android APP DEVELOPMENT

LAB MANUAL

Dr. Zeeshan Bhatti

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PREFACE

This is preface to Android studio Lab Manual

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COURSE CONTENT

Course Objectives *

1. To able to understand the fundamental concepts of Mobile Operating System
2. To be able to design User Interface for Mobile apps.
3. To be able to develop complete mobile apps on their own.

Learning Outcomes*

1. Discuss different architectures & framework for Mobile Application development.
2. Develop mobile applications using current software development environments.
3. Compare the different performance tradeoffs in mobile application development.

Course Content *

Mobiles Application Development Platform; HTML5 for Mobiles; Android OS: Architecture, Framework and Application Development; iOS: Architecture, Framework; Application Development with Windows Mobile; Eclipse; Fragments; Calling Built-in Applications using Intents; Displaying Notifications; Components of a Screen; Adapting to Display Orientation; Managing Changes to Screen Orientation; Utilizing the Action Bar; Creating the User Interface; Listening for UI Notifications; Views; User Preferences; Persisting Data; Sharing Data; Sending SMS Messages; Getting Feedback; Sending Email; Displaying Maps; Consuming Web Services Using HTTP; Web Services: Accessing and Creating; Threading; Publishing, Android Applications; Deployment on App Stores; Mobile Programming Languages; Challenges with Mobility and Wireless Communication; Location-aware Applications; Performance/Power Tradeoffs; Mobile Platform Constraints; Emerging Technologies..

Text / Reference Books *

1. Professional Android application development, Reto Meier, Wrox Programmer to Programmer, 2015.
2. iOS Programming: The Big Nerd Ranch Guide, Conway, J., Hillegass, A., & Keur, C., 5th Edition, 2014.
3. Android Programming: The Big Nerd Ranch Guides, Phillips, B. & Hardy, B., 2nd Edition, 2014.

WEEKLY COURSE PLAN

WEEK 1: Introduction to Android studio

Lecture Topics / Lab.Work Topics *

Introduction to Mobile Application Development, Introduction to Android Studio, Download and Install Android Studio, Develop the First Hello World App, Create a Simple Counter App in Android

WEEK 2: Design UI Components in Android

Lecture Topics / Lab.Work Topics *

Basic UI Components in Android Studio, Use of Constraint Layout, Use Attribute Editor to change Properties of Objects. Add onClick Action Listener, Create a Tasbeeh App in Android.

WEEK 3: Use of Java in Android

Lecture Topics / Lab.Work Topics *

Import images and Sound inside Android, use OnClick event on Images, Use Java code to change images, Play music/sound files, Create a Ziker App, Create a Roll Dice App

WEEK 4: Multiple Activites with Intents

Lecture Topics / Lab.Work Topics *

Create Complex UI elements in Android, use Multiple Activity and use of INTENTS to switch between activities, Create a Login and Registration App in Android.

WEEK 5: Click Event Listener

Lecture Topics / Lab.Work Topics *

Create a Calculator App in Android, use of OnClick Event Listener and Intents.

WEEK 6: Linear Layout and Web View

Lecture Topics / Lab.Work Topics *

Understand Linear Layout (Horizontal and Vertical). Use Web View to display HTML Pages in Android Activity. Create Food Restaurant Menu Card App, Create a Food Recipe App

WEEK 7: Card View with Nested Linear Layout

Lecture Topics / Lab.Work Topics *

Learn to use Card View with Nested Linear Layout. Create complex Layout Structure

WEEK 8: Complex App UIO design

Lecture Topics / Lab.Work Topics *

Create University Notes App Layout, Create Stories reading Book App, using Card View, Linear layout, Nested Linear Layout, Web View.

WEEK 9: Android Activity Lifecycle

Lecture Topics / Lab.Work Topics *

What is Android Activity Life Cycle. Create app to demonstrate Android Activity Life Cycle.

