



Disasters caused by Hackers and Cybercrime: An Action Plan to educate students to increase cyber security

By:

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Software problems can cause disasters

- These could be accidental or intentional.
- For example, the problems in the Boeing 737 MAX software have been blamed for the crash of the Lion Air and the Ethiopian airlines planes recently. This led to all 737 MAX planes being grounded at present all around the world.
- In this paper, I will focus on intentional software problems.

Cybercrime



- Cybercrime is a crime that involves a computer and a network. The computer may have been used in the commission of a crime or it may be the target.
- Most of you might be familiar with cybercrimes already, you heard about hackers, about robberies, viruses and things like this.
- But not everyone knows how to protect themselves against the cybercrimes.

Cyber Security (1/3)

Cyber security includes the techniques of protecting computers, networks, programs and data from unauthorized access or attacks that are aimed for exploitation.

1. Application Security
2. Disaster Recovery
3. Network Security
4. Information Security



Cyber Security (2/3)



Application Security

Measures that are taken during the development life-cycle to protect applications from threats.

Disaster Recovery

Planning a process for disaster recovery and coming back to the normal business as quickly as possible after an attack.

Cyber Security (3/3)



Network Security

To recognise the threats and stop them from entering or spreading on the network.

Information Security

To protect privacy and information from unauthorized access

These beliefs result in disasters

- *I am not important and no one is looking for me*
- *I don't have anything anyone would want*
- *I can't stop them even if I want to*

Hackers

- White hat hackers: computer security specialists who break into protected systems to test their security.
- Grey hat hackers: a computer security expert who may sometimes violate laws
- Black hat hackers: a hacker who violates computer security for maliciousness or personal gain.

