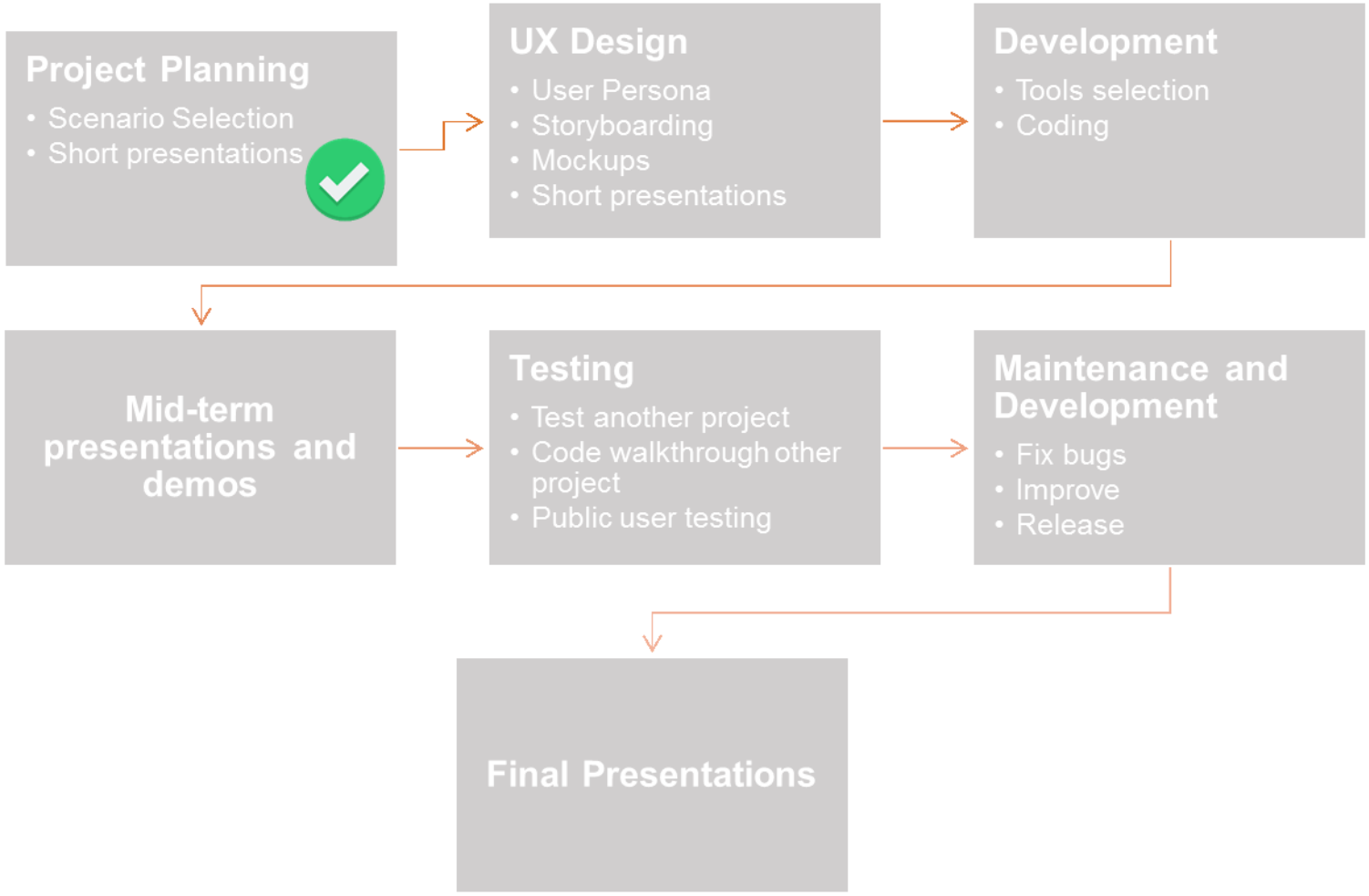
