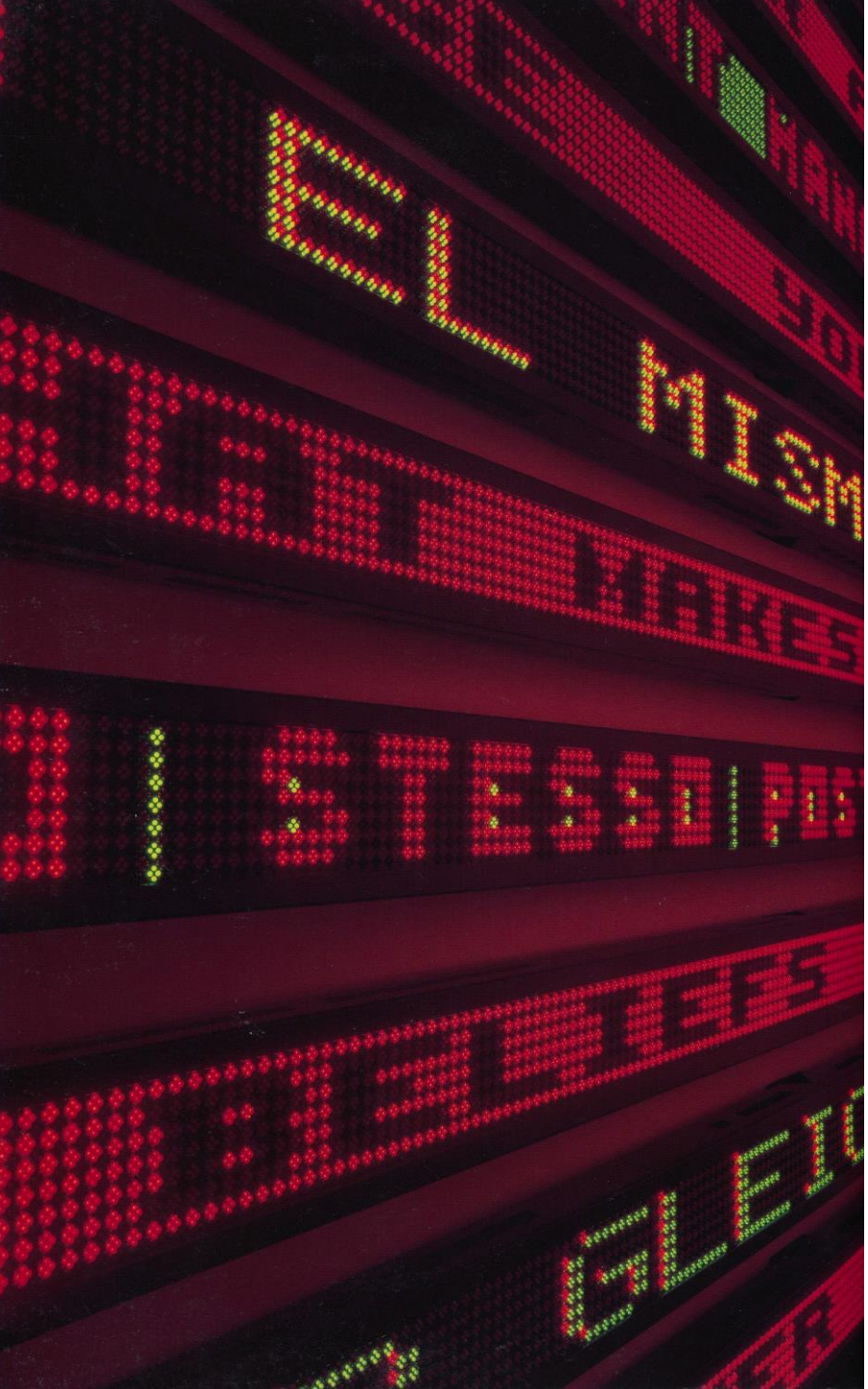


MIS 3506
Digital Design and Innovation Studio

9: CREATING A USE CASE

Amy Lavin

Photo: Installation by Jenny Holzer, US Pavillion, Venice Biennale 1990

Schedule:

