

Software Engineering

Lecture 7

Lectures	Topics
1	Introduction to Software Engineering
2	Software Development Process (SDLC Activities) <ul style="list-style-type: none"> - SDLC Activity: Specification or Requirement Engineering - SDLC Activity: System Modeling/Design - SDLC Activity: Implementation - SDLC Activity: Testing - SDLC Activity: Evolution - SDLC Activity: Deployment/Installation - SDLC Activity: Maintenance
3	SDLC Activity: Requirement Engineering <ul style="list-style-type: none"> - Requirement Elicitation - Requirement Analysis and Management - Requirement Validation
4, 5, 6	SDLC Activity: System Modeling/Design <ul style="list-style-type: none"> - Context Modeling - Data Modeling - Structural/Architectural Modeling - Process Modeling - UI/UX Modeling
7,8,9	SDLC Activity: Implementation (Coding, tools, GIT – Version management, IDE, RESTFUL architecture)
10	SDLC Activity: Testing
11	SDLC Activity: Deployment (tools to deploy, cloud computing)
12	SDLC Activity: Maintenance

Design
is not just what it looks like and feels like.
It is how it works

-Steve Jobs

Agenda

- UI/UX Modeling or Interface Design
 - Modeling Techniques
 - Wireframe
 - PSD
 - Slicing
 - UI: User Interface
 - Example of UI disaster Example
 - Difference between UI and UX
 - UI Design Principles
 - UI Design Guidelines

4.5 UI/UX Modeling / Interface Design

- Describes how the software communicates with humans who use it
- UI Modeling Techniques:
 - Wireframe
 - PSD (Graphic Rich Design)
 - Slicing (Converting Design into code of lines)







4.5.1.1 Wireframe

Use tools to draw wireframe

Confirmed Purchase Products

Vendor: Tulip Collection (9845215698 - New Road)

 Print

Image	Product	Code	Colour - Size	Rate	Req. Qty	Available Qty	Amount	Restock	Out-Of-Stock
	Fleece Jacket (JKF-1809-BRN-L)	1809	Blue - Large	Rs. 1500	2	—		<div>Restock By 1</div> <div>Order id 456 </div> <div>Order id 457 </div>	Out of stock
	Leather Jacket (JKF-1810-BRN-L)	1810	Blue - Large	Rs. 1500	1	—		<div>Restock By 1</div> <div>Order id 456 </div> <div>Order id 457 </div>	Out of stock

