XP, Agile & Software Requirements
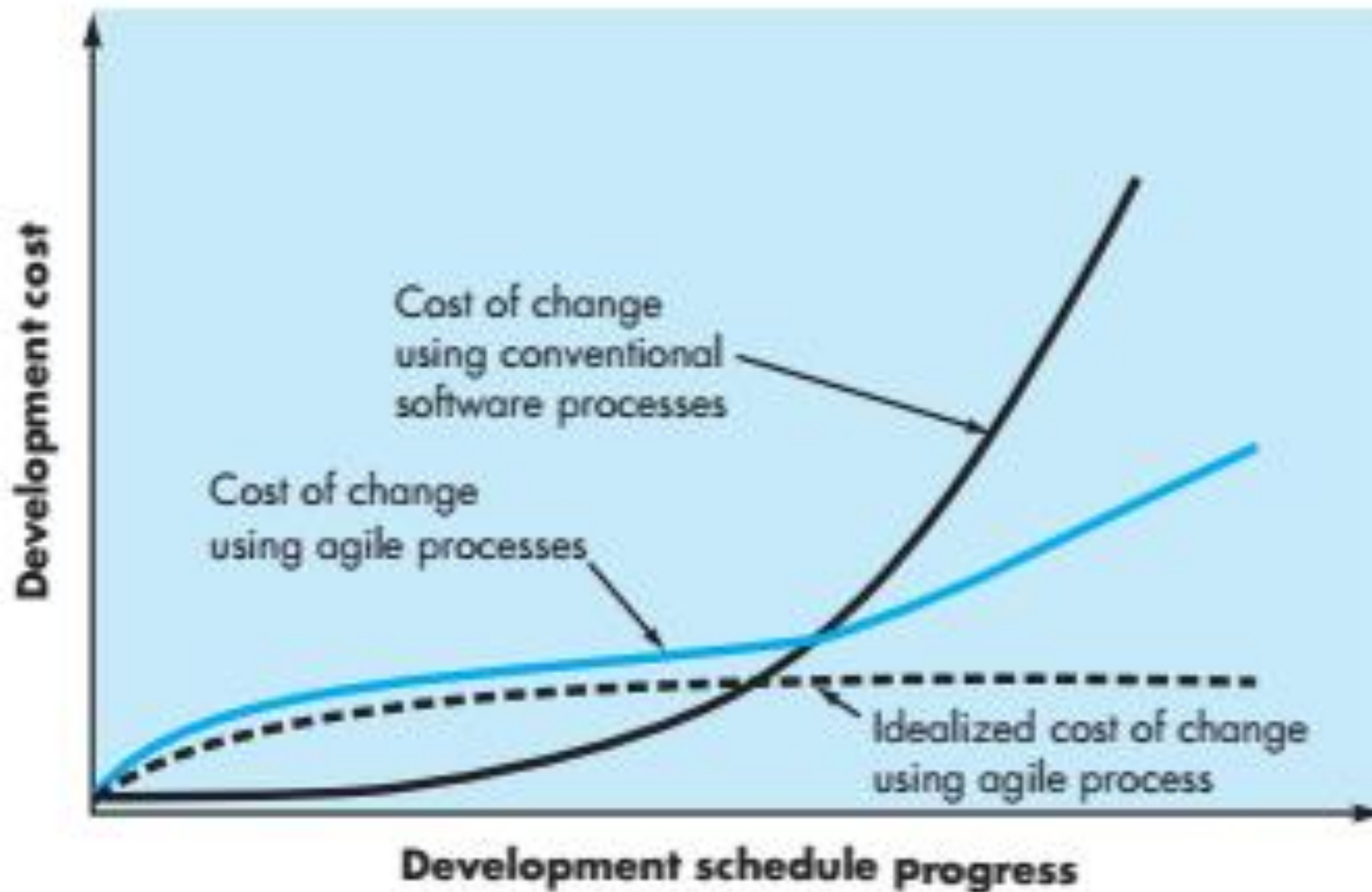
Jamal Madni