WEEK 10: Android Fragments and Activites

Lecture Topics / Lab.Work Topics *

What are Fragments in Android. How are Fragments different from Activities. Create a App demonstrating Fragments, Create a Tourism Guide App for any Location/City

WEEK 11: Navigation Drawer UI

Lecture Topics / Lab.Work Topics *

Create a COVID-19 data registration APP, Create My CV App using Fragments and Activities, Create Islamic Dua App using Navigation Drawer

WEEK 12: Custom UI design with Share feature

Lecture Topics / Lab.Work Topics *

Learn to create Custom UI components in Android Studio. Custom Button design. Custom Gradient Background, Custom Shape object. Share to external App feature. Create Quotes App using Navigation Drawer and Custom Activity UI.

WEEK 13: SQLite Database

Lecture Topics / Lab.Work Topics *

Types of Database used in Android Studio, SQLite Database introduction. Create SQLite based CRUD app to demonstrate Create database code, Update record, delete record, read record.

WEEK 14: Firebase Database

Lecture Topics / Lab.Work Topics *

What is Firebase Database, how to connect Android Studio with Firebase server, How to connect you app with Firebase, Read, Update, Write, Delete operations in Firebase.

WEEK 15: Final Android App Project

Lecture Topics / Lab.Work Topics *

Create a complete App using SQLite or Firebase Database.

WEEK 16: Deploying you App

Lecture Topics / Lab.Work Topics *

Create certificates of your App, add Google AddWord account for adds, upload all your apps on Google Play store. Revision.

ANDROID MOBILE APPLICATION DEVELOPMENT

By: Dr. Zeeshan Bhatti

Each student is required to complete the following Lab project works individually. For each project, take Screenshot of the code and results/App output, and create PDF file and Upload it on LMS.

It is required/Compulsory for each student to Watch the given Video Lectures/Tutorials in order to complete the lab projects. Write your Name/Roll Number and status of project (completed) under the comments of each video.

WEEK-1 : INTRODUCTION TO ANDROID STUDIO

Task 1: Download and Install Android Studio.

Every student must download and install Android Studio in this personal systems.

1. Download Android Studio from https://developer.android.com/
2. Install Android Studio (You will need internet connection during installation process. There are 5 stages.
   1. Download Android Studio (https://developers.google.com/)
   2. Install the Basic Setup. (While installing it will download More Files from Internet)
   3. After Downloading additional files, it will again Install those Files.
   4. Run Android Studio (for the First Time), While running it will again download few files and Install Them.
   5. Install AVD (Android Virtual Device). AVD is a Mobile Simulator Device that is used to run Android App on Windows. Again, Download SDK from Internet and install it from the AVD manager.

Watch Video Lecture on @CodeWithZeeshanAcademy	
DOWNLOAD हिन्दी / اردو android studio chipmunk 2023	**HOW TO DOWNLOAD ANDROID STUDIO FOR WINDOWS 11** https://bit.ly/3UJWbPD

Task 2: Develop the First Hello World App.

Create your First “Hello World” App in Android Studio with simple TextView. Run the App using AVD Emulator.

Watch Video Lecture on @CodeWithZeeshanAcademy	
हिन्दी / اردو CREATE FIRST APP IN Android Studio Hello World	**CREATE FIRST ANDROID APP IN ANDROID STUDIO** https://bit.ly/3OdMdUi

Task 3: Create a simple Counter App in Android Studio.

The requirements of this app are that there needs to be a Count Button, which increments a number and display it on screen ever time the button is clicked as shown in figure below.