4.5.1.2 PSD – Desktop Optimized

FILTER

▼ CATEGORIES

Clothing

Shoes

Accessories

Belts

Hats

Ties & Pocket square

Wallets

Sunglasses

Jewellery

Scarves

Gloves

Personal Care & Grooming

Ethnic Wear

WOMEN'S SCARVES

× New Arrival
 × Long Scarves
 × Colorful

SORT BY: ▼



Onepiece
Rs. 1250

+ COLORS



Long Shirt
Rs. 1250

+ COLORS



Pencil Skirt
Rs. 1250

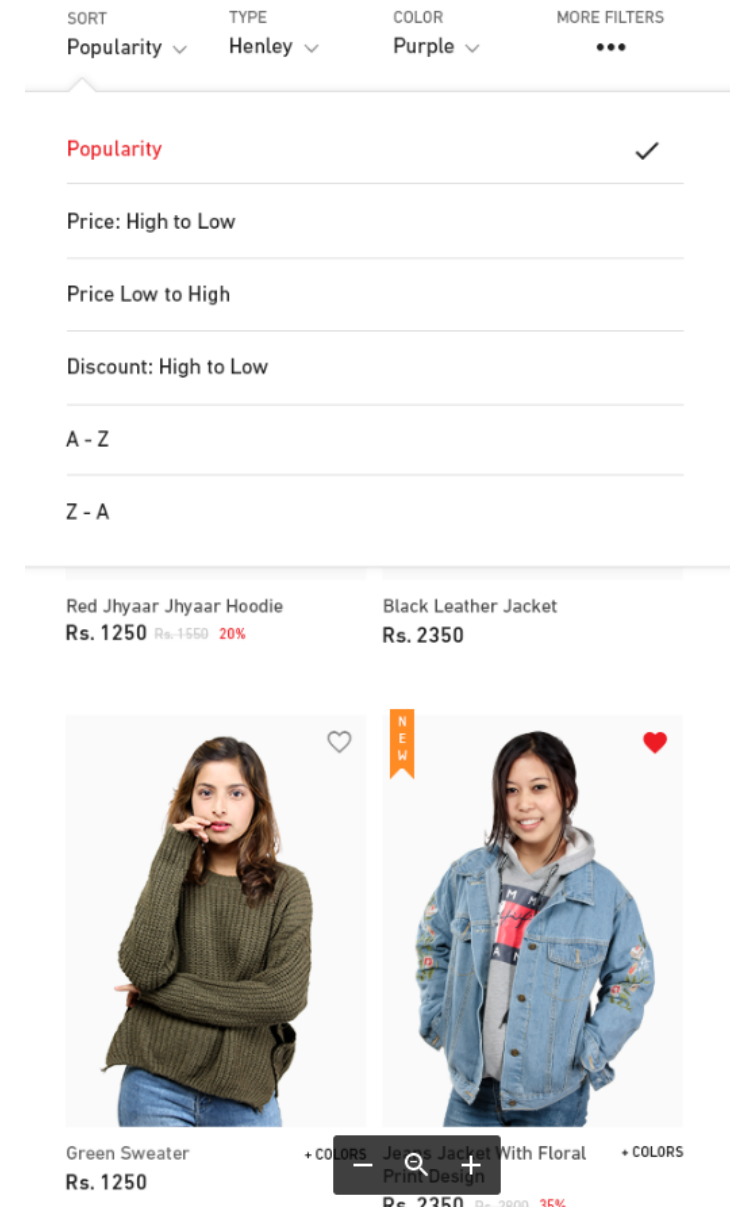
+ COLORS



Green Sweater
Rs. 1250

+ COLORS

4.5.1.1 PSD – Mobile Optimized



4.5.1.3 Slicing



4.5.2 UI: User Interface

A user interface (UI) describes how users interact with a computer system, and consists of all the hardware, software, screens, menus, functions, output, and features that affect two-way communications between the user and the computer.

4.5.3 UI Disaster: Example (Windows 8 Case)

Microsoft Windows 8 Case

The trouble wasn't that Microsoft's designers couldn't design a good operating system interface; it's that they designed two of them. Windows 8 had one environment for keyboard/mouse and a second, overlaid interface for touch screens. Each had a separate Web browser, Control Panel, e-mail program and type of programs. You couldn't ignore either one. Twice the learning, twice the confusion—and people hated it. Microsoft ditched that approach in Windows 10.