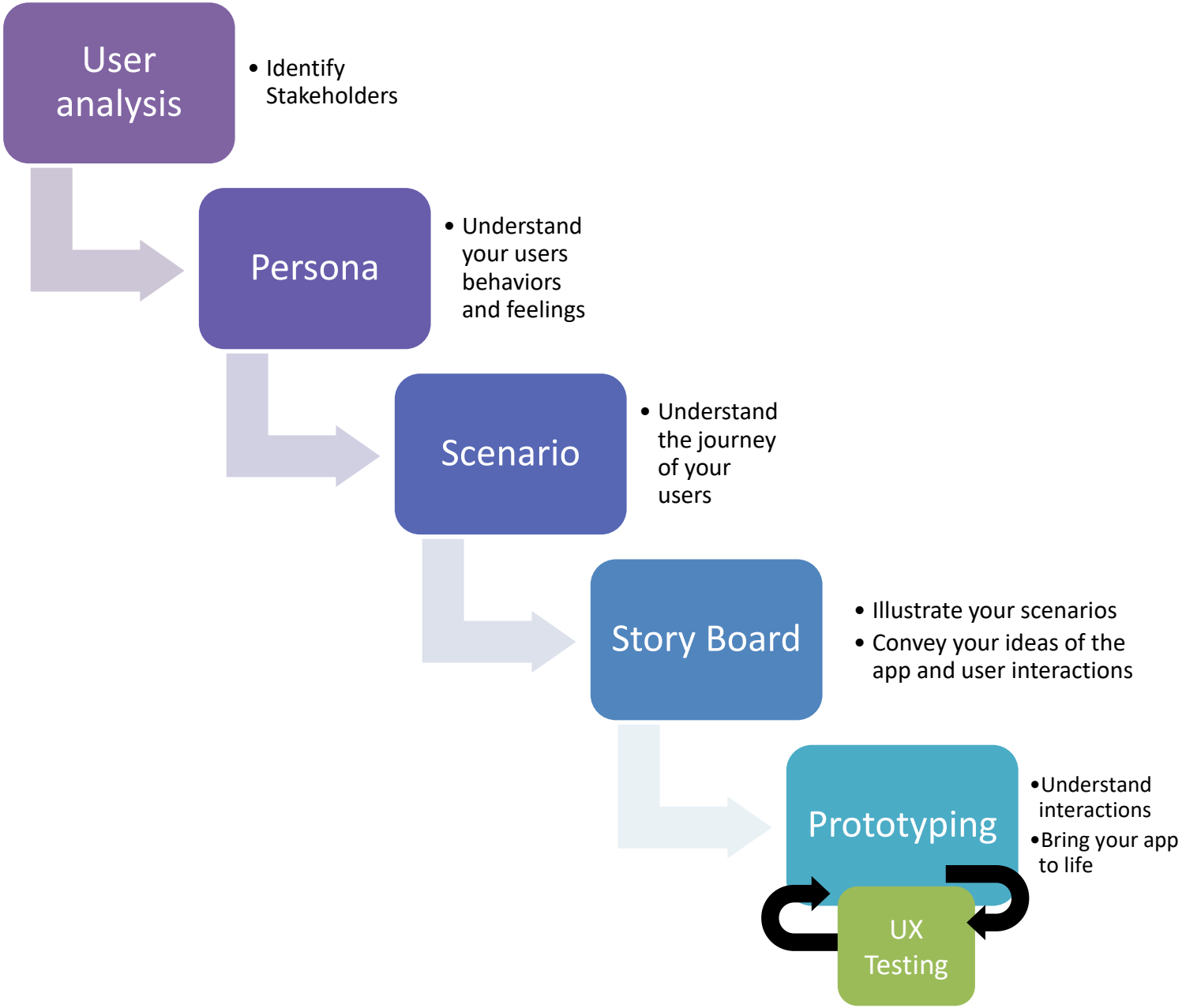
– Designing Usability: Techniques