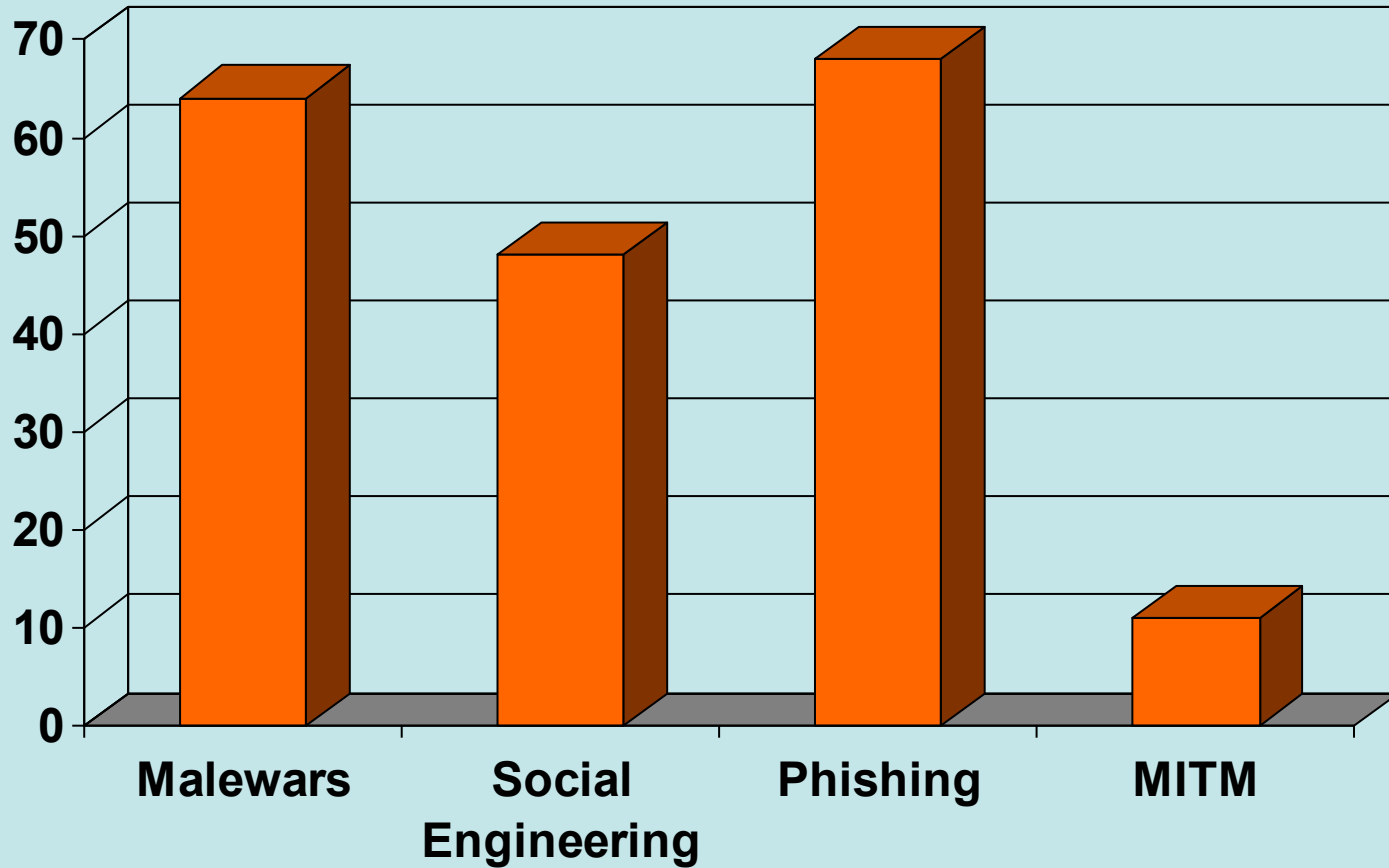


Motives for hacking

- Greed
- Challenge
- Fame and recognition
- Curiosity
- Ideology (Political, religious)



4 common Cyber Attacks



Most common types of cyber attacks

- MITM (Man In The Middle) attacks
- Phishing
- Social Engineering
- MalWares (Viruses, Worms, Trojans)



MITM, Phishing, Social Engineering

MITM: is an attack where the hacker secretly relays and possibly alters the communication between two servers who believe they are directly communicating with each other.

In Phishing an attacker masquerades as a popular entity or person in an email or other communication channels to distribute links or attachments that can lead to a MITM attack.

Social Engineering is to receive personal information such as passwords or IP address, directly from the victim.

Malwares



Malware is a virus that is a piece of code is capable of copying itself and infecting other .exe files on the target computer, it can destroy data or damage the system.

Worms mostly don't infect other programs on the computer, they spread on the target system, use the memory and slow down the CPU.

Trojans are so much alike viruses, the difference is that a Trojan never make a copy of itself, they make a backdoor so the attacker can full access your computer, for thieving data and identities.

Don't Be A Victim

- There are effective ways that reduce the risk of getting hacked:



https://

More Solutions

- To keep your system safe from malware you should install an anti-virus software and keep it updated, do not open unauthorized Emails and unknown links.
- Do not install cracked programs, only authorized resources are reliable.
- Using strong Passwords (more than 8 letters, combination of capitals and small letters and signs), changing passwords once in a month.
- Use virtual drivers can also reduce the risk of getting hacked.

The Problem

In Iran students never learn anything about cyber security in schools. They use internet everyday, by their laptops, PCs and cell phones without being aware of the threats.

And its dangerous, its like giving someone a car and letting him drive without teaching him how to drive.

I therefore propose an action plan to increase students' awareness in order to get familiar to importance of cyber security :