CECS 445

Lecture 2: January 28th, 2021
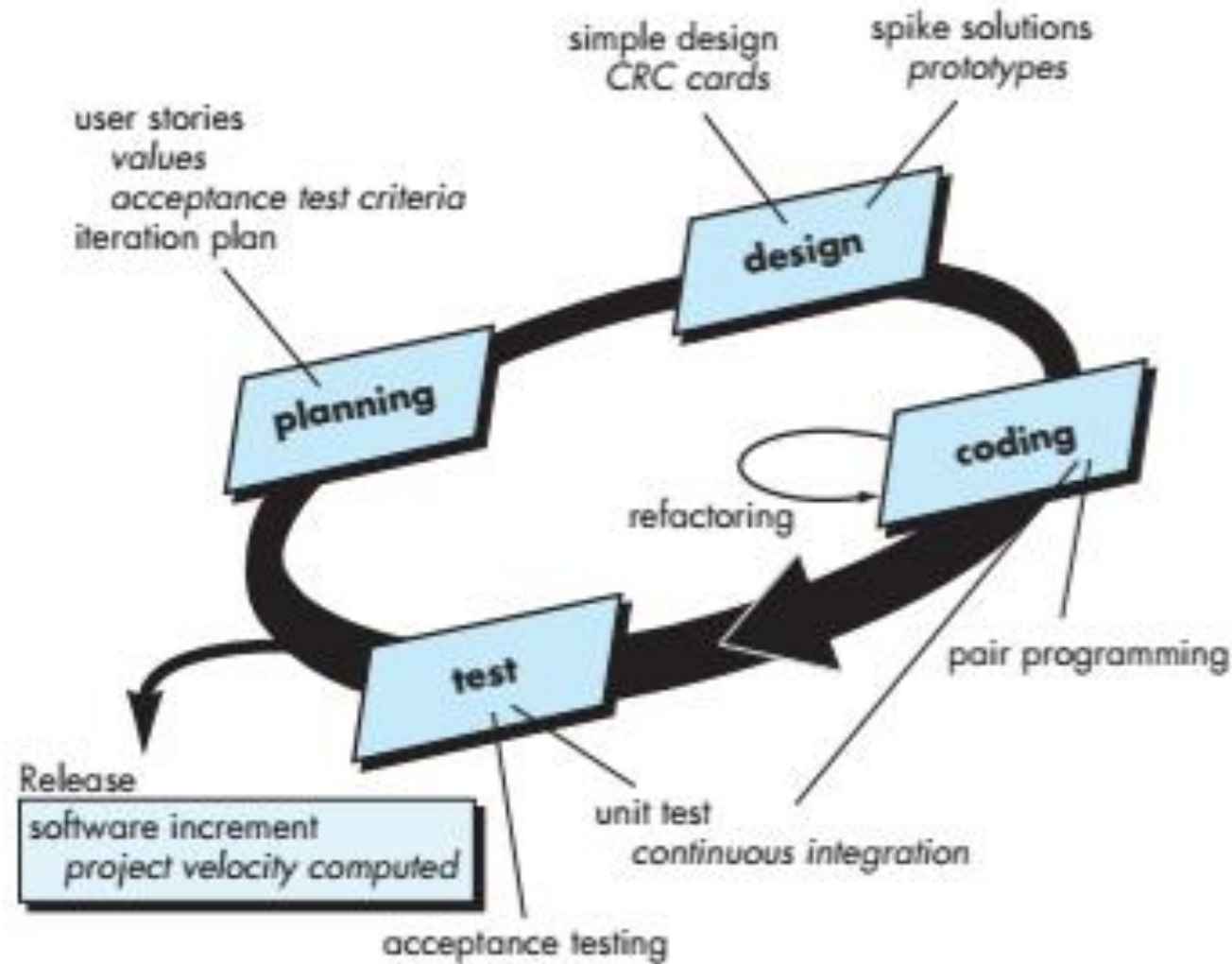
Value of Agile
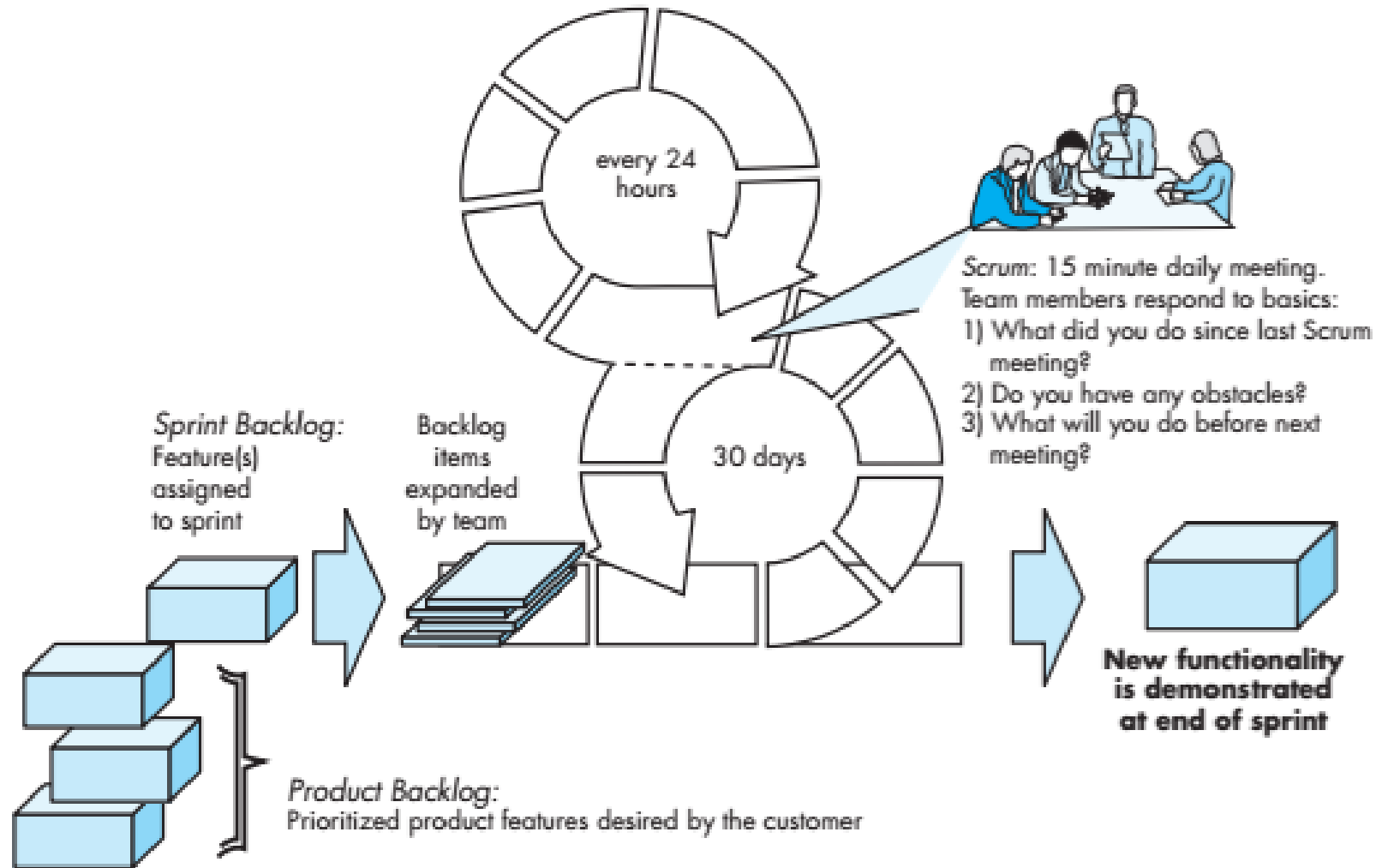