User analysis
• Identify Stakeholders
Persona
• Understand your users behaviors and feelings
Scenario
• Understand the journey of your users
Story Board
• Illustrate your scenarios
• Convey your ideas of the app and user interactions
Prototyping
•Understand interactions
•Bring your app to life
UX Testing

Step 1: Identify your users

Stakeholders

App for CSULB

1. Students
2. Faculty
3. Staff
4. Janitors
5. Visitors

Users

- Primary user
- Secondary
- Tertiary

Step 2: Personas Analysis

What are personas for?

the fictitious, specific, and concrete representations of a group of target application users who shared some common characteristics, needs, and goals

- Helps to develop and detail a scenario
- Think of a person and describe their characteristics that define him/her.
- Maybe even include a paragraph about what that persons typical day is like.
- It has various problems with it, but still works as a very effective tool in formulating discussions and making progress in effective design.

Step 3: Create your User's Scenarios

What are scenarios for?

- primary persona, secondary persona and others.
- include information about goals, expectations, motivations, actions and reactions of your personas.
- used for functional requirements
- similar to use cases

Step 4: Story boarding

What is story boarding for?

- can identify potential consequences that users might face with the application in the future, based on the personas created in the previous stage.

- as effective media to capture and explore the user experience by translating the story and script into scenes through “who,” “what,” “when,” “where,” and “how” using images and text

Step 4: Story boarding

Hangry Henry goes to the breakroom before a meeting. He finds the remnants of some cupcakes...

The vending machine is also out of Hangry Henry's favorite junk food.

Hangry Henry is a bit rude during his next meeting. His friends suggest he tries SoLoMoFoo.

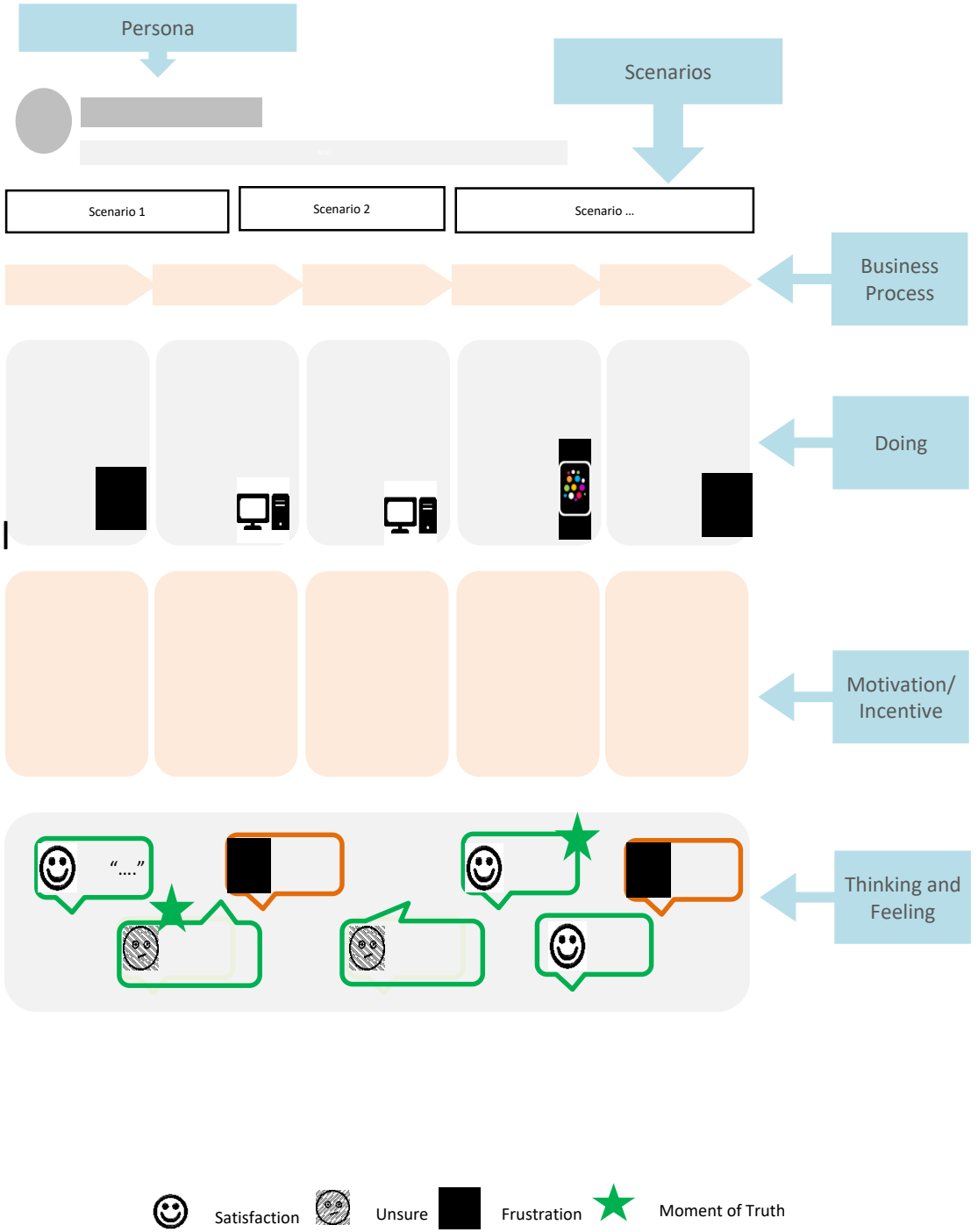
Baking Bridget drops off some fresh cupcakes she made over the weekend.

