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SECURITY IN COMPUTING, FIFTH EDITION

Chapter 1: Introduction

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Objectives for Chapter 1

- Define *computer security* as well as basic computer security terms
- Introduce the C-I-A Triad
- Introduce basic access control terminology
- Explain basic threats, vulnerabilities, and attacks
- Show how controls map to threats

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What Is Computer Security?


- The protection of the assets of a computer system
 - Hardware
 - Software
 - Data

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Assets



Hardware:

- Computer
- Devices (disk drives, memory, printer)
- Network gear

Software:

- Operating system
- Utilities (antivirus)
- Commercial applications (word processing, photo editing)
- Individual applications

Data:

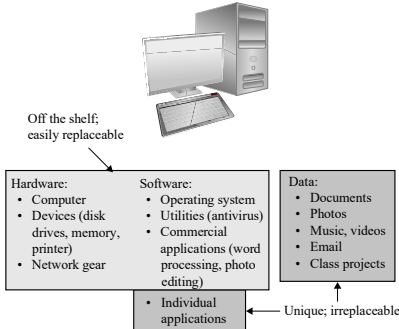
- Documents
- Photos
- Music, videos
- Email
- Class projects

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Values of Assets



Hardware:

- Computer
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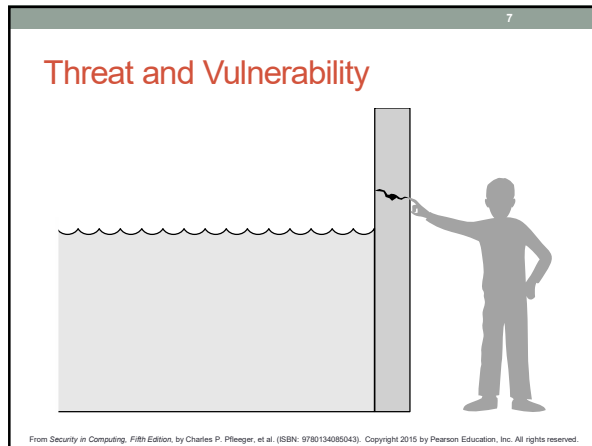
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Basic Terms

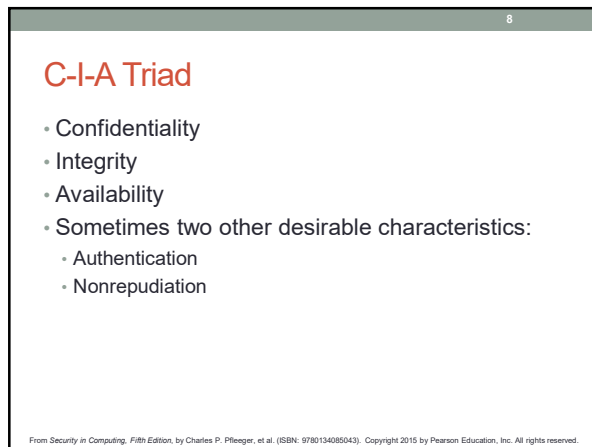
- Vulnerability
- Threat
- Attack
- Countermeasure or control