4.5.3 UI Disaster: Example (iPhone X)

- https://www.youtube.com/watch?v=0V5_uU3NNpw

4.5.4 Difference between UI and UX

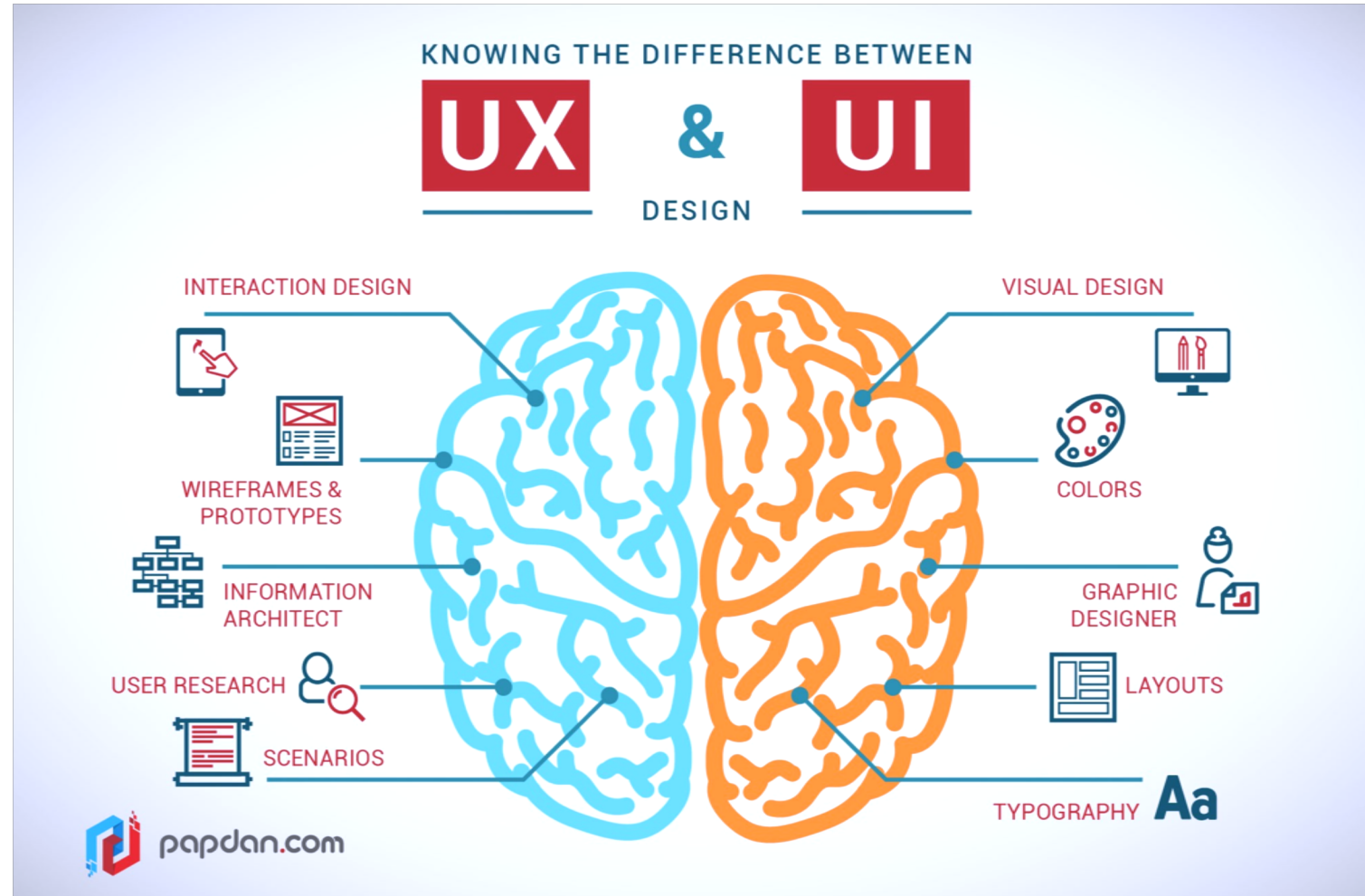
UI

- What to make
- Visual elements
- Desirable
- Focus on tools
- More towards look, UI design makes sure the product is visually laid out to create the most effective USER EXPERIENCE
- How the content of website is displayed.

UX

- What to achieve
- Experiences
- Focus on interactions
- More on technical side, UX design ensures the user's interaction with the product will be most pleasing
- Website's overall ease of use.

