

# Software Engineering

## Week # 9

---

LECTURER: ABDULRAHMAN QAIM

# User Interface Design

---

The design of user interfaces for machines and software such as computers, home appliances, mobile devices, and other electronic devices, with a focus on maximizing usability and the user experience.

The aim is to make the user's interaction as simple and efficient as possible

The design of user interfaces for different software of Machine with a clear purpose

- Wikipedia

# User Experience Design

---

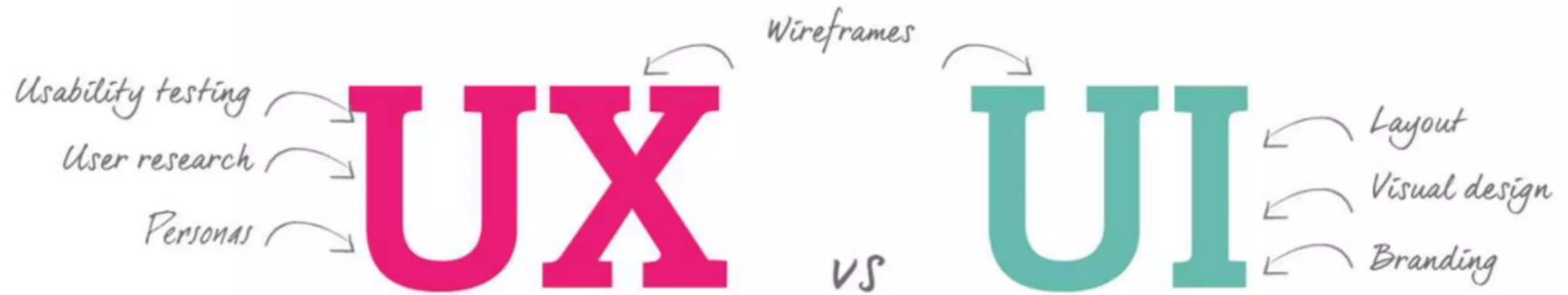
User experience design (UX) is the process of enhancing user satisfaction with a product by improving the usability, accessibility, and pleasure provided in the interaction with the product.

User experience design encompasses traditional human-computer interaction (HCI) design and extends it by addressing all aspects of a product or service as perceived by users.

UX Design is studying user behavior and understanding user motivations with the goal of designing better digital experiences.

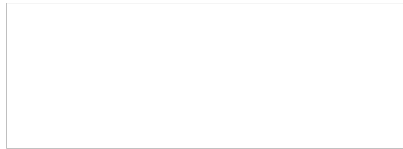
# UI vs UX

---



# UI vs UX

---



- UX design is what makes an interface **useful**
- UI design is what makes an interface **beautiful**.

User Interface



User Experience



# The design process

---

## 1. Strategy

- What is the problem you are trying to solve?
- What are your user needs?
- Product Objectives?

## 2. Scope

- Defining functional specifications and content requirements
- What are the features and how might you prioritize them?

## 3. Structure

- Information architecture is concerned with how the information in an app is organized
- User flows map out the specific journey's users embark on through the app to help solve their specific needs

# The design process

---

## 4. Skeleton

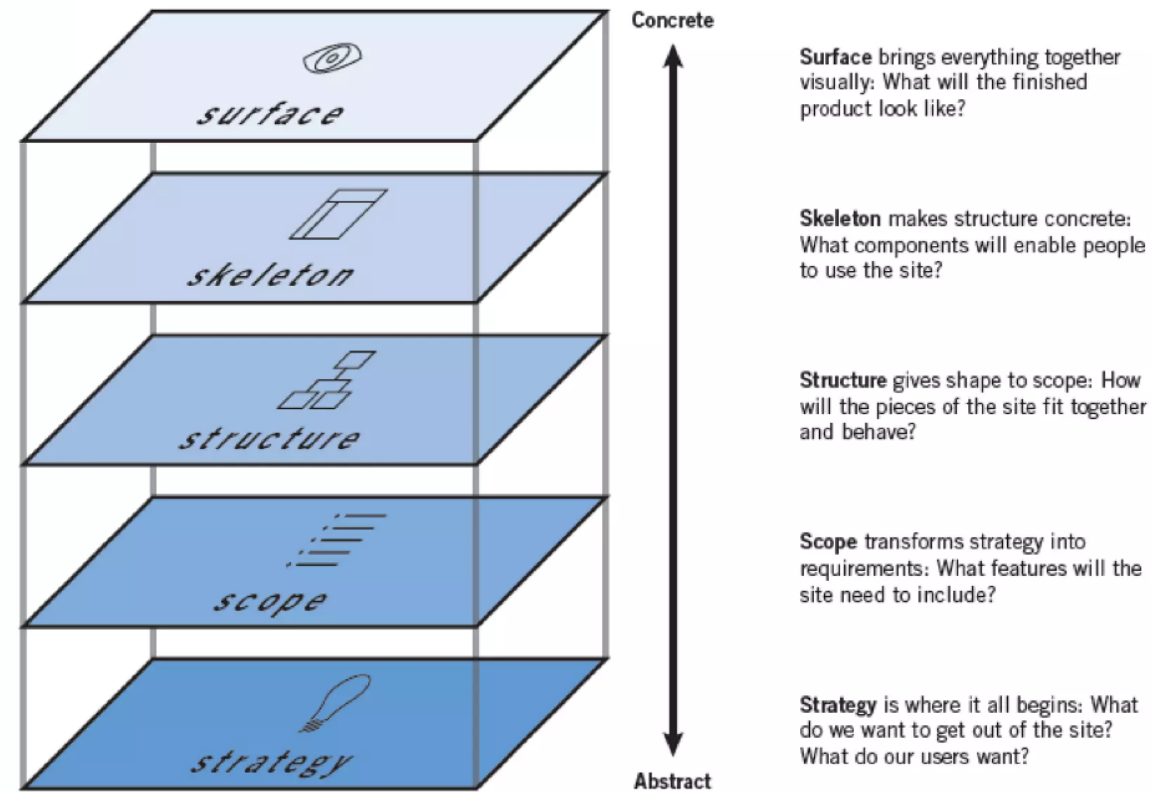
- Achieve the structure of an interface design and information design
- UX or Product designers start designing testing and iterating on wireframes