Cost of change using conventional software processes

Cost of change using agile processes

Idealized cost of change using agile process

Development cost

Development schedule progress

WAIT BUT WHY

- Customer priorities unpredictable

- Design with Coding
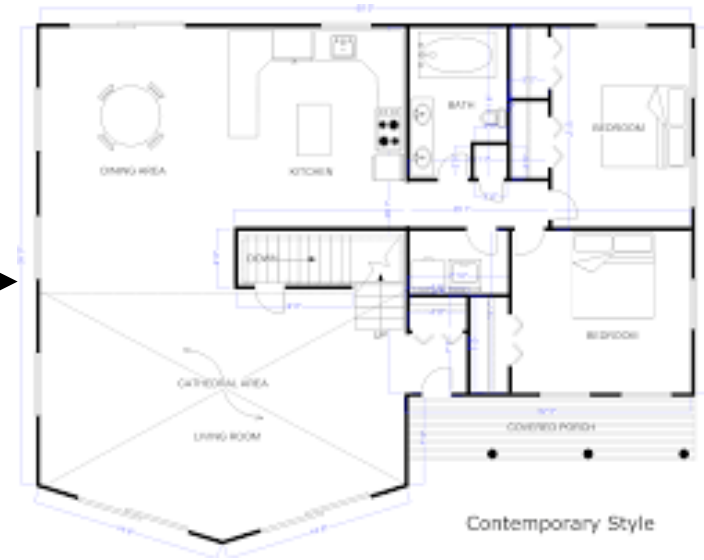
- Pareto Principle

Extreme Programming (XP)

user stories
values
acceptance test criteria
iteration plan

simple design
CRC cards

spike solutions
prototypes

design

planning

refactoring

coding

test

pair programming

Release
software increment
project velocity computed

unit test
continuous integration

acceptance testing

Scrum Process Flow

Scrum Master's Ultimate Job: Translate!

Stories
"The What"

Requirements
"The How"

User Story Templates

Title:	Priority:	Estimate:

User Story:

As a [description of user],

I want [functionality]

so that [benefit].

Acceptance Criteria:

Given [how things begin]

When [action taken]

Then [outcome of taking action]

○ Story ID: Story Title:

User Story: Importance:

As a: <role>

I want: <some goal>

Estimate:

So that: <some reason>

Acceptance Criteria   Type:

And I know I am done when: ☐ Search
                                               ☐ Workflow
                                               ☐ Manage Data
                                               ☐ Payment
                                               ☐ Report/ View

User Story Examples

1.1 Time registration portal

Actors:	Project manager: The person that is responsible for the project
	Project member: A person working on the project

1.1.1 As a Project manager

User story ID	I want to…	so that…
1.	Add project members to my project	the project members can register hours on the project
2.	View report on total hours spent on the project	I can track the project and see if we are on budget

1.1.2 As a Project member

User story ID	I want to…	so that…
3.	Register hours on a project	my project manager know how much time I have spent on the project
4.	View a weekly report on total hours spent	I can see how much I have been working

As a customer, I want to be able to search for flights between two cities to see which ones have the best price and route.

