MIS 3504
Digital Design and Innovation Studio

9: CREATING A USE CASE

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What is a PROTOTYPE
Quick and Dirty Prototyping

HOW: Using any materials available, quickly assemble possible forms or interactions for evaluation.

WHY: This is a good way to communicate a concept to the team and evaluate how to refine the design.

IDEO team members designing a shopping device quickly prototyped various concepts to evaluate qualities like weight, size, and orientation.
What does a PROTOTYPE do
PROTOTYPES

1. Provide a partial and preliminary version as a mock up of software/solution

2. Inexpensively demonstrate how a solution will work – functionality/navigation/interfaces

3. Make abstract concepts more concrete and requirements tangible

4. Provide shared work product upon which technical and businesspeople can collaborate

Adapted from Memory Jogger
Prototype As Specification

Core Requirements

- Actors (People)
- Process
- Data
- Business Rules

JIM Prototype

- Persona (One or more actors that you consider important enough to show)
- Scenario & Use Cases (A selection of actions that a persona does using the “system”)
- Data Master (The fields you need to handle for the scenario to be successful)
- Business Rules & Events (Logic executing the business rules for your scenario to be a success)
Use Case Diagrams and Use Cases
Understanding HOW people will do their work using your solution
What actions will your users perform using your solution?

The Use Case Diagram

- Customer
- Customer Service
- My sStore
  - Selects Items
  - Pays for items
  - Answers Questions
Use Case Diagram Exercise

As a team:

1. Who are all the actors that would use your solution? 5 minutes
2. What are all the actions that they would do using your solution? 10 minutes
3. Draw a preliminary use case diagram for your solution 15 minutes
Use cases are a description of how an actor accomplishes a goal using your solution.

Adapted from Memory Jogger (p150)
So, what’s in a use case?

• High-level identifying data
• A summary of what the use case achieves
• Detailed steps the actor will need to take
• Exception steps that may be needed as a result of errors
• Variations that describe alternative paths through the use case
1 Feature Name (Example: ATM Transaction)

1.1 Feature Process Flow / Use Case Model

1.2 Use Case(s)

<table>
<thead>
<tr>
<th>Use Case ID:</th>
<th>Use a unique identifier for the use case</th>
<th>Created By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Case Name:</td>
<td>Use a short name for the use case, e.g. Withdraw Cash</td>
<td>Last Updated By:</td>
</tr>
<tr>
<td>Date Created:</td>
<td></td>
<td>Last Revision Date:</td>
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</table>

Actors: The actor is a person or entity outside of the software system being specified who interacts with the system and performs use cases to accomplish tasks. Different actors often correspond to different user classes, or roles, identified from the customer community that will use the product. Name the actor that will initiate this use case (primary) and any other actors who may participate in completing the use case (secondary).

Description: Provide a brief description of the reason or purpose of the use case.

Trigger: Identify the event that initiates the use case. This could be an external business event or system event that causes the use case to begin, or it could be the flow stop in the normal flow.

Preconditions: Identify any activities that must take place, or any conditions that must be true, before the use case can be started. Number each pre-condition.

1. Customer has active deposit account with ATM privileges
2. Customer has an activated ATM card

Postconditions: Describe the state of the system at the conclusion of the use case execution. This should include both minimal guarantees (what must happen even if the actor's goal is not achieved) and the success guarantees (what happens when the actor's goal is achieved). Number each post-condition.

1. Customer receives cash
2. Customer account balance is reduced by the amount of the withdrawal and transaction fee

Normal Flow: Provide a detailed description of the user actions and system responses that will take place during execution of the use case under normal, expected conditions. This dialog sequence will ultimately lead to accomplishing the goal stated in the use case name and description.

1. Customer requests cash
2. Customer enters PIN
3. System prompts customer to enter language preference English or Spanish
4. System validates customer is in the bank network
5. System prompts user to select transaction type
6. Customer selects Withdrawal Item Checking
7. System prompts user to enter withdrawal amount
8. System accepts ATM card

Variations: (Alternative Flow 1 – No PIN is Needed)

Exception: Describe any anticipated error conditions that could occur during execution of the use case, and define how the system is to respond to those conditions. Exceptions to the Withdrawal Transaction

1. In step 2 of the normal flow, if the customer enters an invalid PIN
2. Customer enters correct PIN
3. System enters correct PIN
4. Use Case resumes on step 3 of normal flow
Use Case Exercise

As a team:
1. Pick one of the simpler Use Cases on your diagram.
2. Write a brief description of the case focusing on what the actor is trying to accomplish and how he/she gets it done.
3. List the steps in the primary path, test them.
4. Are there any alternative paths?
5. What errors might occur, how would you handle these exceptions.

You have 30 minutes.
Next Week, Bring:

1. An improved Use Case Diagram for your solution
2. Use cases for all the interactions you wish to include in your scenario (i.e. what you will show your client)
3. Your first working prototype
Project Team Work Time