

# CS 465

## Introduction

# Weakest Link Property

- ▶ A security system is only as strong as its weakest link


# Is This System Secure?

- ▶ Common question
  - Wrong question to ask
- ▶ Security begins by understanding the threats and the attackers
  - Secure from whom?
  - Secure from what?

# Attack Trees

- ▶ An ad-hoc method to reasoning about the threats to a system
- ▶ Hierarchical tree with the root node as the goal of an attacker
  - Child nodes contain all the ways to accomplish the goal of the parent node

# Three Facets to Security

- ▶ Prevention
  - ▶ Detection
  - ▶ Reaction
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# Security Needs

- ▶ Confidentiality
- ▶ Integrity
- ▶ Access Control
  - Authentication
  - Authorization
- ▶ Non-repudiation
- ▶ Availability