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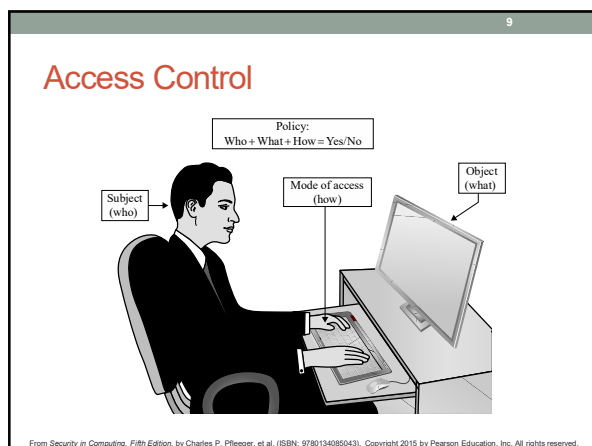
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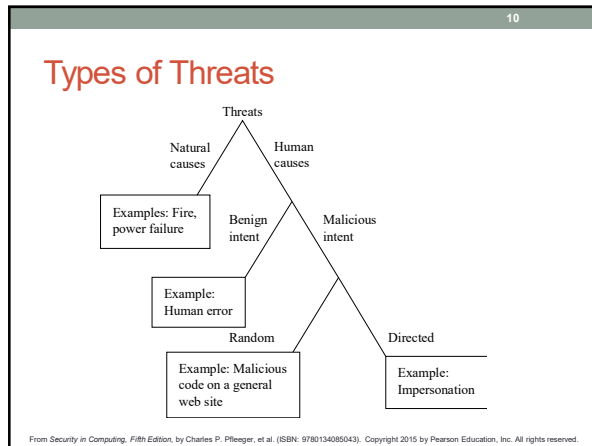
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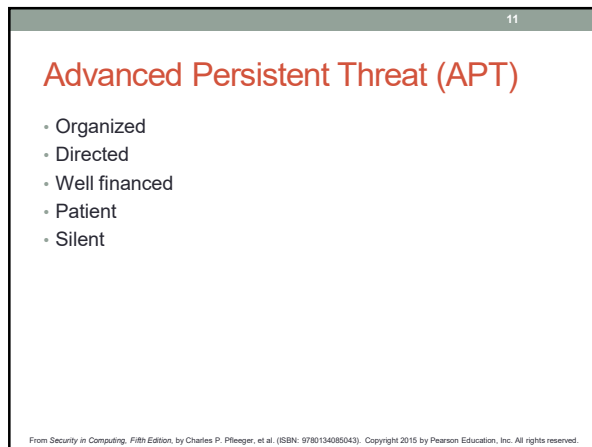
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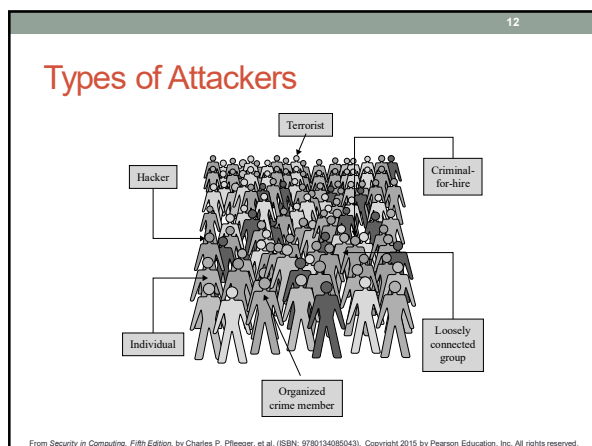
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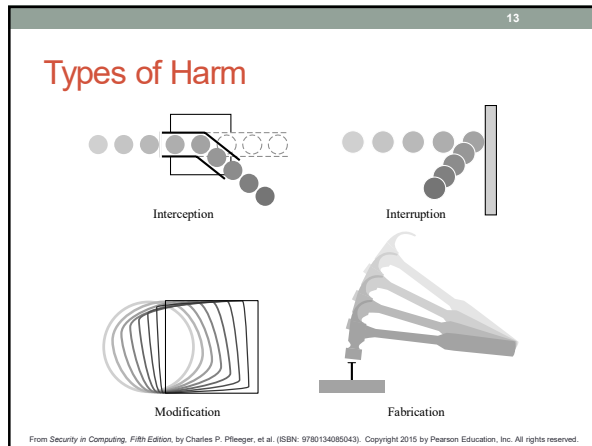
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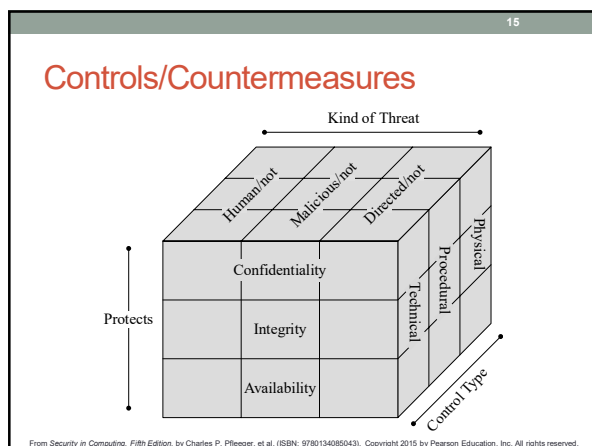
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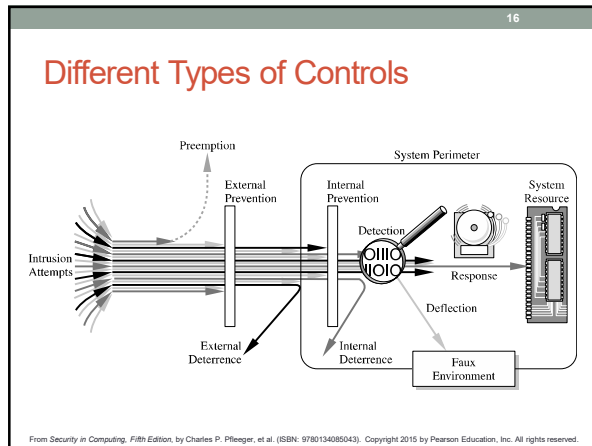
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Summary

- Vulnerabilities are weaknesses in a system; threats exploit those weaknesses; controls protect those weaknesses from exploitation
- Confidentiality, integrity, and availability are the three basic security primitives
- Different attackers pose different kinds of threats based on their capabilities and motivations
- Different controls address different threats; controls come in many flavors and can exist at various points in the system

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