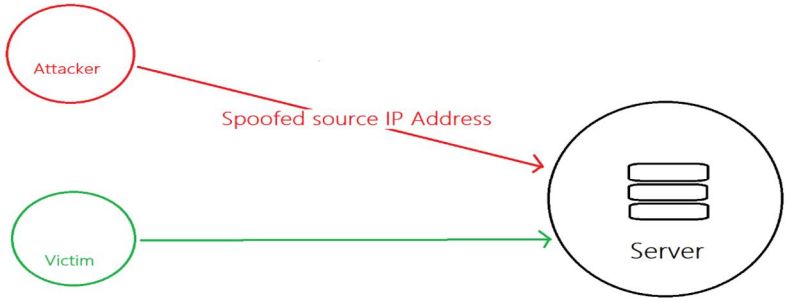


Fig. 4: How Spoofing works

Spoofing can be used in Desktop, smartphone and other internet-based devices. Using spoofing the hacker will manipulate his IP address, DNS, ARP and other details.

III. SOFTWARE USED TO PERFORM CYBER CRIME

1) *Kali Linux:* It is an Open-Source Software that was used by Hackers. Kali Linux was a free OS, it has many tools using which hacker use for security analysis and for doing penetration testing [8]. It was preferred mostly because all codes of Kali Linux was uploaded on Git and hackers use them for their work. In my study it was found that kali Linux was mostly used for security analyses and tweaking. It support multiple languages so if hacker are from any part of the world are able to use it. This open source software is customizable, a user can customize it as per his need.
2) *Ophcrack:* This software is used to crack password. It is a password cracking software used to crack windows password. Ophcrack is completely free to use. Its method is based on rainbow tables. Rainbow table were implemented very efficiently using this software. For simple passwords it has Brute-force module. You can crack Windows, Linux or Unix, Mac OS X and many more passwords. It is also used to crack NTLM and LM hashes. You can save the audit report and export it in CSV format. Ophcrack has a safe and secure GUI. You can use this software on multiple platforms.
3) *EnCase:* Encase is a different type of software. This software was also used in white hat works. Using this software a forensic expert can access a hard drive. All seize hard drives were tested using encase or any similar software. Encase is also used for data recovery process, In court evidence it plays an important role. It is free to download and use and it require no installation. It protect Lx01 and Ex01 files by using AES 256-bit encryption.
4) *Safeback:* Safeback is an advanced forensic tool which is used to retrieve hard drive. It basically create a mirror image of the real data or you can say that it backup the data as a mirror. It is an self authentication computer forensic tool. The data mirrored by this software can easily copy to any pen drive or any magnetic drive. It also get the deleted or erased data. Imagine if you have safe your picture in your smartphone, and later erase them and sold your device. This data was recovered using safeback and similar softwares.
5) *MD5sum:* It is used to verify data integrity. In simple words it is an amazing tool which is used to check if the data was copied or not. It works on 128-bit cryptographic hash.

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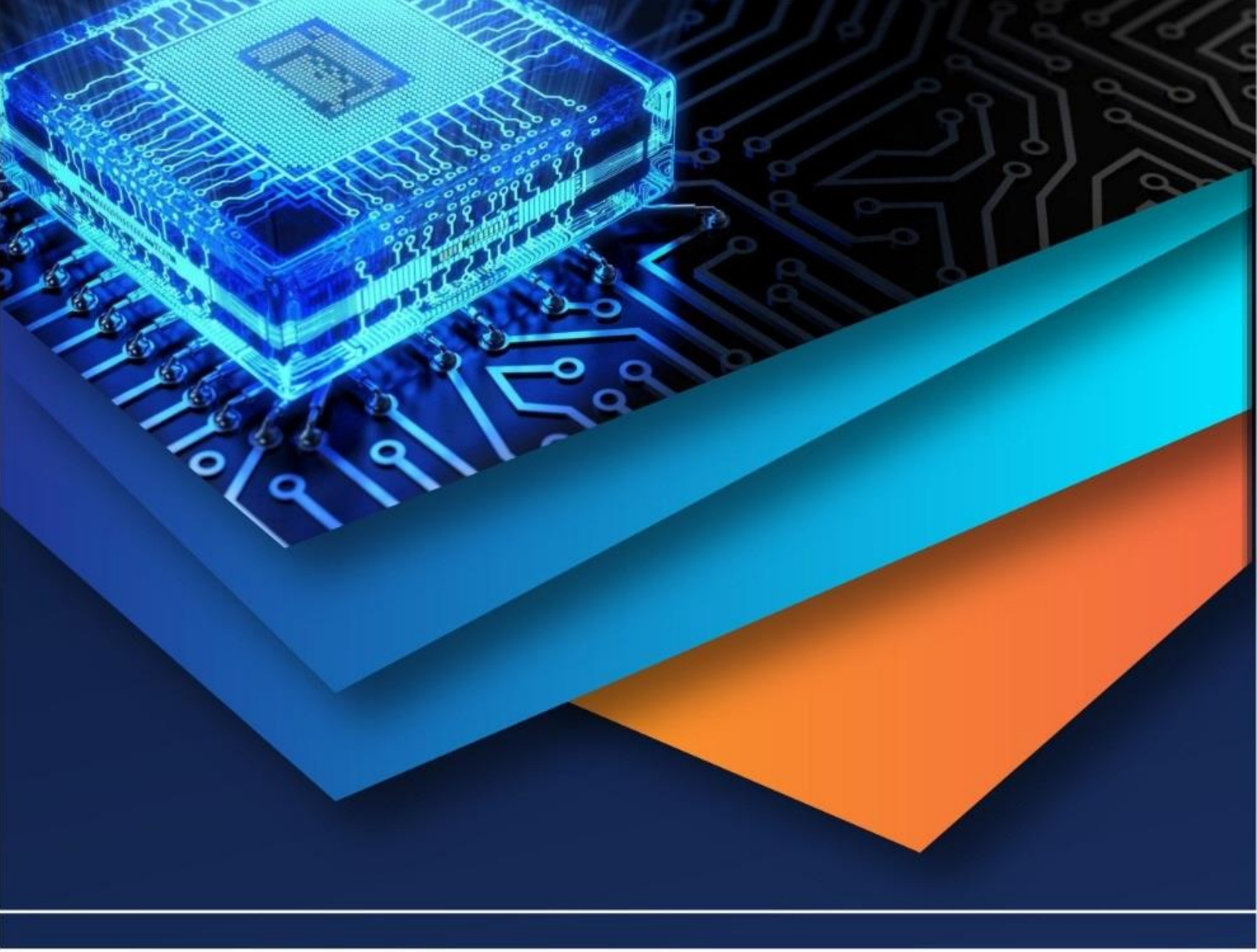
IV. CONCLUSION

Cyber crime has created an anxiety and confusion. And the reason behind it was people are less aware about other side of the technology and internet. It is important to know the device before using it, so that we can keep ourself protected from cyber crime and cyber fraud. I have shared few sodtwares which were used to perform cyber crime. If you are using it in white hat way then it is legal but if you are using it in black hat way then it is illegal. I do my study on several types of cyber attacks which are performed using software. Then I study about the software what are these softwares and how these are used.

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