4.5.4 Difference between UI and UX



4.5.5 UI Design Principles

Understand the Business

Maximize Graphical Effectiveness

Think Like a User

Use Models and Prototypes

Focus on Usability

Invite Feedback

Document Everything

4.5.6 Designing UI - Guidelines

Design a Transparent Interface

Create an Interface that is easy to Learn and Use

Enhance User Productivity

Make it Easy for Users to Obtain Help or Correct Errors

Minimize Input Data Problems

Provide Feedback to Users

Create an Attractive Design and Layout

Use Similar Terms and Images

4.5.6.1

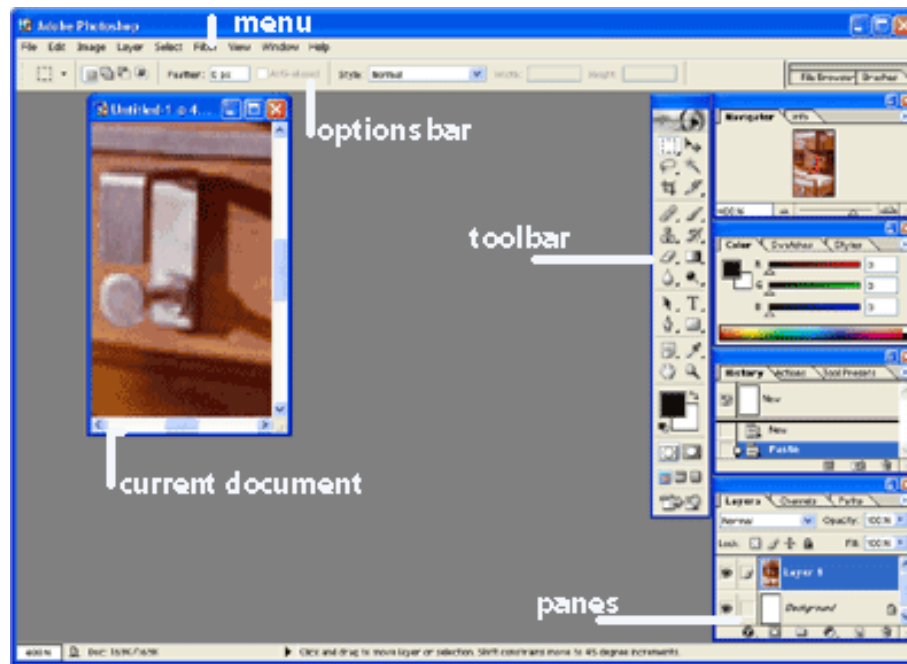
Design a Transparent Interface



- Create a design that is easy to learn and remember.
- Minimize data entry problems.
- Allow users to correct errors easily.
- Create a logical and attractive layout.

4.5.6.2

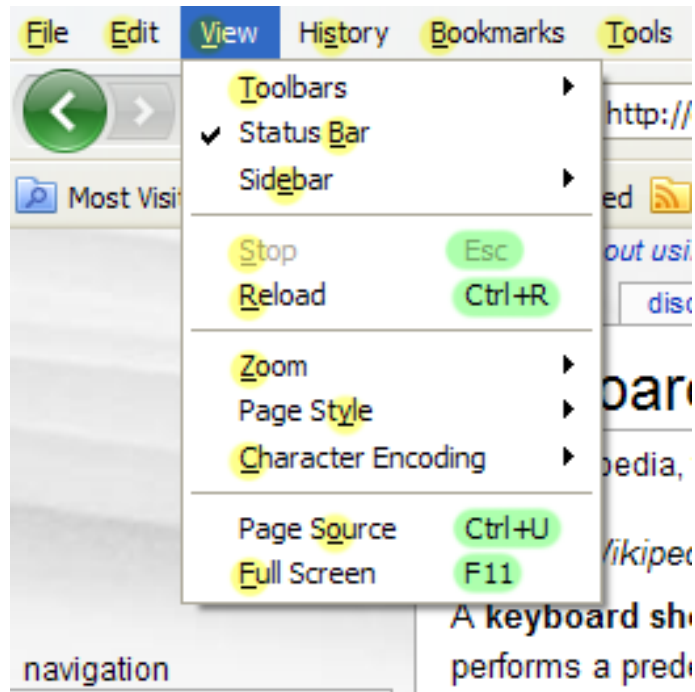
Create an Interface that Is Easy to Learn and Use



- Clearly label all controls, buttons, and icons
- Show all commands in a list of menu items, but dim any commands that are not currently available.
- Make it easy to navigate or return to any level in the menu structure

4.5.6.3

Enhance User Productivity





- Organize tasks, commands, and functions in groups that resemble actual business operations
- Provide shortcuts so experienced users can avoid multiple menu levels
- Use default values if the majority of values in a field are the same

4.5.6.4

Make It Easy for Users to Obtain Help or Correct Errors

Home » Administration » Structure » Views


Add new view 

 The machine-readable name is already in use. It must be unique.

1 error has been found: [Machine-readable name](#)

VIEW BASIC INFORMATION

View name*

Frontpage 

Error: The machine-readable name is already in use. It must be unique.

