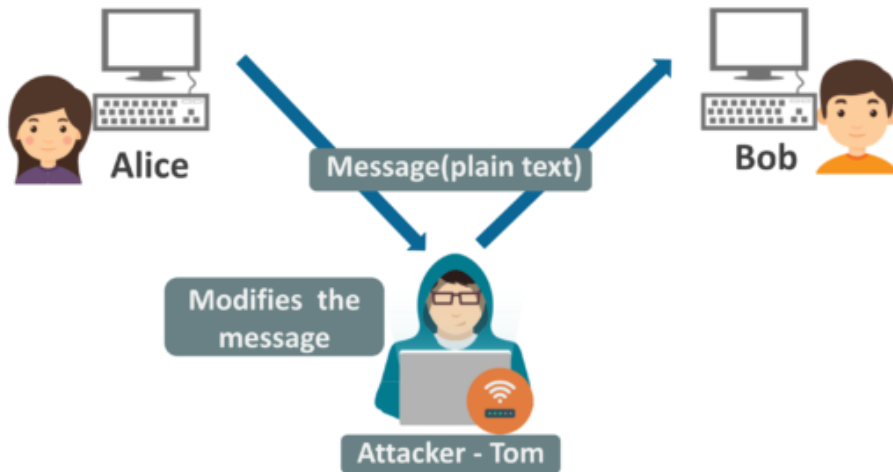# Information Assurance & Security 2

Importance of Information Security

What is Security?

- Security is about
  - Honest user
  - Dishonest Attacker
  - How the Attacker
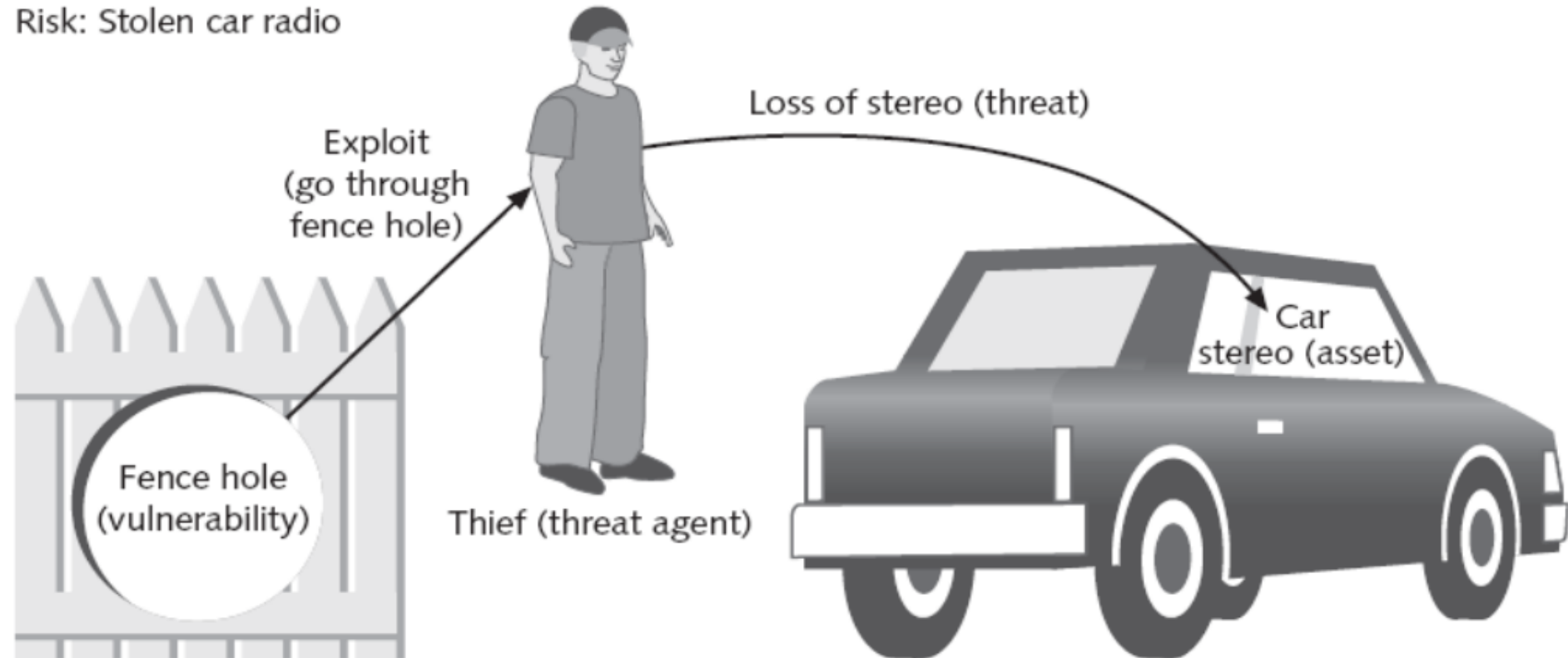   - Disrupts honest user's use of the system (Integrity, Availability)

Network Attacker – Intercepts and controls network communication

Web Attacker – Sets up malicious site visited by victim; no control of network

OS Attacker – Controls malicious files and applications

Information Security Terminology (continued)

Risk: Stolen car radio

Exploit (go through fence hole)

Loss of stereo (threat)

Fence hole (vulnerability)

Thief (threat agent)

Car stereo (asset)

Information Security Terminology (continued)

Term	Example in Amanda's Scenario	Example in Information Security
Asset	Car stereo	Employee database
Threat	Steal stereo from car	Steal data
Threat agent	Thief	Attacker, virus, flood
Vulnerability	Hole in fence	Software defect
Exploit	Climb through hole in fence	Send virus to unprotected e-mail server
Risk	The likelihood that a thief will exploit the hole	The likelihood that an attacker will exploit the software bug

Importance of Information Security

- Preventing data theft
  - Security is often associated with theft prevention
  - The theft of data is one of the largest causes of financial loss due to an attack
  - Individuals are often victims of data thievery
- Thwarting identity theft
  - Identity theft involves using someone's personal information to establish bank or credit card accounts
    - Cards are then left unpaid, leaving the victim with the debts and ruining their credit rating

Importance of Information Security

- Avoiding legal consequences
  - A number of federal and state laws have been enacted to protect the privacy of electronic data
    - The Health Insurance Portability and Accountability Act of 1996 (HIPAA)
    - The Sarbanes-Oxley Act of 2002 (Sarbox)
    - The Gramm-Leach-Bliley Act (GLBA)
    - USA Patriot Act (2001)
    - The California Database Security Breach Act (2003)
    - Children's Online Privacy Protection Act of 1998 (COPPA)

Importance of Information Security

- Maintaining Productivity
  - Cleaning up after an attack diverts resources such as time and money away from normal activities

Number Total Employees	Average Hourly Salary	Number of Employees to Combat Attack	Hours Required to Stop Attack and Clean Up	Total Lost Salaries	Total Lost Hours of Productivity
100	$25	1	48	$4,066	81
250	$25	3	72	$17,050	300
500	$30	5	80	$28,333	483
1000	$30	10	96	$220,000	1,293

Cost of attacks

Importance of Information Security

- Foiling cyberterrorism
  - **Cyberterrorism**
    - Attacks by terrorist groups using computer technology and the Internet
  - Utility telecommunications, and financial services companies are considered prime target of cyberterrorists