Mobile Application Design and Development

Mobile Interface Design Concepts and UI/UX Design Fundamentals

"Practice safe design: Use a concept."

-Petrula Vrontikis-
Graphic Designer and Lynda Author

Learning outcomes of this lecture

At the end of this Lecture students will be able to

- Define the terms UI and UX

- List the principles of user interface design

- Categorize different UI components in Android

- Identify the UI design frameworks

- Recognize the important of UI Evaluation

Mobile Interface Design

- Interface design add meaning and value to the application

- Design will become attractive if universality design principles are applied.

- Designers face thread when many requirements are unclear and uncertain.

Are the above mentioned two words express the same idea???

Mobile UX – Us̲er Ex̲perience

- Enhancing user satisfaction of an app, while involving the user's opinions and feelings _before_, _during_, and _after_ their interaction with an app.

- Includes all aspects of the end-user's interaction with the company, and its products/services.

Cont'd... - Why UX in mobile?

UX of a mobile application influences how users observe it

Ex:

- Does app provides them value?
- Is the app easy to use?
- Does it help them to fulfill their goal?

Mobile UI – User Interface

- User interface is everything that the user can see and interact with

- In simply terms, "the design of the user interface is not the appearance of a product, but how it works"

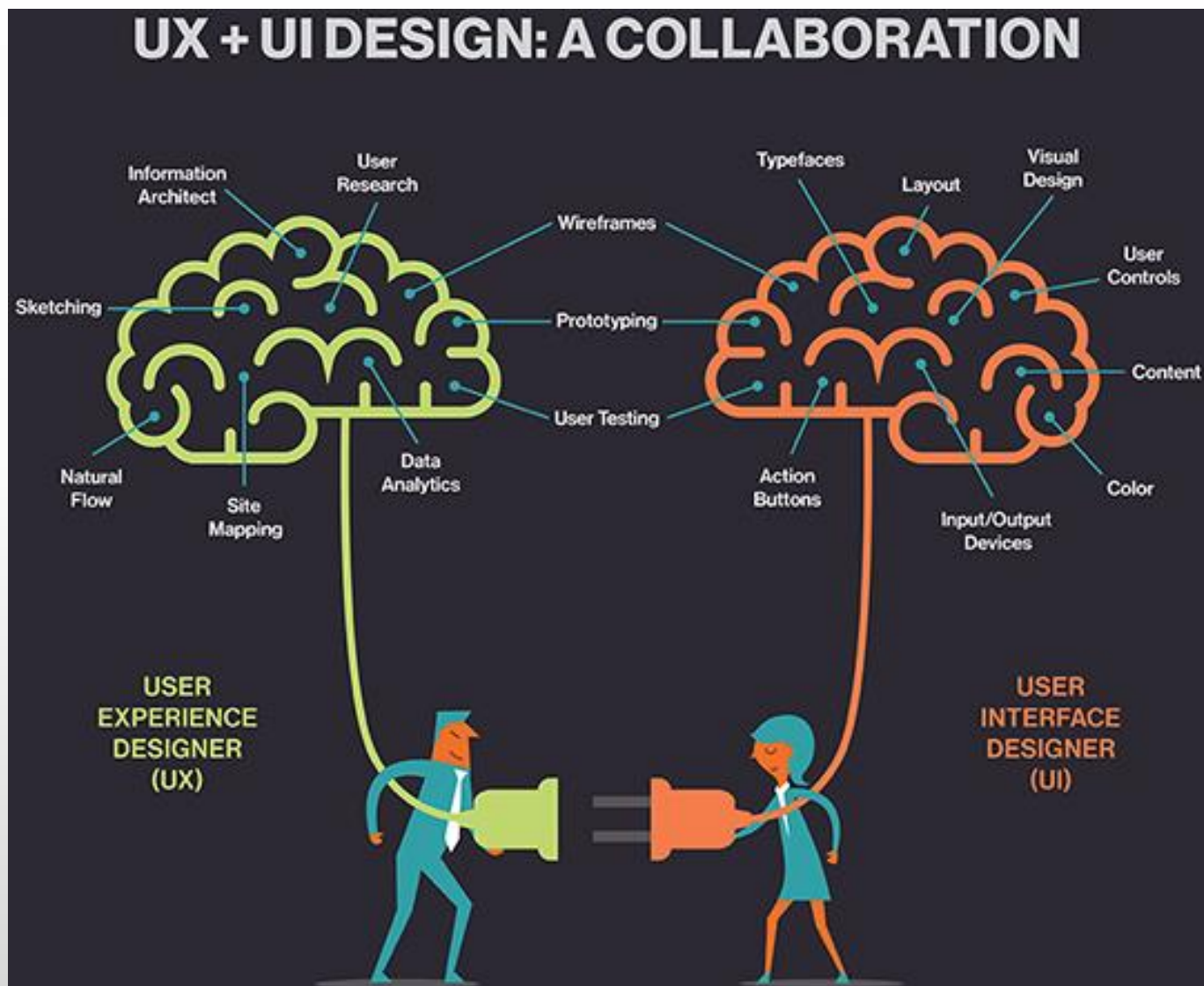- Interface design is the first thing that users will see, therefore, it directly effects the user's view