## 5. Surface

- Communicate the brand, product, value, and functionality in one cohesive image.
- UI Designers and Visual Designers start their work.
- Tools Adobe XD Sketch, Photoshop, Figma, etc.

# The design process

---





# UI Design Core Principles

---

What makes a good UI?

## Clarity

- There's nothing worse than ambiguity in an app.
- Let the user feel confident while navigating through the app.

## Feedback

- Every action needs a reaction
- Loading states, Error and Success messages etc
- Let the user know what is going on!

## Consistency

- Be consistent in your UI elements (Mobile, Web, Watch)
- Once your users start learning they don't have to relearn

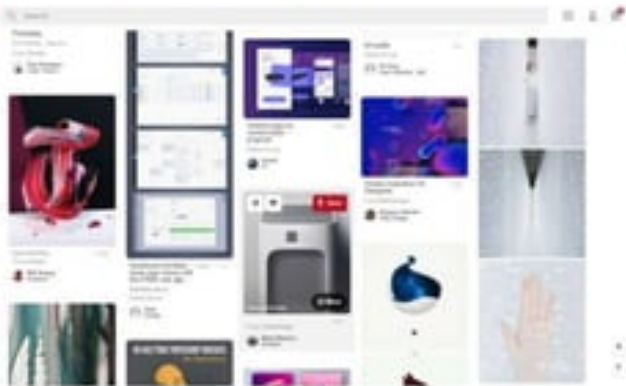
# UI Design Core Principles

---

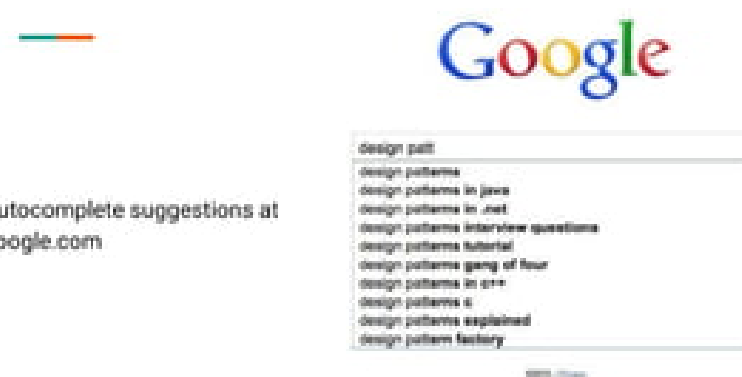
Use established design patterns

- Innovation is awesome and encouraged, but it shouldn't have to be at the expense of user experience.
- Many of these established design principles are grounded in human perception

Pinterest uses  
Cards for its content




Autocomplete suggestions at  
google.com



# UI Design Core Principles

## Visual hierarchy

- The arrangement of elements in a way that implies relative importance
- Typography, White space, and Colors are part of this visual hierarchy
- The two primary factors that make a good typography are **legibility** and **readability**
  - **Legibility** depends on the type face; It is how each letterform is distinguishable from one another.
  - **Readability** is determined by how you manipulate a particular typeface to make it easier to comprehend.



The typeface  
matters !

This is less legible.

This is more legible.

