

Ethical Hacking: A Survey

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Abstract: This research paper is being initiated to have the discussion of the ethical hacking to be taught as a course. As the technology is growing the use of internet is also increasing day by day. Also the security is being implemented for the web portals as the hackers are phasing for the information on the internet so they can access others accounts. So the knowledge of Ethical hacking is also required for the websites, servers, organizations and many companies. The internet must be more securable. In this paper I discuss about the teaching of the Ethical Hacking and its issues, because some of the people are in favor of it and some are not in favor of it. I try to find out why the people does not like the Ethical hacking to be taught as course. Functionalities and Responsibilities of Ethical hacker and his limitations while him or she is doing the testing of the system. In the end I provided with the conclusion, which critically analyses the research paper.

Keywords: Enter key words or phrases in alphabetical order, separated by commas.

1. Introduction

Development in computer changes the world and bring many things for humans like E-Commerce, computing, email easy access information, advertisement, etc. But the computer has also the dark side as every new technology did in past. This is Hacking. But the real meaning of hacking is “to do the computer programming at the depth level”. The hacking word is used for people who have the deep knowledge of the computer programming, but later it has different meanings. The new meaning of hacker is given that: Hacker is a person who enter someone websites or company servers or someone personal computer to steal or destroy the information. There are many types of Hackers who hack for fun, game as a challenge and they really don't have interest to steal information. Some people do it to stole or destroy useful information. So there is need of computer security. So that we can be safe and use the technology and don't let it go down for any reason. For the security of our computer we started search the way to get rid out of it where the Ethical hacking take place. Ethical hacking is phenomenon in which we call someone to hack the website or server to remove those things. So that there must no threats later. Then the question arise who will do the Ethical hacking for us. Did we train some professional for this purpose if not then what should we teach to those Ethical hackers. It is right to teach someone hacking for the purpose to stop it. Isn't it interesting? You have to teach the bad thing for good purposes. Teaching Ethical hacking is as important as the computer itself because one day people start hating internet due to hacking and stop hacker from hacking we should educate people in this

regard beside other techniques. I divided my research paper into three categories in first section about the teaching Ethical Hacking and try to give some answer of the question for example: what is Ethical hacking, why we do Ethical hacking, what are the benefits and flaws of teaching ethical hacking, what should be taught in this course and methodologies to teach Ethical? In second section I try to explain who is Ethical hacker is, what he or she do, what are their limitations and responsibilities? And in the last section I give the conclusion of this research paper.

2. Ethical hacking

Ethical hacking is the process like hacking but it is done for the security of the websites or web server or software. It is the process or mechanism used to stop the hackers from hacking the information from web or company servers by removing them from the hole from a system, websites or server so that the hacker can't enter the system by using of these holes because the hackers do search for the loop holes to enter someone system to acquire the information which is useful for them. Ethical hacking is done at the end product development when the product is developed and ready to use. To check the security level of the product, if they have some problem then for removing those from the developed product we perform Ethical hacking. So that when the product released in the market it has less question regarding the security. Ethical hacking must be the part of the development of the product like planning, designing etc. Ethical hacker use same process or techniques like the hacker use but not for destructive purposes. Then they try to find the loop holes in the developed product and tell to the responsible people of the organization and also provide with the solutions to remove those holes from the system. As the growing of the technology the companies, an individual and the big organization want this because no big company can have the survival without providing the services to its customer and vendor. But the govt. organizations, companies and every individual have the threat to be hacked. Big companies use internet for different purposes but they always have the issue of threat that someone may break into their server and implant software that will spread their secret data on the internet and have access to their emails. Even the individual have the same issue about their data like credit card number etc.

3. Should ethical hacking taught as career course

Company have the high security still they are hacked and they not know about this regard how to stop hacking. Mostly

company hire the people with best security to protect their domain, still they are being hacked. This happens because they have the less information about their system. So what can be the best solution to this problem is that the student must be trained and professional to save themselves from other world hackers. It is the responsibility of the computer professional to protect the company web server, software or a govt. organization from hacker. For this a profession must be there which is known as the Ethical hacker same as software engineer and Network engineer. These Ethical hackers must be trained in the universities. I ask some of my friends for Ethical hacking. Some of them are against that if students trained for Ethical hacking and they didn't get the job they might be against the cause. Some who are in favor says that if people are trained they can help a lot to get rid of the hacker. I just provide with the view of the point. I think if there must be criteria for this type of education or training then the skill full ethical hacker will not go away from the correct path and they help the organization and individual to protect data from hackers. This will help to develop interest in the computer technology.