Estimate: 1.0 points

Priority: 2 - High

Example Story Card

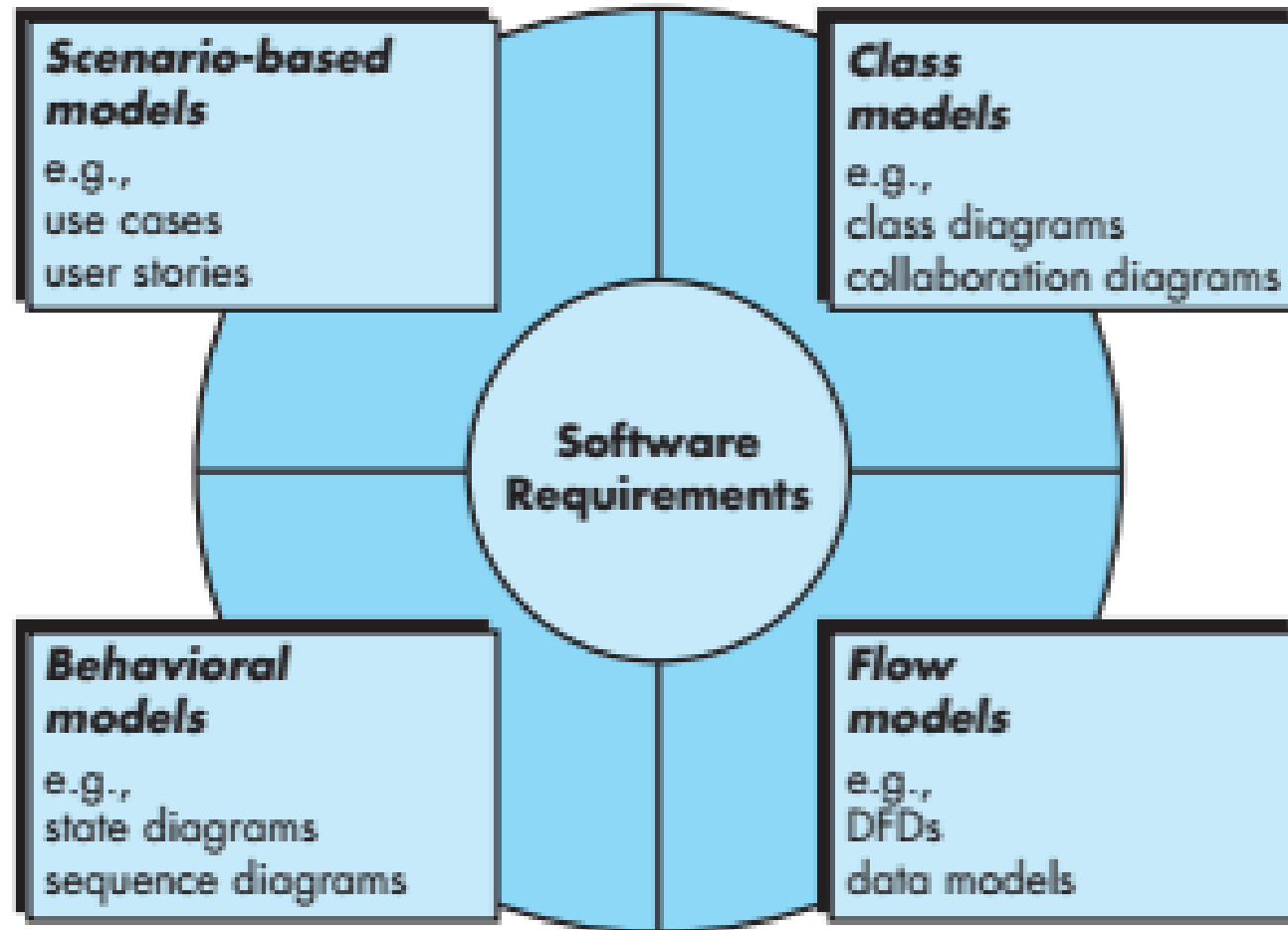| Title:	Customer Inter Account Transfer
Value Statement:	As a bank customer, I want to transfer funds between my linked accounts, So that I can fund my credit card.
Acceptance Criteria:	*Acceptance Criterion 1:* Given that the account is has sufficient funds When the customer requests an inter account transfer Then ensure the source account is debited AND the target account is credited. *Acceptance Criterion 2:* Given that the account is overdrawn, When the customer requests an inter account transfer Then ensure the rejection message is displayed And ensure the money is not transferred.
Definition of Done:	• Unit Tests Passed • Acceptance Criteria Met • Code Reviewed • Functional Tests Passed • Non-Functional Requirements Met • Product Owner Accepts User Story
Owner:	MR I Owner
Iteration:	Unscheduled
Estimate:	5 Points

