Applications of Ethical Hacking Techniques to Software Professionals with respect to Behavioral Science

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ABSTRACT

The Information for the organization is an asset which has to be protected from the unauthorized persons and misuse for some other illegal issues, the hacking has been very common on the internet and it has affected the organization in terms of money, resources loss and image loss. The Hacking can also be ethical which can be made for positive use in the net environment. The knowledge of the programmer can be utilized for the security of the software's in the Internet environment. The software professionals like progrmmmers, software analyst, testers are going to benefit by this technique of ethical hacking. The authors have discussed the mind set of the ethical hackers and use of their technical knowledge for the solution of security problems in the network environment. Security of password, login names, financial transactions are the areas of concern for the organizations those dealing online. The activities of the Internet are widely affected by countries policies and rules. The paper highlights on the ethical hacking concepts and application of theses techniques to software professional in order to information security issues. The Hackers though have negative trait of mind the ethical hackers are also human beings which have positive trait of mind which help the professional in Computer field to maintain the security in systems and networks. The hacking is habit of the programmers in the society

Keywords: Ethical Hacker, Network Security, Cracker, Network Testing, Virus.

INTRODUCTION

The Hacking in Computer Area is unavoidable phenomena which can be either applied by negative trait of mind or positive trait of mind person. The Computer and Networks nowadays are affected by Computer Viruses or Network Viruses. These area are concern of the technical persons. The intend to highlight on hacking which can be positively used to make constructive developments in the area and study the behavior of the persons involved in this area.
 Behavior Science deals with the psychology of the person and his or her behavior with respect to herself or himself, with respect to family and with respect to society. The upbringing of the person also makes the effect on personality. No person is good or bad by birth. Various factors are responsible for the personal behavior of the person. In hacking these factors play important role.

Hacking

Hacking term can be explained as-
Hacking refers to the process of breaking into the systems for personal or commercial gains, also with malicious intent which causes server damage and damage to information and assets of the organization.

Types of Hackers

There are different types of hackers as per their mode of operations while hacking the information or resources:
a.   Hacker (n) – These refer to a person who enjoys learning the details of Computer System and stretch their capabilities.
b.   Hacker (v) – Describes the rapid development of new programs or reverse engineering of already existing software to make the code better and efficient.
c.   Cracker – It refers to a person who uses has hacking skills for offensive purposes.
d.   Phreak – A hacker variant with an interest in telephones and telephones systems.
e.   Hactivism – This refers to act of hacking in order to communicate a politically or socially motivated message. An Internet enabled way to practice civil disobedience and protest.

What is Ethical Hacking?

The ethical hacking is also called – attack & penetration testing, white hat hacking or red teaming.
Ethical Hacker looks for the following four basic questions:

1.   What information, locations and systems can an intruder gain access?
2.   What can an intruder do with available information?
3.   What can intruder see on the target?
4.   Does any one at the target system notice the attempts made by intruder?

Characteristic of Ethical Hacking

Ethical Hacking is legal. Permission is obtained from the target, It is part of an overall security program. The ethical hacking allows and identifies vulnerabilities visible from internet at particular point of time. Ethical hackers possess same skills, mindset and tools of hackers but the attacks are done in a non destructive manner.

Classes of Hackers

        a.   Script Kiddie
        b.   Black Hats
        c.   White Hats
        d.   Grey Hats

Classes of Ethical Hackers

        a.   Former Black Hats
        b.   White Hats
        c.   Consulting firms

Why Ethical Hacking?

Ethical hacking is useful for following reasons:

- Protection from Possible External Attacks like social engineering , automated attacks, organizational attacks, accidental breaches in security , viruses, Trojan horses and worms and Denial of Service.
- Ethical Hacking Process involves a) Preparations b) Foot printing c) Enumeration and Finger printing d) Identification of Vulnerabilities f) Attack- Exploit the vulnerabilities.

    We can elaborate the concepts of the ethical hacking process which are widely used to protect the valuable assets and information:

Preparations: This identifies the targets like company websites, mail servers, extranets.

The Contract will be signed with the company who wishes to allow the ethical hacker in the companies systems and resources
- Agreement on protection against any legal issues.
- Contracts on Denial of Services Tests, Social Engineering.
- Time Window for Attacks.
- Total Time for Testing
- Prior Knowledge of the systems.
- Key persons in the company who are made aware of the testing.

Foot printing: In this type of ethical hacking following points are involved

- Collecting as much information about the target like DNS Servers , IP Ranges , Administrative Contacts , Problems revealed by administrator.
- Information Sources like Search engines , forums, databases- whois, ripe, arin, apnic and tools like Ping, traceroute, DIG, nslookup, sam, spade.

Importance of various types of ethical hacks for keeping Information Assets Secure

- ➢ Network Testing
- ➢ System Hardening
- ➢ Application Testing
- ➢ Wireless Network Testing
- ➢ Code Review
- ➢ War Dialing

Advantages of Ethical Hacking

a.   To keep information assets secure
b.   Helps to save money and reputation in the long run
c.   Network testing

Software Professionals and Behavior of the Hackers

The software professional are various programmers and other posts which are involved in IT sector which can be considered as technical and non technical persons in the industry , Though these people are governed by laws of the IT. Some programmers may get involved in hacking business and try to misuse the technology for personal use. The ethical hackers are also technical programmers but who are positive minded and motivated to find out the problems and other technical attracts in the system. Behavior of the hacker is unpredictable and is influenced by the temptations of the power and money. The Ethical hackers follow the ethics of the society and companies are benefited by these programmers.

Role of Ethical Hacker in Internet Environment

The Internet has been directly affected by the various viruses and hackers which affects the information and resources of the systems in the network. The amount spent on the security measures has been increased and is very big concern for those involved in activities of the e-commerce and financial transactions over net. The Ethical hackers will be useful in managing the Internet activities which can increase the reliability and security of the system.

Conclusion

The Hacking has been a common phenomena in the network environment. The hacking can also be legal and ethical. The authors have pointed out the issues of the hacking and how it can be made useful for managing the information resources over the Internet. The use of these techniques can safeguard the passwords , login names and other crucial information over the network it is taken or stolen by some other unauthorized person.

The ethical hackers have positive behavior towards the technology which can be utilized for finding the security attacks and make use of their knowledge for finding the misuse of technology in the computer field. On the science of behavioral sense the human beings are responsible for technological misuse and hacking being term misused now we can apply the techniques of hacking for security purpose.

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