4. Teaching material for ethical hackers

The basic knowledge that Ethical Hacker should have in different field, are:

- Have basic knowledge of ethical and permissible issues.
- Have primary level knowledge of session hacking
- Know about hacking wireless networks
- Should be good in sniff ring.
- Know how to handle virus and worms
- Basic knowledge of cryptography
- Basic knowledge of account
- Know how to perform system hacking
- Knowledge of physical infrastructure hacking
- Know about the web based password breaking procedure
- SQL injection
- Know how to hack Linux
- Knowledge of IP hacking

As all of us knows that there isn't any boundary of any knowledge exist but Ethical Hacker have the knowledge of above mention things. So whenever someone going to design the course for Ethical hacking should mention the above things in mind for a better course for Ethical hackers.

5. Teaching methodology to teach ethical hacking:

As I earlier discuss about the Ethical Hacking must be teach as professional course. We use common ways for teaching the Ethical Hacking. But technology come in existence so the new way of teaching is also implemented. In earlier days there was no option of distance education but as the technology is changing there are many option available after the invention of internet. Now students have started taking the lectures through

internet. There are two ways of teaching which are on campus and off campus. Both have their own criteria and advantages. The method is same of teaching whether it is on campus or off campus having little differences. On campus is good for the regular students because they are the real environment of study. They have the option to learn the behavior of other student that can help him to gain a lot experience. While in off campus are for the students which are doing part time and can't afford to complete their studies but the methodology is the same. Some of the methodology are:

- Use case study
- Conferences
- Written Essay
- Exams
- Discussion Groups
- Interviews
- Multimedia
- Chats
- Role playing

Students must study the different cases and give their views on that. On the basis of this the points are given.

6. Main functions of ethical hacker

When Ethical hacker figure out the security of the system seeks the three basic answers:

- What he want to get from target system.
- Does anyone have the knowledge of hacker's attack on target system
- What a hacker do after getting the information from the target system.

This questions have their importance in them so we can't deny this question more important than others. Hacker spent much time in hack a system during this duration he or she may attacks the system several times. So if anyone have the knowledge of this the hacking can be stopped. Before the evaluation of the system it ask some questions to client like what he or she want to safe., what factors against trying to be safe, how much money and how much time to expend the cause. Answers varies from customer to customer as every customer is not the same and from field to field. So it is the responsibility of Ethical hacker to guide the customer about the security. Ethical need more information about the company like employer names, there designation, network information, about the business run most of the time as hacker can use alternative path to attack.

7. Types of test that an ethical hacker performed:

There are many types of function or test that an Ethical Hacker can performed while testing the system. But the basic testing functions are:

- Testing of local network
- Testing of remote network
- Social engineering test

After all the test performed Ethical Hacker should produce a final report which describe what it found in the system during the evaluation. What holes used to attack and how can be removed from the system. This report is very sensitive to take care. A hacker can easily hack it for hacking and the competitor for the company intelligence. Ethical hacking is the tool for security but it does not mean you are secure. So what these firms do then? I think time to time auditing, making changes, having good administration performance and security knowledge is important part of the firm's or company security system. A single fault in these methods may lead to harm. As every new technology with benefits have the some disadvantages. But these disadvantages changes with the passage of time. Every organization should have the alert all the time for the attacks so that they must have chance to handle it

8. Conclusion

To test the security and the other functions is not new. But earlier mostly no one knows about the Ethical hacking and even

about hacking. But as the time passes people are more concern about their security of their data. As Ethical hacking is a security tool for securing the data it is not the solution to the problem you cannot sit and relax against after using this tool. So you must produce to have good Ethical hackers to have the solution of the problem. Having time to time assessment, prepared interface recognition, good system administration. So that Ethical hacker can help them while securing their data from hackers as hackers are phishing for their data. So Ethical Hacker is the option to better understand their security system, but it's in the hand of organization that he places the right people.

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