Cont'd... - Why UI in mobile?

Visual elements greatly impacts an emotional connection with the user

Ex:

- Does the colour attract the user?
- Are the elements are placed properly?

Different between UX&UI

UX + UI DESIGN: A COLLABORATION

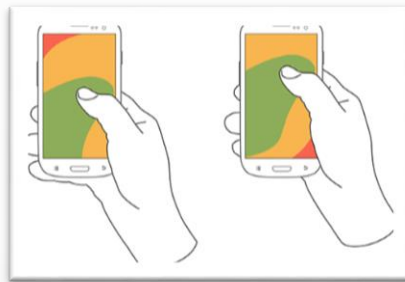# Principles of Mobile User Interfaces

Principles of Mobile User Interfaces

- **User-centric**

- **Clarity :** Manage the UI elements on screen

- **Familiarity :** Use universal concepts in design

- **Responsiveness**

- **Consistency :** Create a Seamless Experience across the application

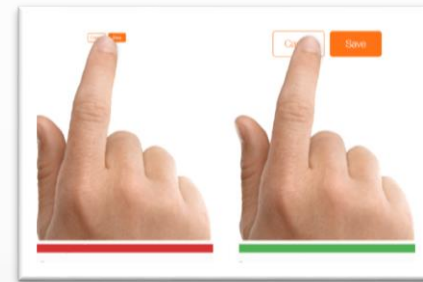- **Aesthetics**

- **Confirmation**

Cont'd…

- **Keep Navigation Simple**

  Ex:

Design Controls Based on Hand Position

Make Interface Elements Clearly Visible

- **Keep Content to a Minimum / brief**

- **Reduce the Inputs Required from Users**

Reference: https://cdn-images-1.medium.com/max/1600/1*o_F6med_aCMNQ9zx3Y3tBg.png
https://cdn-images-1.medium.com/max/1600/1*0WzaG6f9H4_OM06b7mqnPQ.png

Cont'd…

Principles of Mobile Interface Design:

videoplayback.mp4

Reference: https://www.youtube.com/watch?v=XS0Qd7hLPhw

# Principles of UI Components

Principles of UI components
Based on Android

- Android provides a variety of pre-built UI components such as,
  - **Layouts**
  - **Notification**
  - **Menus**
  - **Dialogs**
  - **Toast**

    and etc**.**
  - **Other common elements** (Buttons, Text fields and etc.)