Baking Bridget tells SoLoMoFoo about her cupcakes and Hangry Henry immediately gets alerted!

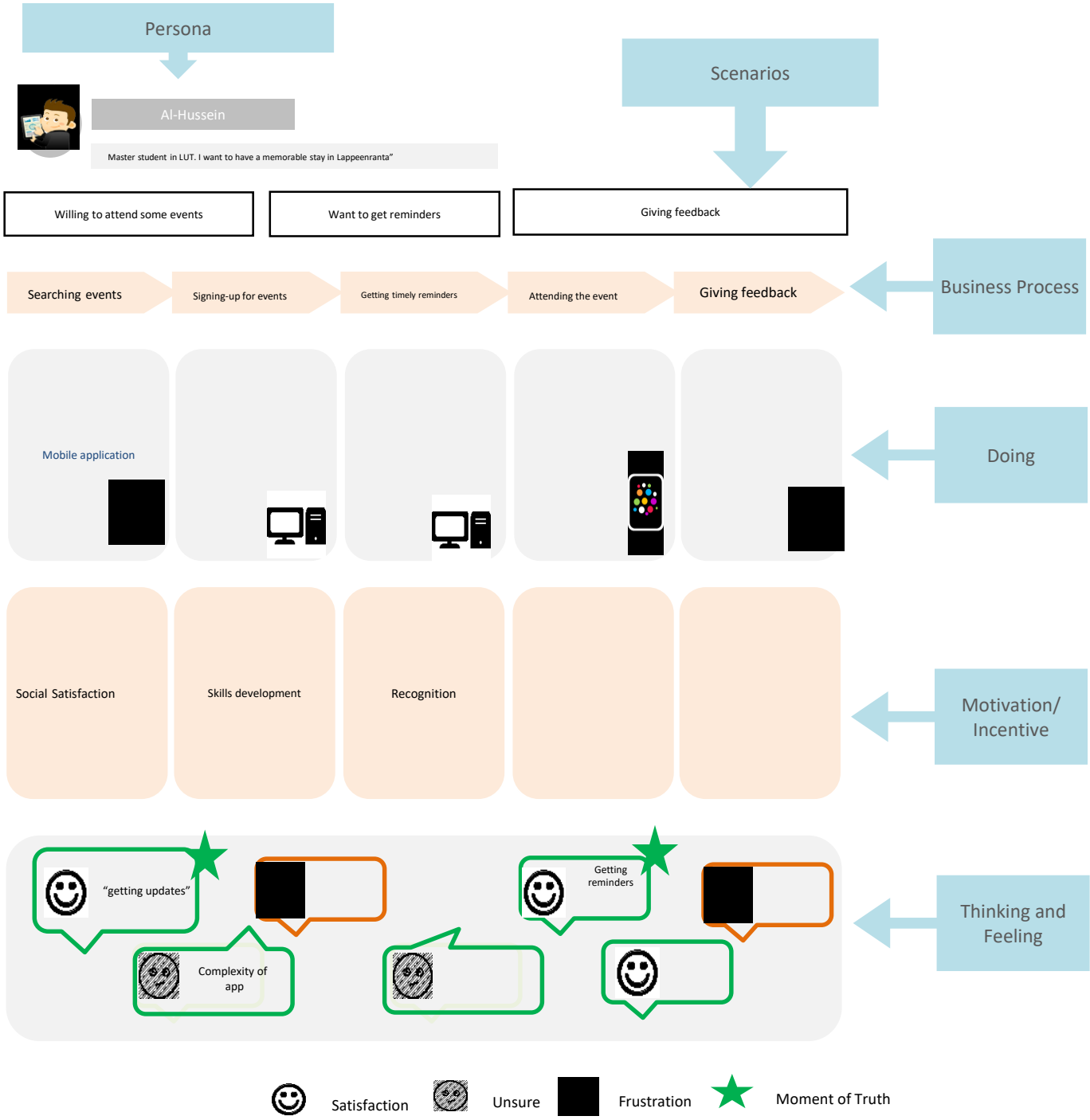
After his cupcake - Happy Henry is awesome in the meeting.

