Cyber Security

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1. **Data Security**
2. **Web Security**
3. **Authentication**
4. **Integrity**
5. **Viruses, Worms, Trojans**
6. **Spam**
7. **Denial of Service**
8. **Phishing, spoofing**

1. Data Security

Cryptography

- symmetric encryption
- public-key encryption

Authorization systems

- administer the granting and revoking of privileges to resources

Statistical database security

- inference control

Most theoretical; basis for much of cyber security

2. Web Security

Security of web content

Integrity of web content

Tracing of web / web-delivered content

Viruses, Worms, Trojans

Spam

Denial of Service

Phishing, spoofing

3. Authentication

Pass words

Biometric techniques

- **Finger prints**
- **Hand prints**
- **Iris scan**
- **Retina scan**
- **Infrared scan**
- **…**

4. Integrity

Change of content, the Pravda problem, defacing web sites

5. Viruses, Worms, Trojans

Viruses exploit vulnerabilities

buffer overflow, etc.

Worms exploit stupidity

social engineering

6. Spam

Problem:

One user's spam is another user's desirable e-mail

7. Denial of Service

Frequently launched from multiple (subverted) sites

Difficult to distinguish between heavy demand and DoS

8. Phishing, spoofing

Aspects of social engineering

Conclusion

Solutions of some type exist for all technical problems

Whether they are acceptable to users is a different issue