Cont'd…

- A layout defines the structure for a user interface in your app

  - **Linear Layout**

    This layout aligns all children in a single direction, vertically/horizontal

Reference: https://developer.android.com/images/ui/linearlayout.png
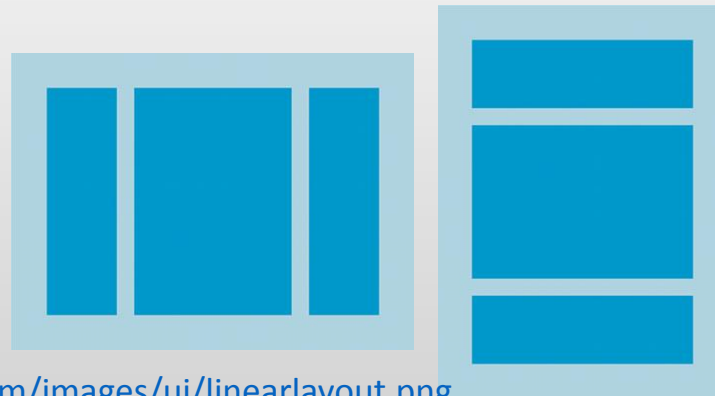
Cont'd...

- **Relative Layout**

    displays child views in relative positions to,

    - Sibling elements
    - Parent

Cont'd…

- **Constraint Layout**
  - This layout provide feature to position and size widgets in a flexible way

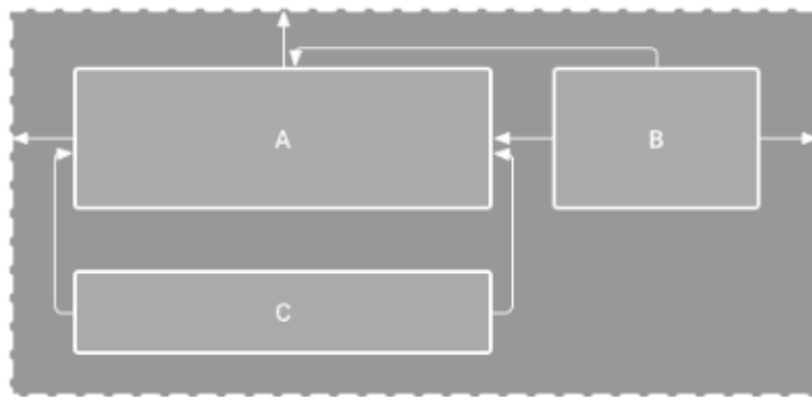 - Works similar to relative layout but more flexible than that.

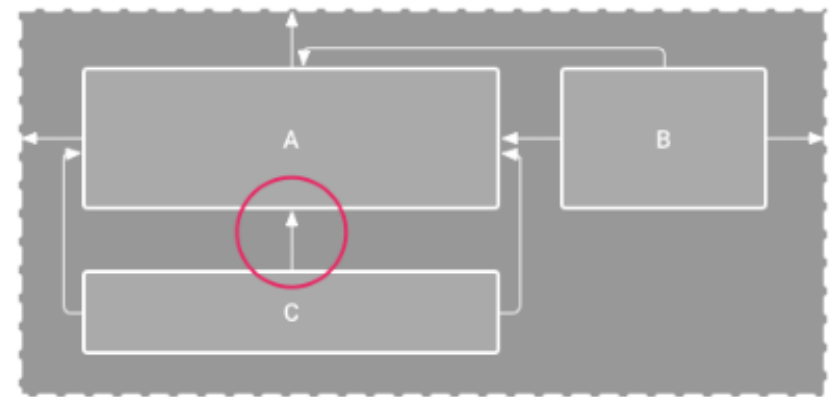**Figure 1.** The editor shows view C below A, but it has no vertical constraint