Step 5:
User Journey Map

- overview of the **sequence of the touch points and actions that users** will have with **planned application**.
- service design industry under several names, such as **“customer journey,” “customer journey map,” and “experience journey”**
- defined as a **visual illustration of a series of steps or interconnected touch points**, which users will **experience while engaging** with an application.



User Journey Map: Example



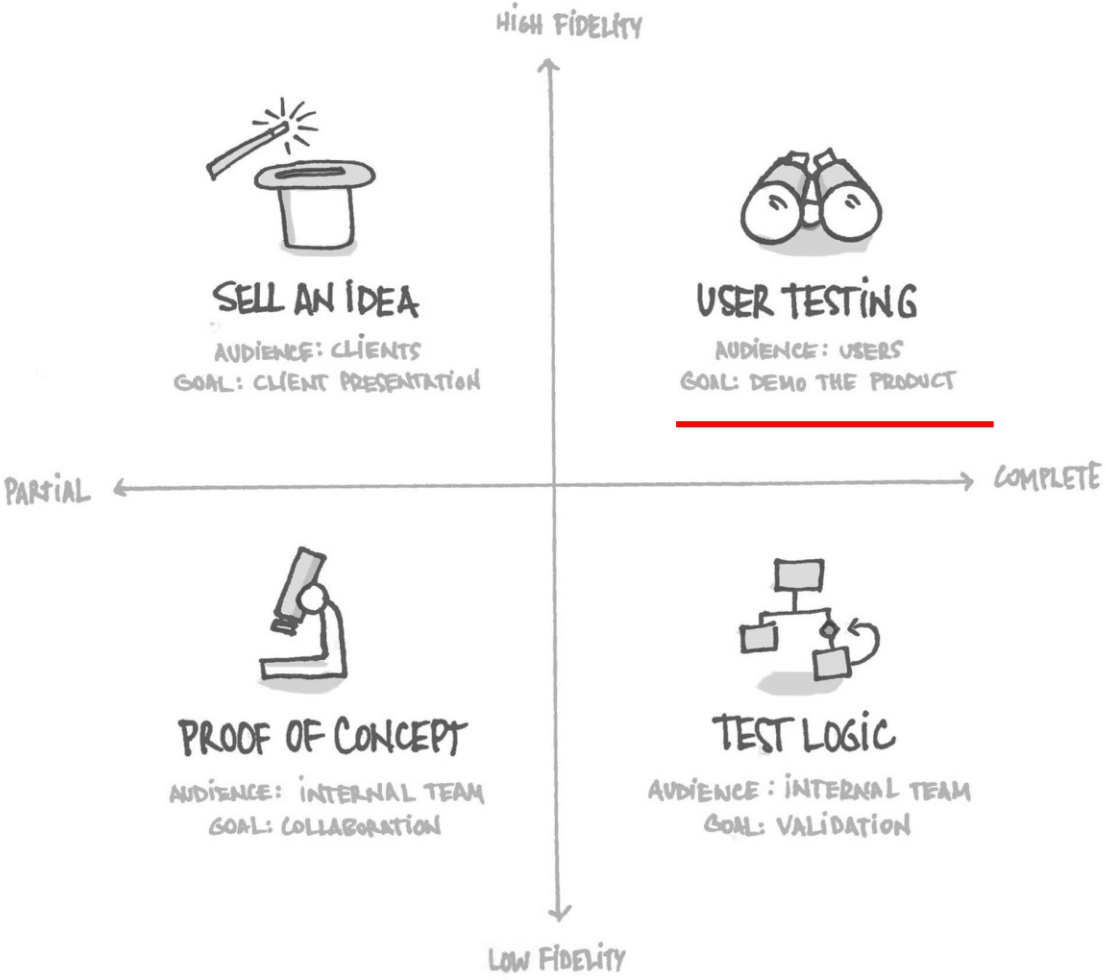
Step 6: Prototype

- IEEE defines prototyping as " *A type of development in which emphasis is placed on developing prototypes* ***early in the development process to*** *permit* ***early feedback and analysis in support of the development process.***"