# UI Design Core Principles



NEVER center large  
Blocks of copy.

The eye knows exactly  
where the next line  
begins.

Lorem ipsum dolor sit amet, consectetur  
adipiscing elit. Fusce dignissim pellentesque  
quam, sed imperdiet nisl aliquam sodales.  
Duis dolor nisl, sollicitudin in aliquet quis,  
ullamcorper eu mauris. Nunc vehicula nisl ac  
metus elementum bibendum.

Duis elementum vestibulum nibh, suscipit  
adipiscing neque sodales quis.

Maecenas condimentum interdum quam nec  
volutpat. Nunc sem felis, porta vel mattis id,  
dictum vel velit. Aliquam elementum, nulla id  
porttitor blandit, ante enim tincidunt lectus,  
sed rhoncus elit ante in ligula.

Center-aligned



Lorem ipsum dolor sit amet, consectetur  
adipiscing elit. Fusce dignissim pellentesque  
quam, sed imperdiet nisl aliquam sodales.  
Duis dolor nisl, sollicitudin in aliquet quis,  
ullamcorper eu mauris. Nunc vehicula nisl ac  
metus elementum bibendum.

Duis elementum vestibulum nibh, suscipit  
adipiscing neque sodales quis.

Maecenas condimentum interdum quam nec  
volutpat. Nunc sem felis, porta vel mattis id,  
dictum vel velit. Aliquam elementum, nulla id  
porttitor blandit, ante enim tincidunt lectus,  
sed rhoncus elit ante in ligula.

Combination



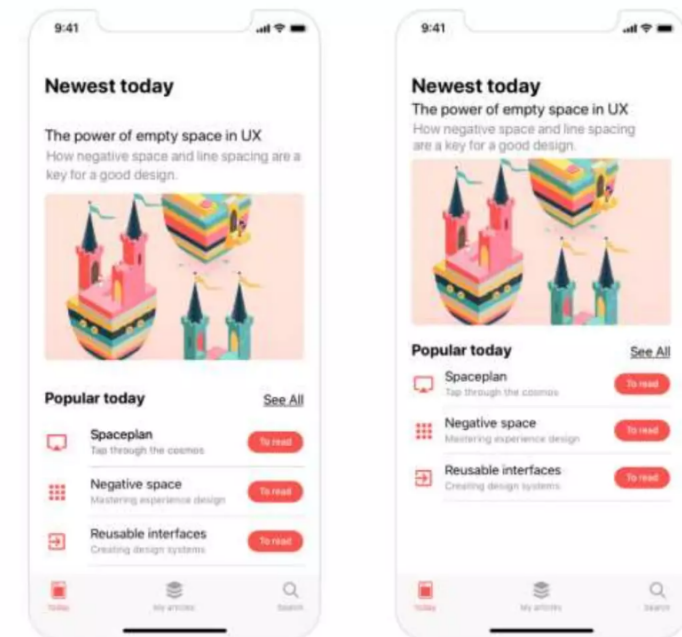
# UI Design Core Principles

## Visual hierarchy

- Whitespace
  - White space helps with readability and comprehension immensely.
  - Readers find it easier to focus on and process generously spaced content.
  - White space can be used to create a strong hierarchy

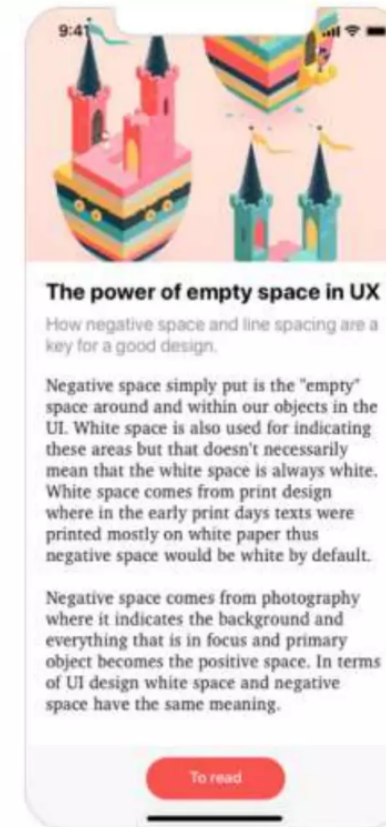
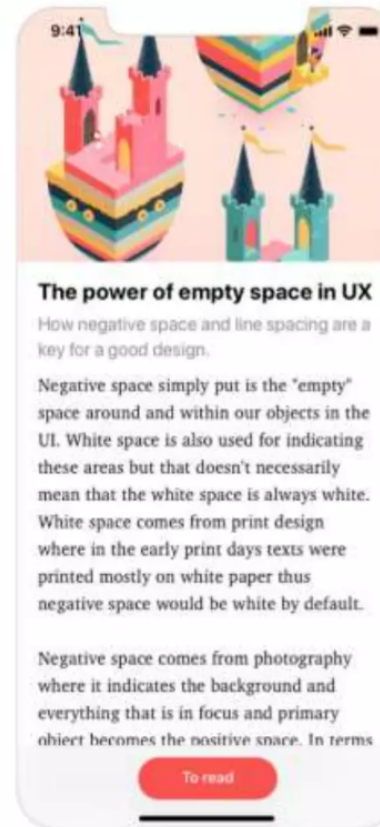
On the left side negative space is applied

on the right there isn't significant negative space considered.