Figure 2. View C is now vertically constrained below view A

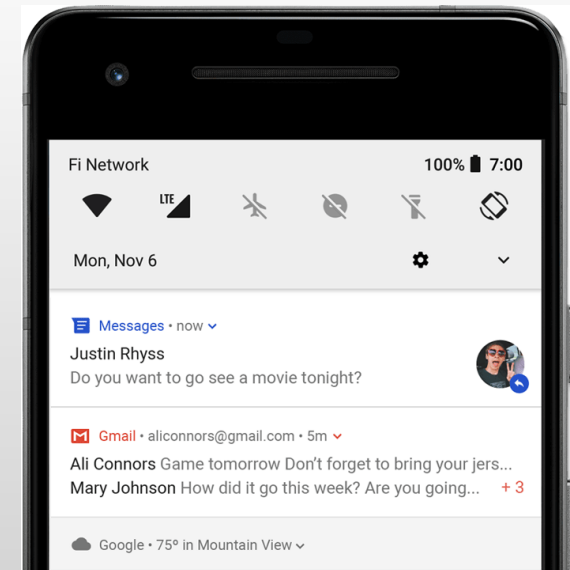Reference: https://developer.android.com/training/constraint-layout/

Cont'd…

Other available layouts,

- **Adapter View**

- **Grid View**

- **Table Layout**

- **Absolute Layout**

- **Frame Layout**

Cont'd… Notification
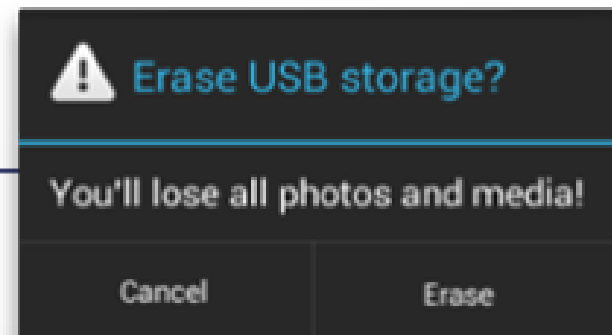
- A message displays outside the app's UI to provide the user with,

  Reminders

  Communication from other people

  Timely information from the app

- Users can tap the notification to open an app/take an action directly from the notification

Reference:

https://developer.android.com/images/ui/notifications/notification-drawer_2x.png
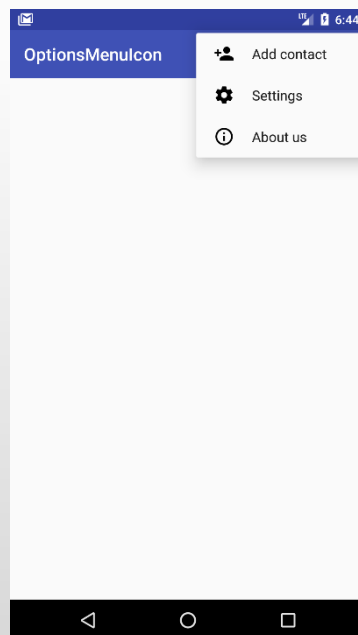
Cont'd… Dialogs

- Small window that prompts the user to make a decision before they can proceed.

- Dialog box does not fill the screen

- Consists of subclasses
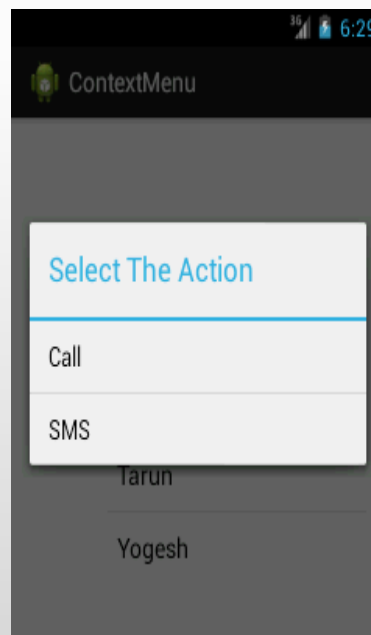 - o AlertDialog
  - o DatePickerDialog/TimePickerDialog