- **Types of prototyping**

  - **Throw-away Prototyping:**
    - is developed from the initial requirements but is not used for the final project.
  - **Evolutionary Prototyping:**
    - to build a robust prototype and constantly improve it.
  - **Low Fidelity Prototyping:**
    - generally limited function, limited interaction prototyping effort.
  - **High Fidelity Prototyping:**
    - the core functionality of the products user interface.
    - consume resources and have high cost.

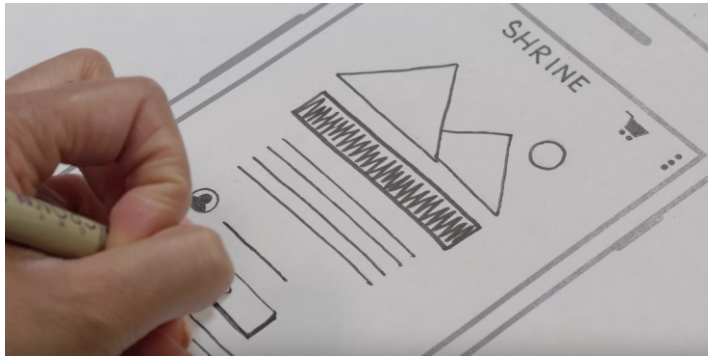
Step 6: Prototype - High vs low fidelity

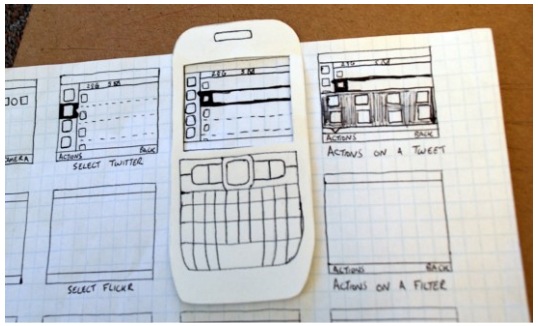


Step 6: Prototype - Prototype techniques (1):

Which prototype techniques do you know?