Machine-readable name*

frontpage

A unique machine-readable name for this View. It must only contain lowercase letters, numbers, and underscores.

☐ Description


- Organize tasks, commands, and functions in groups that resemble actual business operations
- Provide shortcuts so experienced users can avoid multiple menu levels
- Use default values if the majority of values in a field are the same

4.5.6.5


Minimize Input Data Problems

Where are you going?

Enter a destination to find the lowest rates possible—no matter how last minute.

 **USE CURRENT LOCATION**

- or -

 Enter zip code or city and state

FIND HOTELS

- Create **input masks**, which are templates or patterns that make it easier for users to enter data
- Display event-driven messages and reminders
- Establish a list of predefined values that users can click to select.

4.5.6.6

Provide Feedback to Users

The screenshot shows a mobile app interface for creating an account. At the top, a red header bar contains a back arrow, the text 'Create an account', and a menu icon. Below the header, a grey bar displays the message 'Correct the following errors: username and password'. The form fields are as follows: 'Name' with 'Stephanie' and 'Smith' (no error); 'Username' with 'stephsm' and '@email.com', showing a red error message 'That name is already being used'; 'Password' with masked dots (no error); 'Confirm password' with masked dots, showing a red error message 'Passwords don't match'; 'Birthday' with a dropdown set to 'November', '23', and '1990' (no error); and 'Gender' (no error). The bottom of the screen shows the Android navigation bar.

- Display messages at a logical place on the screen, and be consistent.
- Let the user know whether the task or operation was successful or not.
- Provide a text explanation if you use an icon or image on a control button
- Avoid messages that are cute, cryptic, or vague

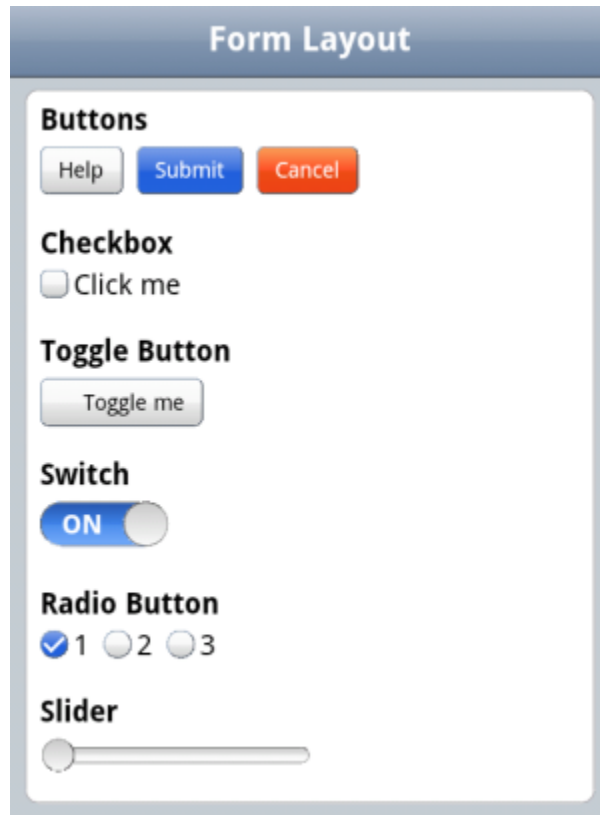
4.5.6.7

Create an Attractive Layout and Design

- Use appropriate colors to highlight different areas of the screen; avoid gaudy and bright colors.
- Group related objects and information.
- Ensure that commands always will have the same effect
- Keep screen displays uncluttered, with enough white space to create an attractive, readable design.

4.5.6.8

Use Familiar Terms and Images



Form Layout

Buttons

Help Submit Cancel

Checkbox

☐ Click me

Toggle Button

Toggle me

Switch

ON

Radio Button

☒ 1 ☐ 2 ☐ 3

Slider

- Remember that users are accustomed to a pattern of *red = stop*, *yellow = caution*, and *green = go*.
- Use familiar commands if possible, such as Cut, Copy, and Paste.
- Avoid complex terms and technical jargon



Thank you