# Visual hierarchy

How line spacing influences readability and text comprehension.



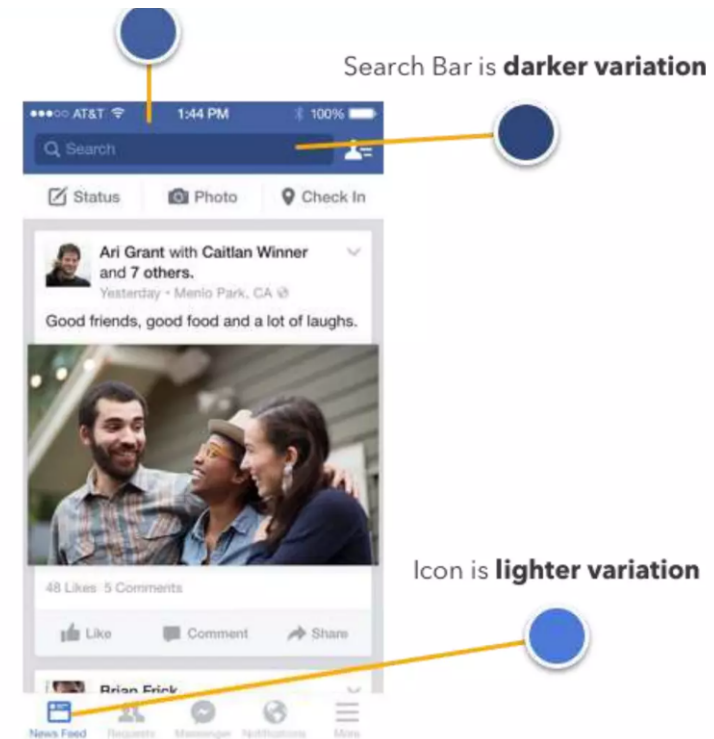
# UI Design Core Principles

## Visual Hierarchy

- Colors
  - Colors have a key role in expressing the brand and intents.
  - The more colors there are, the less impact each individual color will have.
  - Keeping decent contrast between colors keeps a design accessible.



The great use of brand colors in the facebook app.



# Choose the right color



Choosing the right colors for the actions

Oops, something is wrong here

Everything is completed, well done

Are you sure you want to do this?

Do this

Or, perhaps this



Instagram understands  
That the less colors  
the more impact they  
have



Before



After



---

“Good design is also an act of communication between the designer and the user, except that all the communication has to come about by the appearance of the device itself.

The device must explain itself.”

Donald Norman

(Computer science researcher)



# UI/UX Tips

---

1. It's not just about UX. It's also about customer experience
2. Validate your assumptions with actual users
3. Performance is just as important as functionality and design
4. Use clear and simple navigation
5. Avoid "click here" links
6. A double-scroll is poor UX
7. Use clear, recognizable, and consistent icons
8. Align fonts for mobile
9. Show informative error messages
10. Keep even spacing
11. Avoid too much animation, especially in critical apps

12. Keep a clear distinction between primary and secondary buttons

This block compares two design approaches for login forms. On the left, a form titled 'LOG IN' has three buttons: 'LOGIN ME' (dark blue), 'SIGN UP' (dark blue), and 'FORGOT PASSWORD?' (dark blue). Below it is a red circle with a white 'X'. On the right, a similar form has 'LOGIN ME' (dark blue), 'SIGN UP' (light blue), and 'Forgot Password?' (text link). Below it is a green circle with a white checkmark. To the right of these are two panels of icons: an alarm clock, a house, and an envelope. The first panel has the envelope icon with motion lines, and below it is a red circle with a white 'X'. The second panel has the envelope icon without motion lines, and below it is a green circle with a white checkmark.

13. Use good iconography

This block compares two ways to display an error message. On the left, a form with 'E-mail' and 'Password' fields shows an error with the text 'Error!' in red. Below it is a red circle with a white 'X'. On the right, a similar form shows an error with the text 'Password incorrect. If you don't remember your password, [reset it](#)' in red. Below it is a green circle with a white checkmark.

14. Avoid Confusing messages