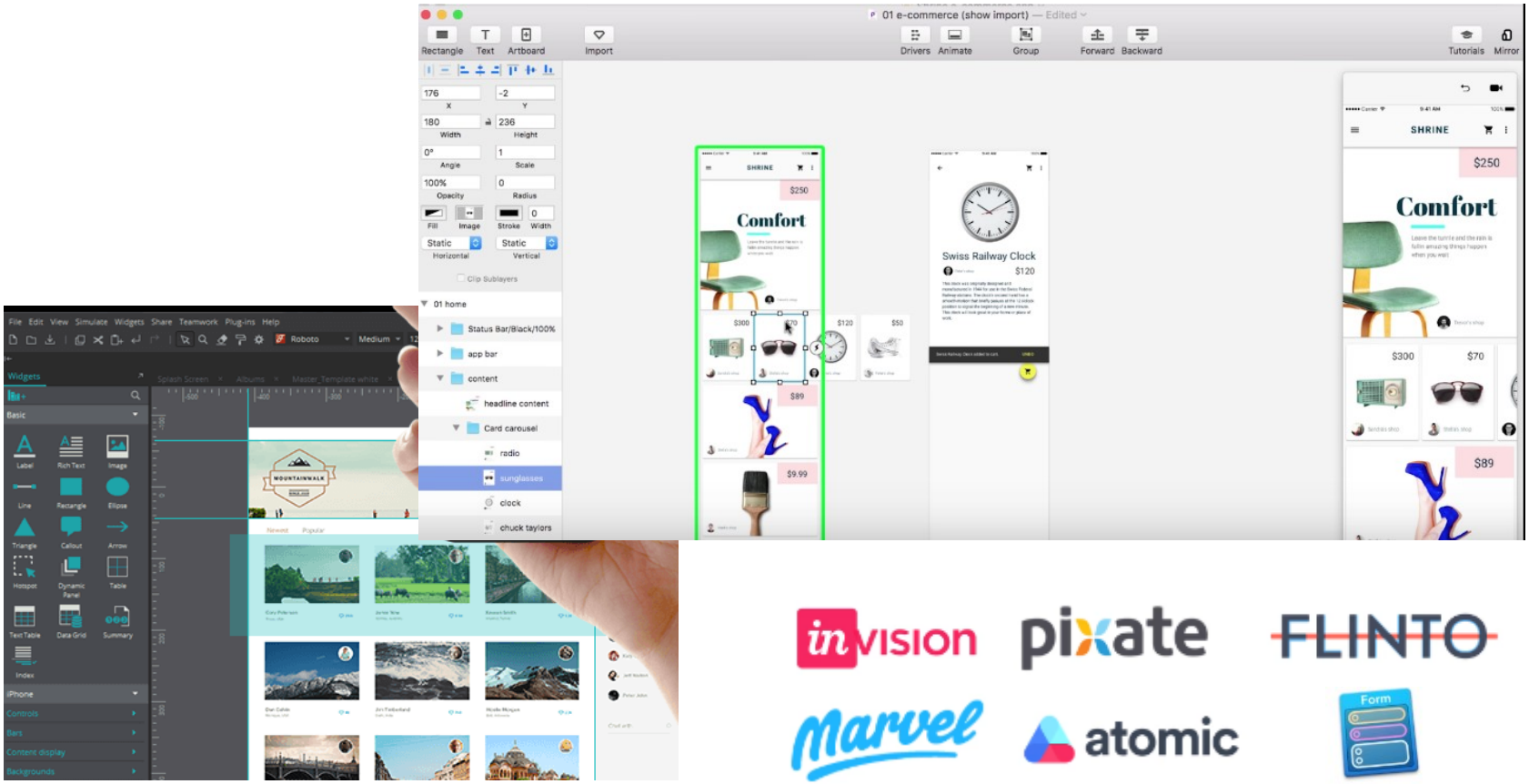
Paper Prototyping





Step 6: Prototype - Prototype techniques (2):

Digital Prototyping



Step 6: Prototype - Prototype techniques (3):

Native Prototyping

Step 7: Testing - How do you test users

- to perform usability tests, user should be classified in terms of terms of their level of systems experience, total number of users and their characteristics.