Reference: https://developer.android.com/images/ui/dialogs.png

Cont'd... Menus

- This is a common component in many application, there are three standard menus,
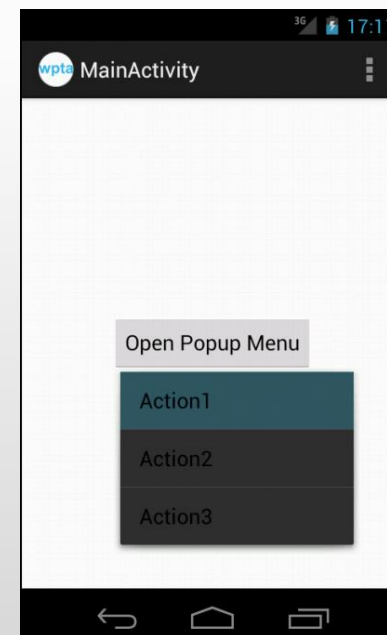
**Options menu**   **Context menu**   **Popup menu**

Reference:
http://wptrafficanalyzer.in/blog/wp-content/uploads/2012/07/popup_menu_demo.png
https://www.codingdemos.com/wp-content/uploads/2017/10/Android-Options-Menu-Icon.png

Cont'd... Toasts

- Provides simple feedback about an operation.

- Only uses the space required for the message while the current activity remains visible and interactive.

- Toasts automatically disappear after a timeout.

Reference: https://developer.android.com/images/toast.png
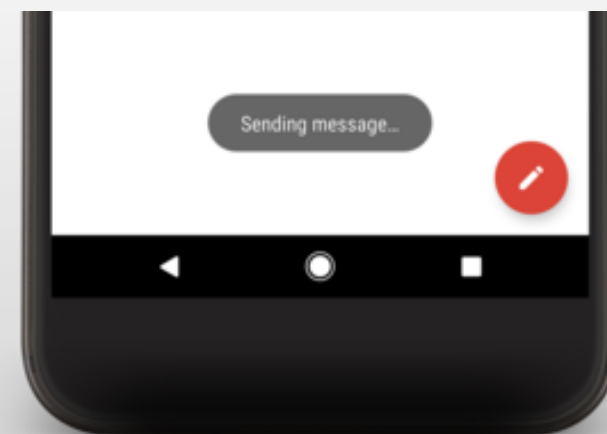
Mobile UI Design Frameworks

Mobile UI Design Frameworks

- The hybrid development of apps makes life easier for developers

- Developers can write once and create mobile applications that run on the main platforms without any additional effort.

- Next slide list some frameworks help to build mobile hybrid apps

Cont'd…

- Famo.us

- Ionic

- jQuery Mobile

- Onsen UI

- Kendo UI

- Sencha Touch

- Mobile Angular UI

Mobile UI Evaluation

Cont'd…

- Mobile UI evaluation is very important and it's compulsory to make sure the app meets the expectations

- All the principles we discussed has to be tested here.

Cont'd…

Key points to consider while testing,

- **Screen Orientation / Resolution** –
  UI should be adaptable to any device with different screen size

- **Touch Screens / Touch Performance**
  o Multi-Touch vs. Single Touch Screens
  o Long Touch vs. Short Touch
  o Button Size and Position

- **Soft & Hard Keys**

Mobile UI Evaluation

- Overall color scheme/theme of the device

- Style and color of icons

- Progress indicators when pages are loading

- Menus and how they are invoked and the typical items they contain

- Overall responsiveness of applications on this device

Cont'd…

Available Tools for UI Evaluation

- **Google chrome extension**

- **Screenfly**

- **Browser Stack**

Summary

Topics we discussed today,

1. Mobile Interface Design

2. User Experience and User Interface

3. Principles of Mobile User Interfaces

4. Principles of UI components

5. Mobile UI design frameworks

6. Mobile UI Evaluation

References

1. https://clearbridgemobile.com/mobile-app-design-fundamentals-user-experience-user-interface/

2. https://developer.android.com

3. https://www.tutorialspoint.com

Questions???

Thank You!!!