User Stories Backlog
2 cards

Report content

As a **logged-in user**, I want to be able to report unsuitable content, so that the website admin can review and/or remove the content.
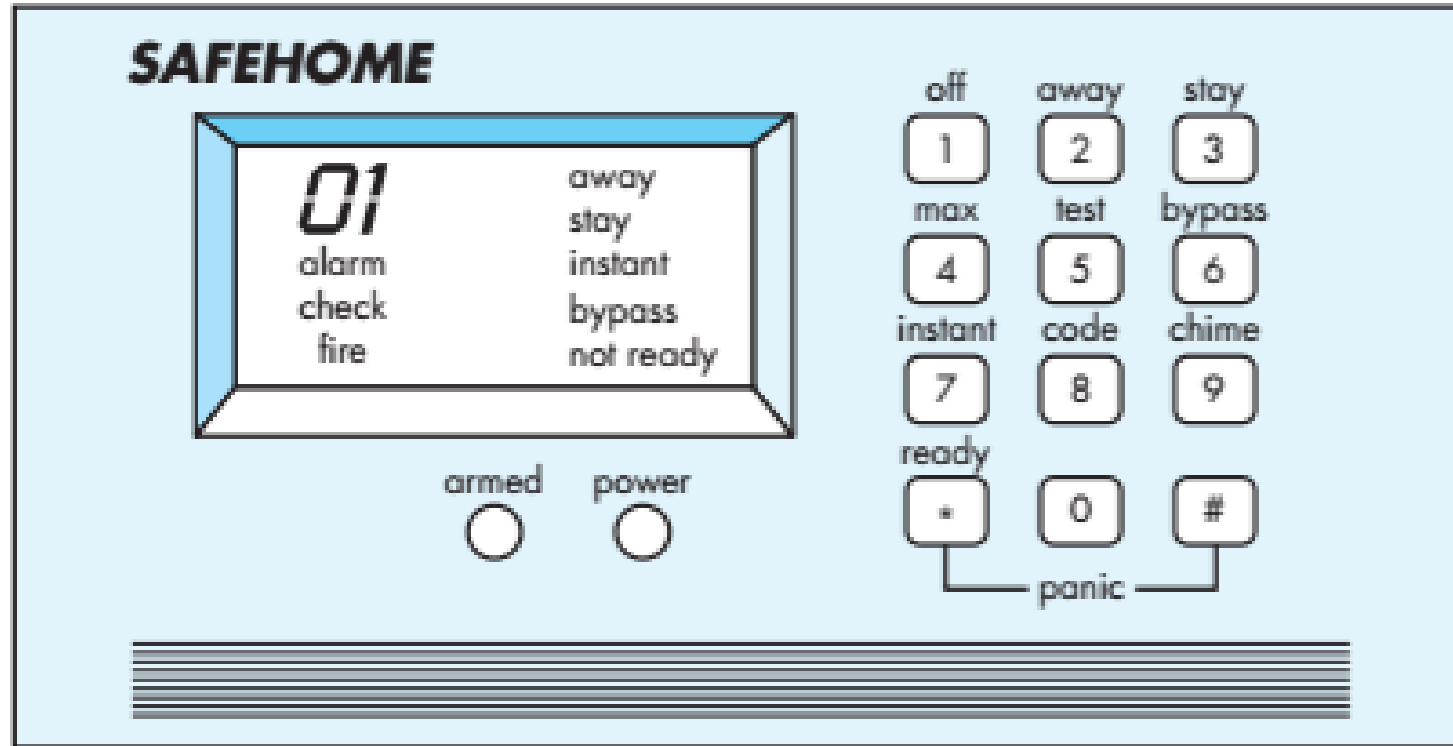
Acceptance criteria