- Follow usability evaluation methods

- According to (Ivory and Hearst, 2001), usability evaluation methods (UEM) can be grouped by four dimensions

  - **Method class:** the type of usability evaluation method conducted at high level (e.g. usability testing or simulation)
  - **Method type:** how usability evaluation is performed within method class
  - **Automation:** Type: describes the evaluation aspect that is automated
  - **Effort Level:** describes the type of effort required to execute the method

Step 7: Testing - How do you test usability

- Method Types
  - **Testing:** an evaluator observes users interacting to determine various usability problems
  - **Inspection:** an evaluator uses a set of criteria or heuristics to identify potential usability problems.
  - **Inquiry:** users provide feedback on an interface via interviews or surveys
  - **Analytical modeling:** an evaluator employs user and interface models to generate usability predictions.
  - **Simulation:** an evaluator employs models to mimic a user interacting and report the results of this interaction

Step 7: Testing - How do you test usability

Method Class / Method Type	Automation Type: None	Capture	Analysis	Critique
Testing				
Thinking-Aloud Protocol	F (1)			
Question-Asking Protocol	F (1)			
Shadowing Method	F (1)			
Coaching Method	F (1)			
Teaching Method	F (1)			
Codiscovery Learning	F (1)			
Performance Measurement	F (1)	F (7)		
Log File Analysis			IFM (19)*	
Retrospective Testing	F (1)			
Remote Testing		IF (3)		
Inspection				
Guideline Review	IF (6)		(8)	M (11)†
Cognitive Walkthrough	IF (2)	F (1)		
Pluralistic Walkthrough	IF (1)			
Heuristic Evaluation	IF (1)			
Perspective-Based Inspection	IF (1)			
Feature Inspection	IF (1)			
Formal Usability Inspection	F (1)			
Consistency Inspection	IF (1)			
Standards Inspection	IF (1)			
Inquiry				
Contextual Inquiry	IF (1)			
Field Observation	IF (1)			
Focus Groups	IF (1)			
Interviews	IF (1)			
Surveys	IF (1)			
Questionnaires	IF (1)	IF (2)		
Self-Reporting Logs	IF (1)			
Screen Snapshots	IF (1)			
User Feedback	IF (1)			
Analytical Modeling				
GOMS Analysis	M (4)		M (2)	
UIDE Analysis			M (2)	
Cognitive Task Analysis			M (1)	
Task-Environment Analysis	M (1)			
Knowledge Analysis	M (2)			
Design Analysis	M (2)			
Programmable User Models			M (1)	
Simulation				
Information Proc. Modeling			M (9)	
Petri Net Modeling			FM (1)	
Genetic Algorithm Modeling		(1)		
Information Scent Modeling		M (1)		

Step 7: Testing - While performing usability test

- **Motivation:** what is the motivation of the test
- **Target users:** who are your users
- **Target platform:** for which platform are you doing test: web, mobile, wearables
- **Task design:** what types of task you are giving to users to perform the test
- **Number of users:** how many users to conduct the experiment
- **Test environment:** is it in lab, controlled environment, semi controlled environment
- **Observer:** who will observe all the sessions
- **Assessment:** after data is collected
  - **Impact:** no of times user experience issues occurred
  - **Persistence:** no of times a problems faced by users
  - **Frequency:** total no of users who has faced the problem

Take away!

- Think from users point of view
- Always use user in your design process
- Who is your target user?
- Always use simple language
- Follow KISS method: Keep it simple stupid
- Easy to navigate between pages or application
- Avoid errors
- Give understandable icons
- Perform usability test wisely