Today: prototyping and use cases

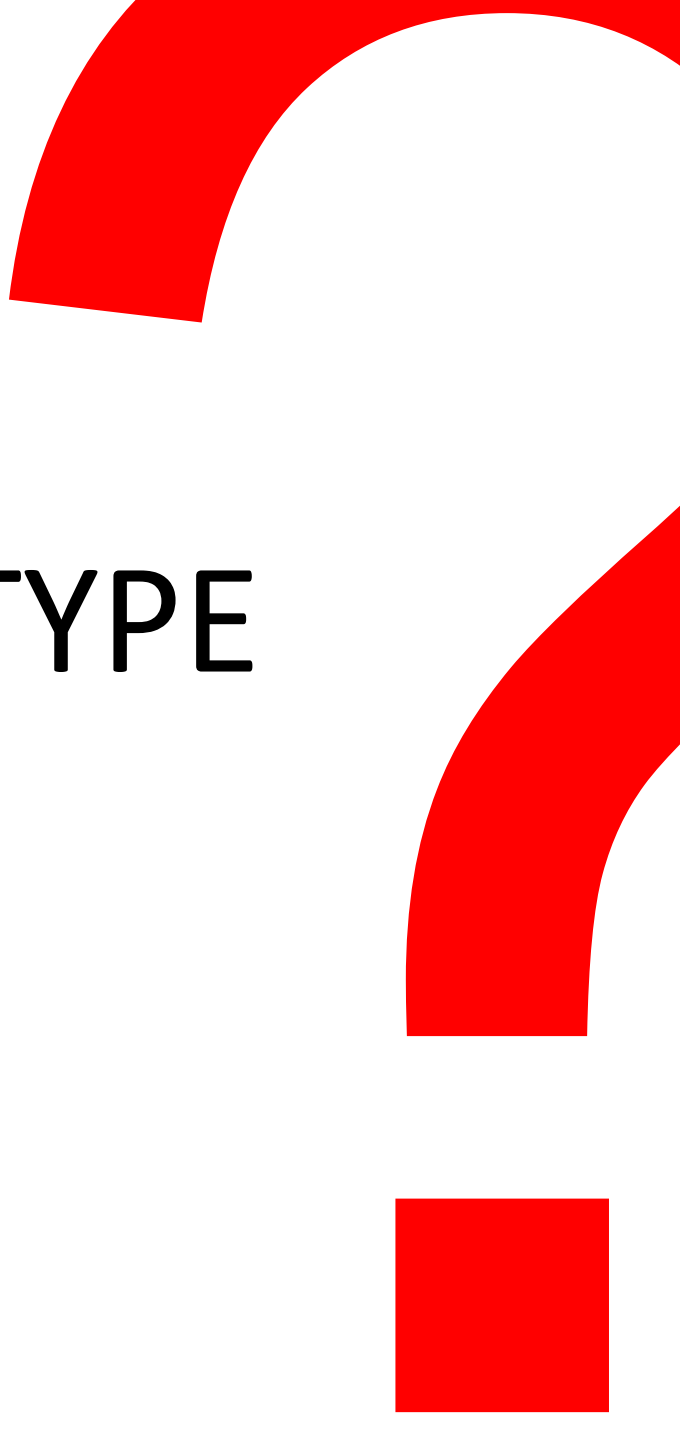
Thursday 10/27: **Exam #2**
(without content from week 8 or Use Cases on 10/25)

- process mapping
- data
- rules

Schedule: team meetings – if I haven't seen you or we don't have a meeting scheduled – get in touch ASAP.

Your **PROTOTYPE/SOLUTION**
needs to be your focus **NOW**

What is a PROTOTYPE



Ask Watch Learn **Try**

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.