Given that I'm a logged-in user, when I click on the Report button at the bottom of the article, then the system will submit a message to the website administrator that the article has been flagged for unsuitable content and the system shows the "Thanks for your report!" message.
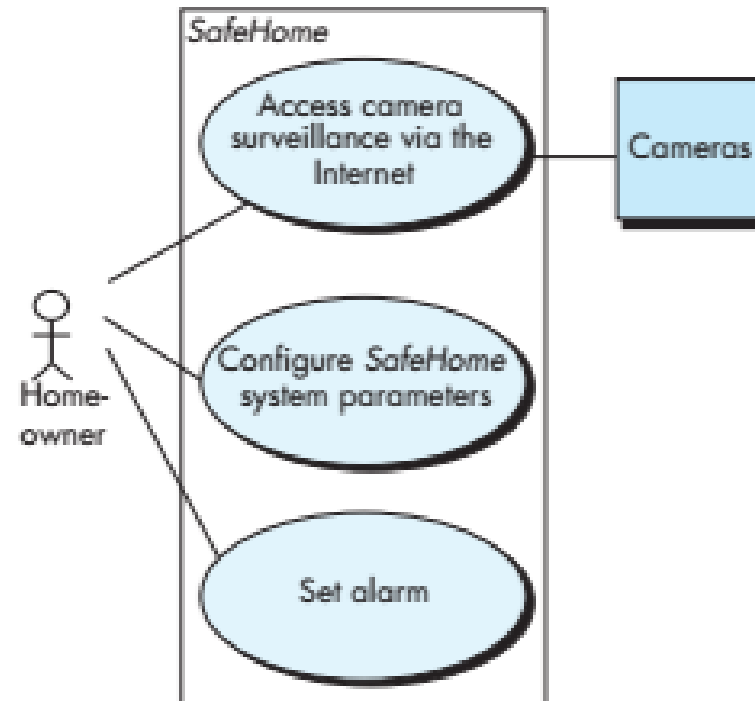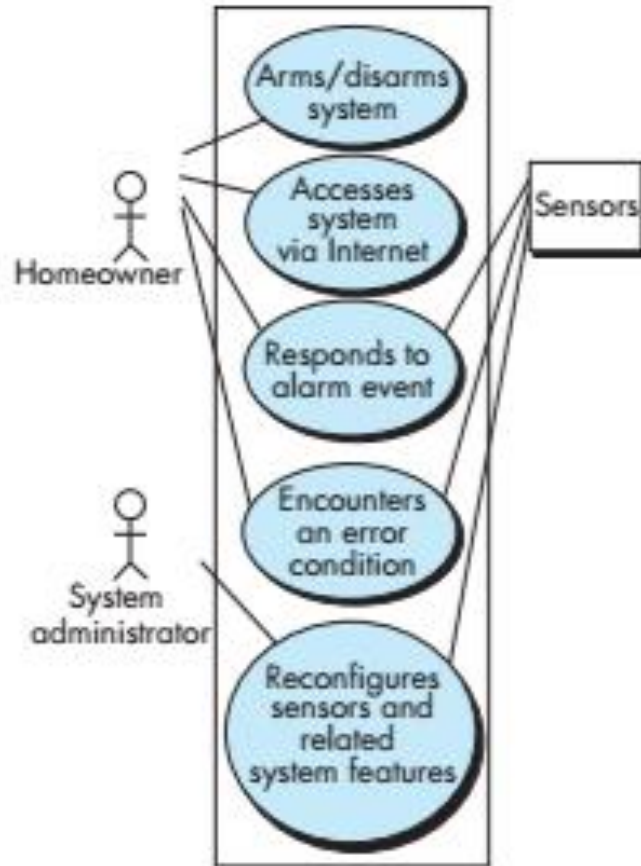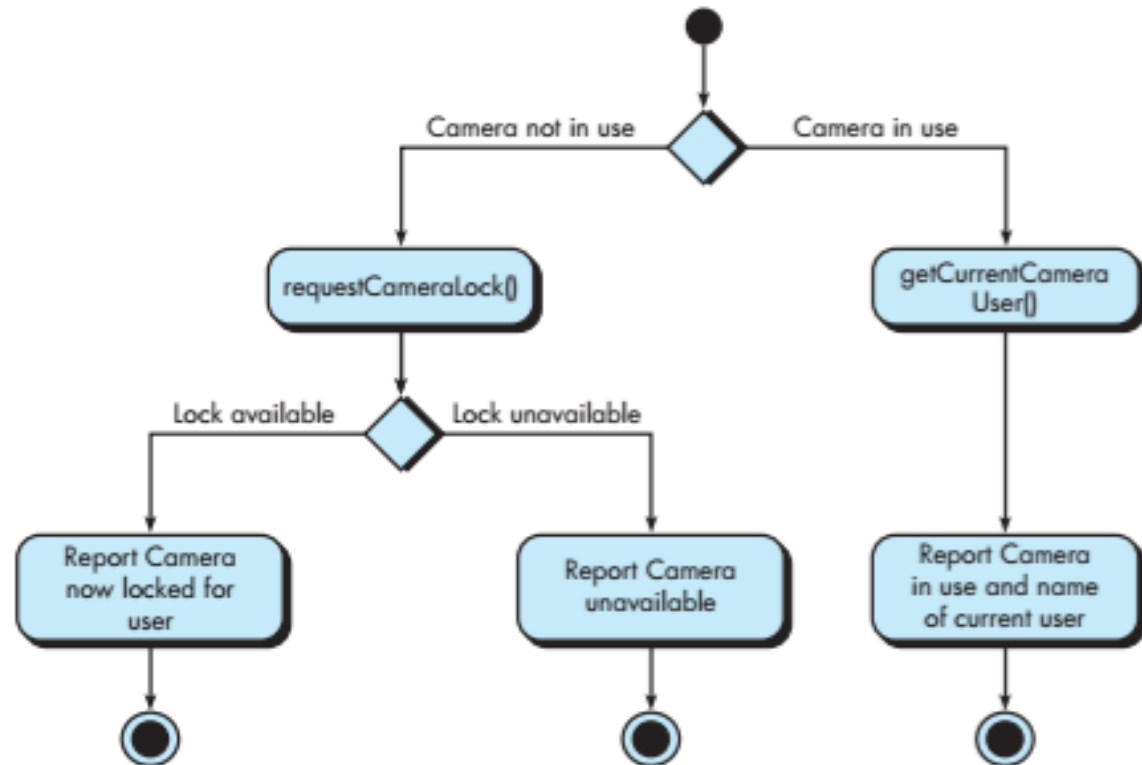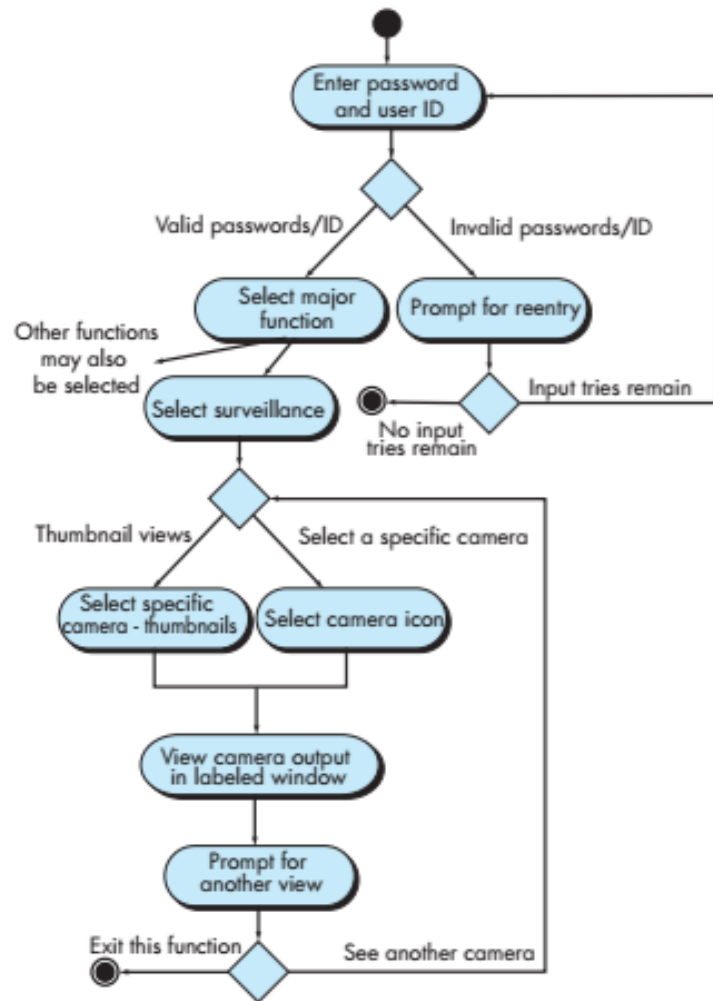
Software Requirements

Guiding Example

"As I homeowner, I want a security system control panel so I can customize protection of my home."