Rationale of my action plan

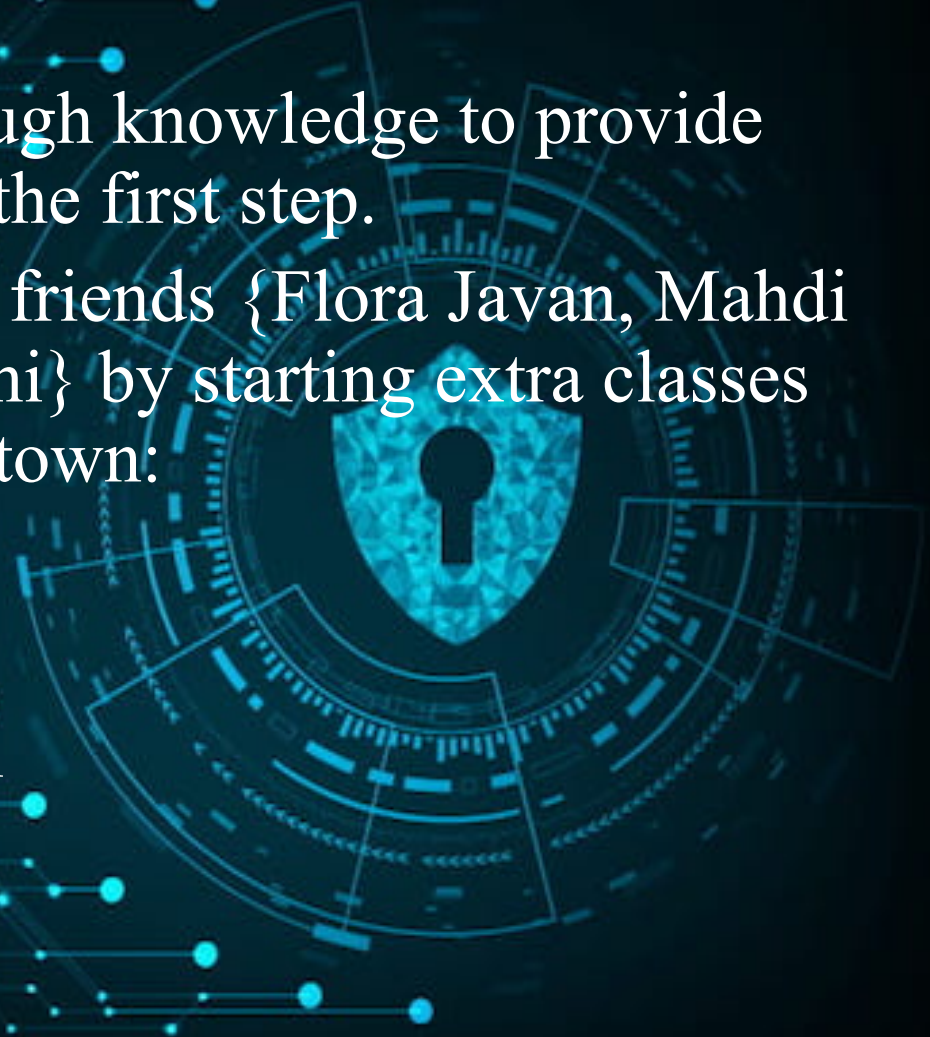
- We can decrease the cybercrimes damage rate significantly by spreading cyber security culture by education.
- We already have seen lots of disasters caused by cybercrimes, and more will occur unless we educate everyone to lower the risk.

The team and the target

As a person who has enough knowledge to provide basic lessons I can make the first step.

I will work with 3 of my friends {Flora Javan, Mahdi Jalilian, Mahshad Gholami} by starting extra classes in 3 schools in our home town:

- Sama High School
- Shahid Sani high School
- Modarresi Middle School



Budget

Because we are volunteers we do not have a monetary budget for most items, however we will provide an estimate of the budget, including teaching hours, in our final report for educational authorities to consider in decisions on the scaling up of this pilot program.

Labour (Volunteers)	0
Transport to Schools	0
Class materials	32 \$
Feedback Survey	0

Potential Partners

We can send our recommendation to Ministry of Education to add some extra classes to schools about cyber security. There is a chance for it to be accepted, cause new ideas are usually welcomed in Educational system. Hopefully we can have these classes in Karaj and if we have good feedbacks maybe one day we would have this classes all over the country.

Timeline (2019)



April: Preparing the Plan

May: Start Cyber security classes in 3 schools in my hometown

June: Make report and have external review

July: I will send my recommendation to Ministry of Education

Potential Challenges

- Convincing responsible persons and authorities that Cyber security is important and it needs to be added to educational topics in schools.
- Because of the gender separation in schools, female students may not get the permission to have classes in Boy's high schools, so we added a male IT student to also try out classes in Boy's School.

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