

# Security

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# Course Objective

The objective of this course is to provide an introduction to the basic concepts of computer security, which will provide the necessary basis for ongoing studies and starting professional activities in the area of computer security

# Security overview

No chain is stronger than its weakest link



\*The chain is no weaker than its strongest link\*  
Photo by ToHell, 2003-09-23 in Slagsta, SE

# The areas to investigate

- ▶ Network Security
- ▶ Information/Data/Application Security
- ▶ System Security

# Security Usability



Security mechanisms must be comprehensible and acceptable

# Security on the Internet

- ▶ You are exposed naked on the Internet

# Attacks

## ▶ Fraud

- ▶ Internet fraud does not require the technical expertise that hacking requires.
- ▶ On-line commerce is a great opportunity for fraud.

## ▶ Types of Fraud

- ▶ Investment offers through E-mail. E.g.
  - ▶ Subject: You can make a lot of money with a minimal investment.
  - ▶ (Relative of some deceased Nigerian Rich person needs your help to transfer a large some of money out of Nigeria; and you will get your share. But first you should pay an amount to cover the tax and some other expenses )

## ▶ Investment Advice

- ▶ A person is paid to recommend a companies stocks/products.

Pump and Dump schemes

(A con Artist purchases a large amount of worthless stocks. Then;

# Attacks

- ▶ Method 1
  - ▶ Artificially inflates the value e.g by circulating rumours on chat rooms that the stock is about to go up
- ▶ Method 2
  - ▶ Push the stock on as many people as possible. The more people competing to buy the stock the higher its price will rise.)
  - ▶ The Con Artist has already bought a large amount of the stock very cheap. When the price goes significantly high he will dump the stock.
- ▶ Auction fraud: e.g on E-Bay:
  - ▶ Failure to send the merchandise
  - ▶ Send something of lesser value
  - ▶ Failure to send in timely manner



# Attacks

- ▶ Identity theft

- ▶ Obtain credit Card on someone else's name. Get driver's license.

- ▶ Phishing

- ▶ The process of convincing the victim to provide his personal information. e.g by sending an email saying its from victims bank and the bank needs victims personal info. the attacker suggests the victim to click on the link which takes the victim to a site which looks like the bank website but its a fake phishing site. The victim enters his username and password.

- ▶ Cross-site scripting

- ▶ The U.S. Department of Justice defines identity theft in this manner

“Identity theft and identity fraud are terms used to refer to all types of crime in which someone wrongfully obtains and uses another person’s personal data in some way that involves fraud or deception, typically for economic gain.”

# Social Engineering



Dear Receiver

**You have just received an Irish virus.**

Since we are not so technologically advanced in Ireland,

**This is MANUAL virus.**

Please delete all the files on your hard disk yourself  
and send this mail to everyone you know.

**That'd be grand.**

**Tanx**

**Paddy O'Hacker at [paddy@bejaisus.com](mailto:paddy@bejaisus.com)**

# Protection

- ▶ Against investment Fraud
  - ▶ Only invest with well known brokers
  - ▶ Avoid it, if it sounds too good to be true
- ▶ Against identity theft
  - ▶ Restrict the amount of personal information you make available
  - ▶ Do not provide your personal information unless absolutely necessary.
  - ▶ Destroy document that has personal information on it (dumpster diving)
  - ▶ Check your credit frequently
- ▶ What about the cookies the websites store on our computers ?
- ▶ Secure your Browser: Browser security settings