1. The homeowner observes the *SafeHome* control panel (Figure 8.1) to determine if the system is ready for input. If the system is not ready, a *not ready* message is displayed on the LCD display, and the homeowner must physically close windows or doors so that the *not ready* message disappears. [A *not ready* message implies that a sensor is open; i.e., that a door or window is open.]

2. The homeowner uses the keypad to key in a four-digit password. The password is compared with the valid password stored in the system. If the password is incorrect, the control panel will beep once and reset itself for additional input. If the password is correct, the control panel awaits further action.

3. The homeowner selects and keys in *stay* or *away* (see Figure 8.1) to activate the system. *Stay* activates only perimeter sensors (inside motion detecting sensors are deactivated). *Away* activates all sensors.

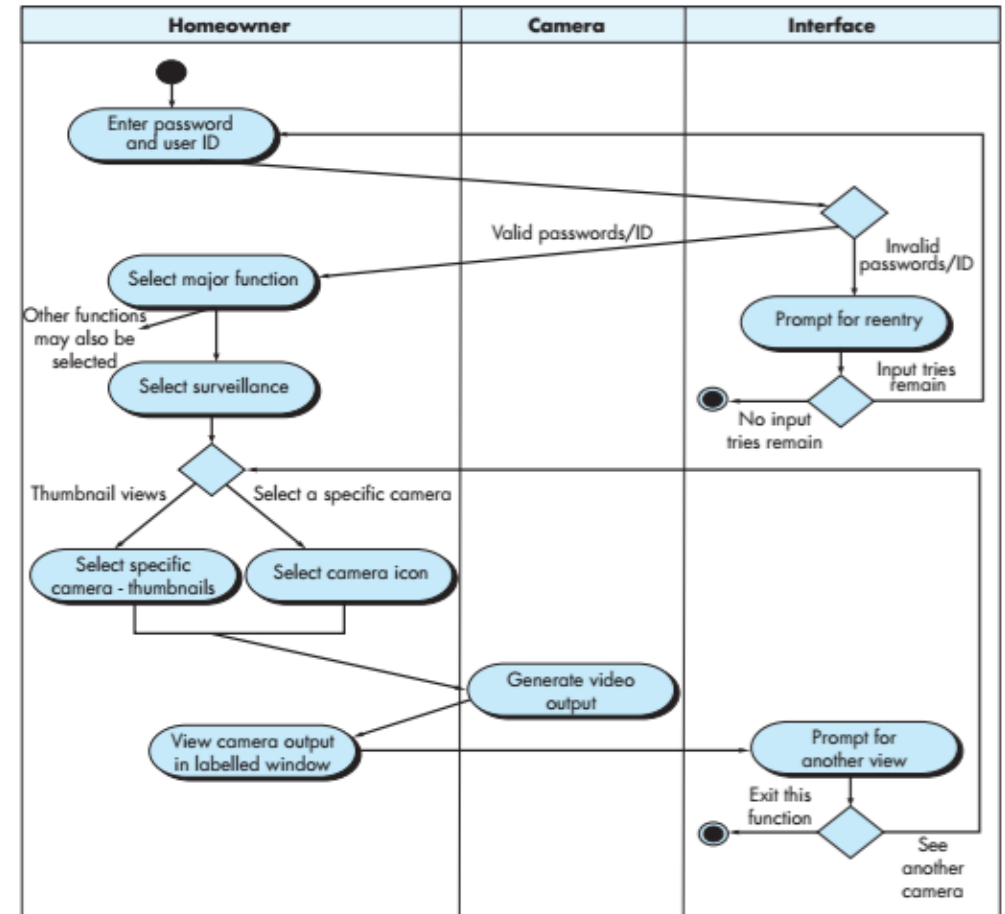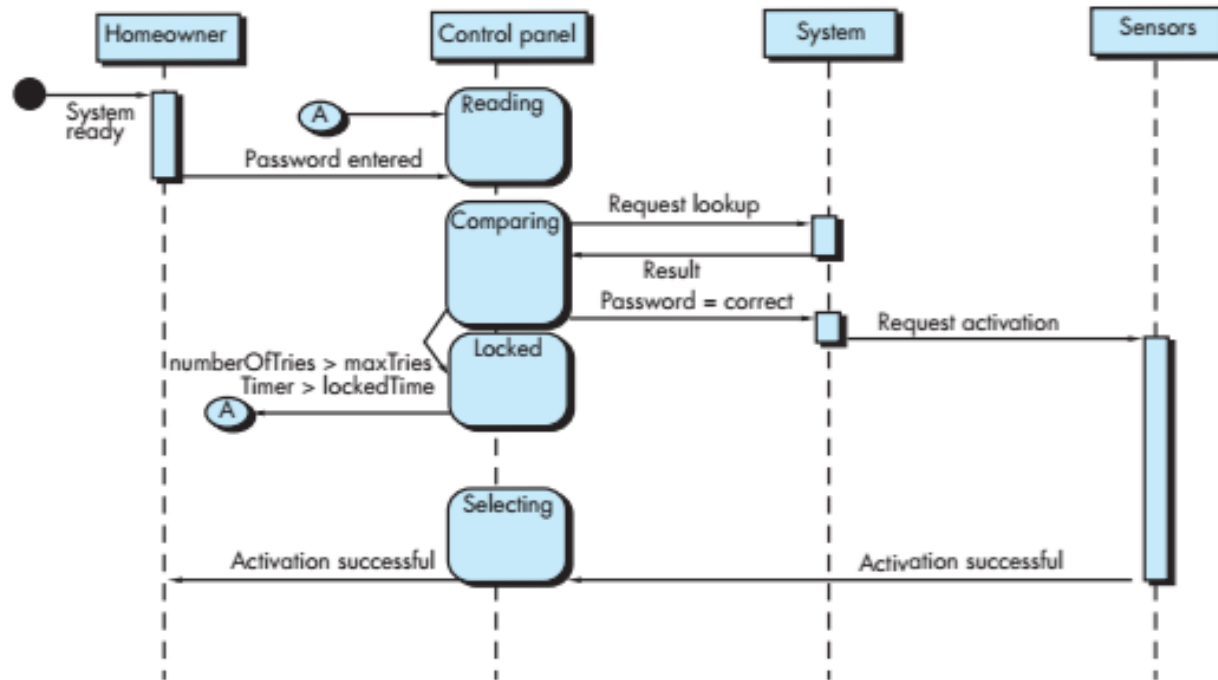4. When activation occurs, a red alarm light can be observed by the homeowner.
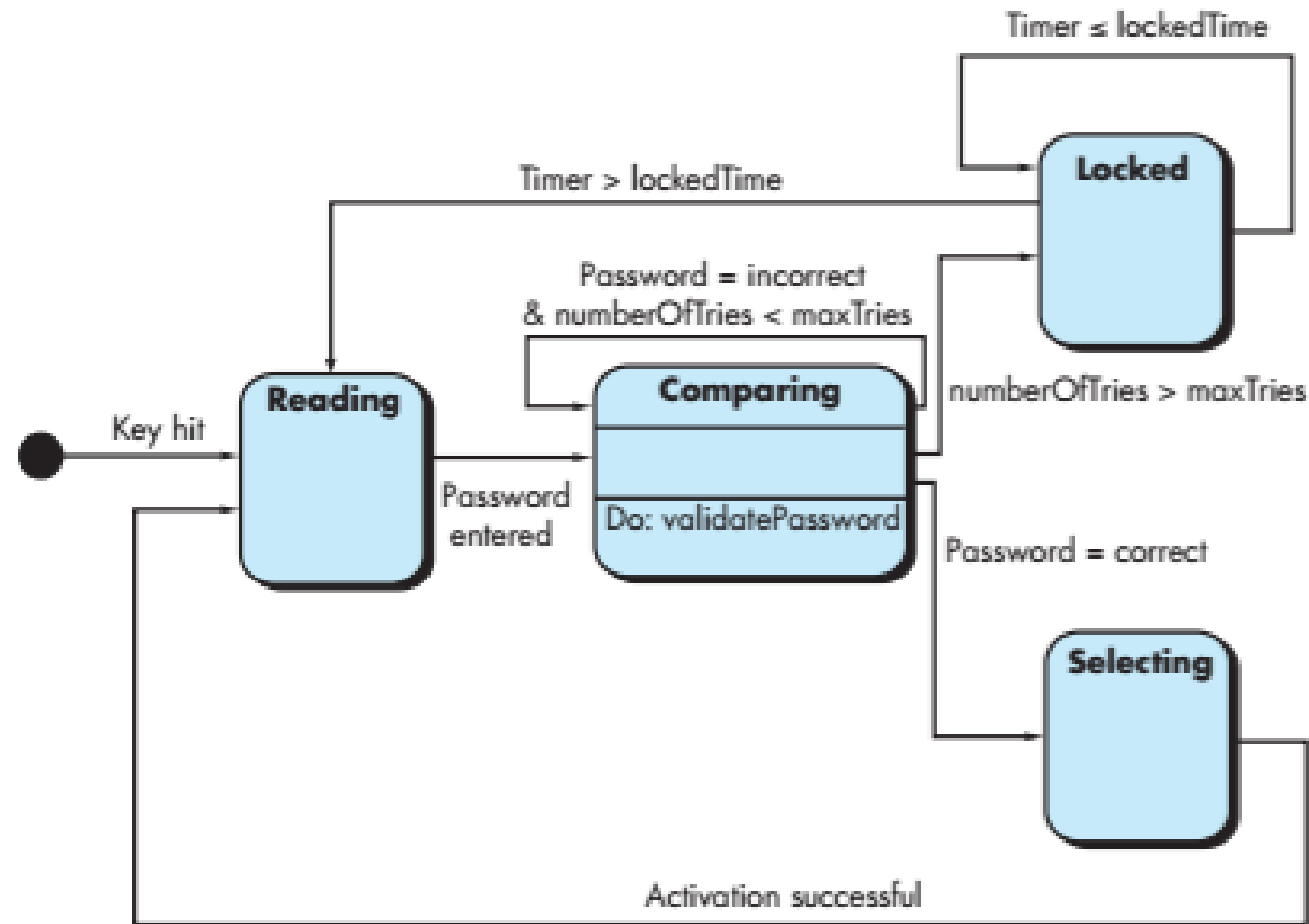
Scenario-Based Models: Use Cases

Behavioral Models: Sequence Diagrams

Behavioral Models: Sequence Diagrams

Behavioral Models: State Diagrams

Class Models