

Nature of Computing

Chapter 10 – Computer Security
and Risks



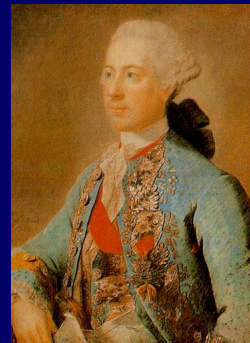
Austrian
Empress
Maria
Theresa



Kempelen's Amazing Chess-
Playing Machine



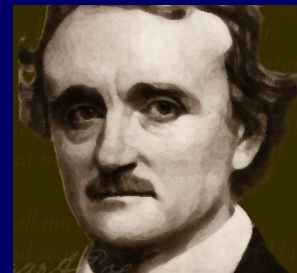
Emperor
Joseph II



Napoleon
Bonaparte

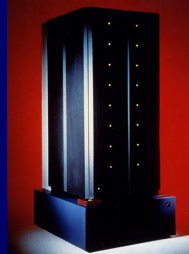


Edgar Allan Poe





Deep Blue vs Kasparov 1997



Computer Crime

- ❑ 2001 Survey – 85% of businesses had a security breach
- ❑ Estimated loss = \$377 million
- ❑ Each Year: billions lost
- ❑ Most crime by company insiders, exploiting loopholes
- ❑ Many companies cover up, rather than publicize their losses



Types of Computer Crime

- ❑ Stealing data (e.g. Credit Card numbers)
- ❑ Theft of computers
- ❑ Identity theft – two thirds of ID theft begin with email (“Phishing”)



Reducing Risks

- ❑ Reduce physical access
 - Hide you laptop
 - Take it with you
 - Don't leave in library
- ❑ Use secure passwords (not just words)
- ❑ Use Firewalls



Other Precautions

- ❑ Backups
 - No matter what precautions you take, something could still go wrong
 - Protect your valuable data
 - Offsite backups
- ❑ UPS – Uninterruptible Power Supply
 - Cheap – About \$60
 - Protects from power spikes, outages
 - Can shut down computer for you



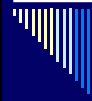
Computer Security

- ❑ Crime
- ❑ Cryptography
- ❑ Security vs. Privacy
- ❑ Ethics



Cryptography

- Public Key Cryptography
- Private Key
- Public Key



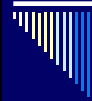
Security vs. Privacy – p405

- Employers may read email
- ISP's have right to read email
- Phone systems must be capable of being tapped by FBI
- GUID – Global Unique Identifier
- GPS, Cell phones & 911 calls



Computer Ethics – p 407

- Know the rules and the law
- Don't assume it's okay if it's legal
- Think scenarios
- Get wisdom from others – talk about it
- Make yourself proud
- Golden Rule
- Take the long view



Artificial Intelligence?

- Is the soul immaterial?
- Does it require a soul in order to be intelligent?
- What if it were possible, would you make an intelligent robot?