IDEO

www.ideo.com

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

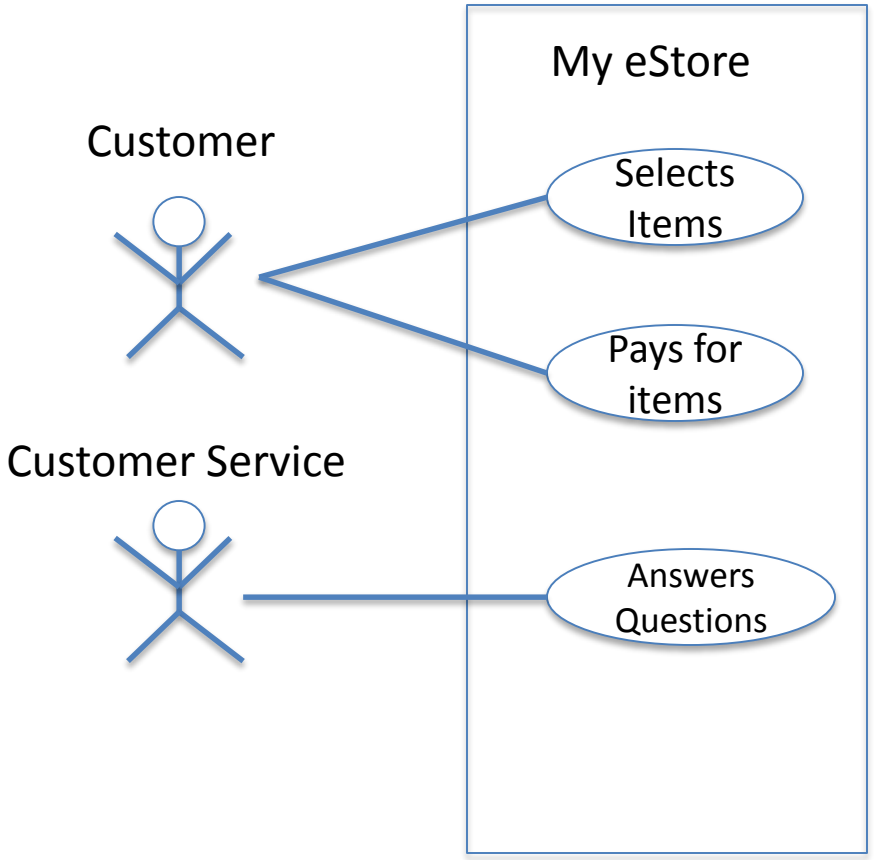
- Persona (One or more actors that you consider important enough to show)
- Scenario & Use Cases (A selection of actions that a persona does using the “system”)
- Data Master (The fields you need to handle for the scenario to be successful)
- Business Rules & Events (Logic executing the business rules 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



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

Use Case Template

1 Feature Name (Example: ATM Transaction)

1.1 Feature Process Flow / Use Case Model

1.2 Use Case(s)

Use Case ID:	Enter a unique numeric identifier for the Use Case. e.g. UC-1.2.1		
Use Case Name:	Enter a short name for the Use Case using an active verb phrase. e.g. Withdraw Cash		
Created By:		**Last Updated By:**	
Date Created:		**Last Revision Date:**	
Actors:	[An actor is a person or other entity external to 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 be initiating this use case (primary) and any other actors who will participate in completing the use case (secondary).]		
Description:	[Provide a brief description of the reason for and outcome of this 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 first step in the normal flow.]		
Preconditions:	[List any activities that must take place, or any conditions that must be true, before the use case can be started. Number each pre-condition. e.g. 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. 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. e.g. 1. Customer receives cash 2. Customer account balance is reduced by the amount of the withdrawal and transaction fees]		
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 inserts ATM card 2. Customer enters PIN 3. System prompts customer to enter language performance English or Spanish 4. System validates if customer is in the bank network 5. System prompts user to select transaction type 6. Customer selects Withdrawal From Checking 7. System prompts user to enter withdrawal amount 8. … 9. System ejects ATM card]		
Variations: [Alternative Flow 1 – Not In Network]	[Document **legitimate** branches from the main flow to handle special conditions (also known as extensions). For each alternative flow reference the branching step number of the normal flow and the condition which must be true in order for this extension to be executed. e.g. Alternative flows in the Withdraw Cash transaction: 4a. In step 4 of the normal flow, if the customer is not in the bank network 1. System will prompt customer to accept network fee 2. Customer accepts 3. Use Case resumes on step 5 4b. In step 4 of the normal flow, if the customer is not in the bank network 1. System will prompt customer to accept network fee 2. Customer declines 3. Transaction is terminated 4. Use Case resumes on step 9 of normal flow Note: Insert a new row for each distinctive alternative flow.]		
Exceptions:	[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. e.g. Exceptions to the Withdraw Case transaction 2a. In step 2 of the normal flow, if the customer enters and invalid PIN 1. Transaction is disapproved 2. Message to customer to re-enter PIN 3. Customer 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