**Slide 1**

## Administrivia

- (None.)

**Slide 2**

## Use Cases — Basic Ideas

- Actors — users of the system. Usually humans, but not always.

- Use cases — what happens when actors interact with the system. Together, the use cases should describe all the functionality to be provided.

- Each use case collects possible sequences of actions ("scenarios") relating to a goal.

  ATM example — several possible scenarios for "withdraw money", right? normal withdrawal, incorrect PIN, insufficient funds, etc.

- Probably best to start with prose — for each use case, a name, plus a short description if needed. As analysis continues, fill in details of scenario(s).

**Slide 3**

## Use Cases — Elements of Prose Description

- Name (short but descriptive).

- Main success scenario — sequence of numbered steps, each an element of the interaction between actor and system.

- Extensions — alternatives for some steps. E.g., if step 2 is "customer enters valid PIN", there would be an extension 2a for "customer enters invalid PIN". Or can represent other scenarios as "alternatives".

- Other elements can be added if they seem useful — preconditions, guarantees, triggers.

**Slide 4**

## Use Case — Example Format

**Use Case — Withdrawal**

**Main Scenario**

1. Customer places card in card slot.

2. System prompts for PIN.

3. Customer enters PIN.

4. System verifies that card and PIN are valid and prompts user . . . .

. . .

**Alternative: Card Rejected**

4. System determines that card or PIN is invalid. . . .

**Alternative: Insufficient Funds**

## Use Case Diagrams — Basic Ideas

- Draw use cases as ovals, actors as stick figures, system as box enclosing use cases.

- Optionally add "include" ("uses"), "extend", generalization.

**Slide 5**

## ATM Example

- "System" will include machine itself and whatever is needed to communicate with the bank.

- Actors? Customer (a.k.a. account holder), maintenance technician.

- Consider four use cases — withdrawal, deposit, balance check, maintenance. Diagram as sketched last time.

**Slide 6**

- Try writing prose descriptions of first three (at board, in groups).

# Minute Essay

- What questions do you have at this point? about the problem, what you are supposed to be doing, etc.?

**Slide 7**