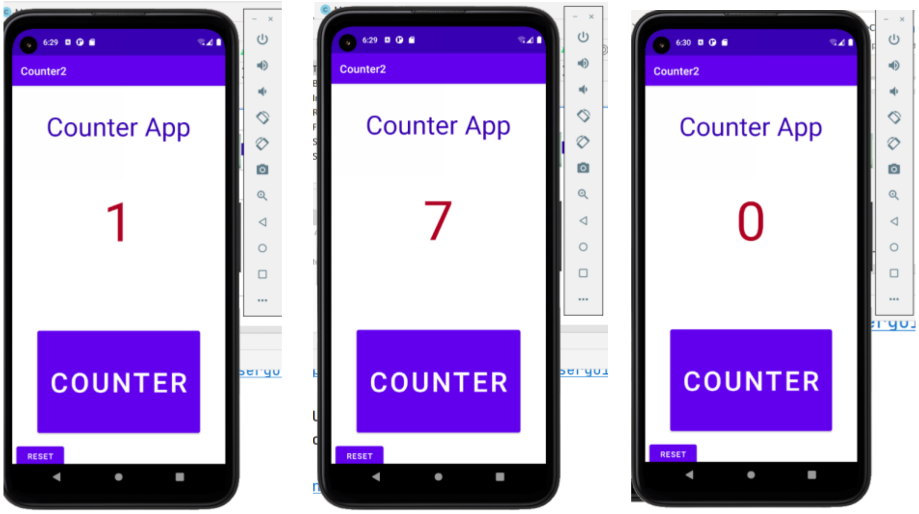


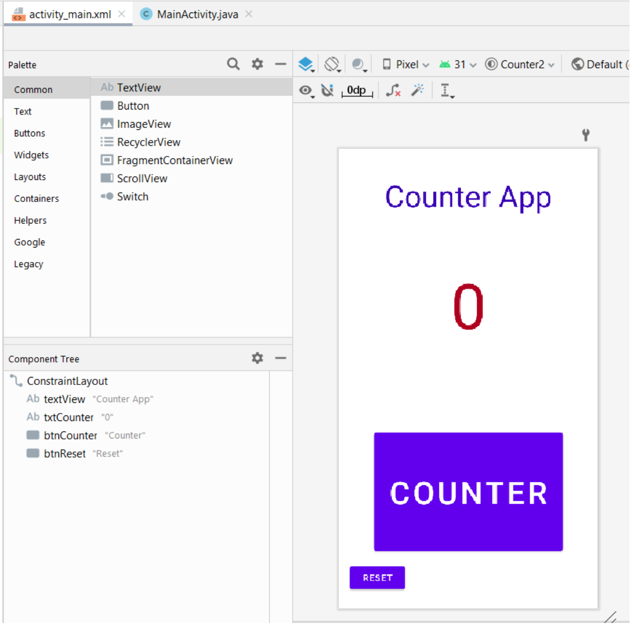
Figure 1: Counter APP UI

Watch Video Lecture on @CodeWithZeeshanAcademy	
हिन्दी / اردو COUNTER APP IN Android Studio Counter App 0 COUNTER	Create a Counting App in Android Studio https://bit.ly/3TtYjui

SOLVED:

To develop the above app, create the widgets as shown in the figure below, and write the code in Java file.

1. Create New Project with “Blank Activity”
2. Name Your Project, “Counter App” , Select JAVA as language and correct API version.
3. Design your User Interface with Constraint Layout as shown in Figure 2.



ConstraintLayout
textView "Counter App"
txtCounter "0"
btnCounter "Counter"
btnReset "Reset"

Figure 2: UI design of Counter AP with Component TREE

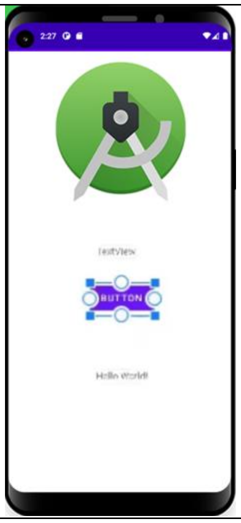
JAVA SOURCE CODE in “ActivityMain.java:

```
public class MainActivity extends AppCompatActivity {

    int counter;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        TextView txtCount = findViewById(R.id.txtCounter);
        Button btnCount = findViewById(R.id.btnCounter);
        Button btnReset = findViewById(R.id.btnReset);

        counter=0;
         //Button OnClick Event listener method
        btnCount.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                counter++;
                txtCount.setText(""+counter);

            }
        });
```

```
            btnReset.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                    counter=0;
                    txtCount.setText(""+counter);
                }
            });

        }
    }
```

WEEK-2 : DESIGN UI COMPONETS IN ANDROID

Task 4: Basic UI components using Constraint Layout

Learn the Basic of Android GUI and Design the basic App with Multiple Components Constrained. Run the APP in AVD Emulator. **Watch Video Lecture on @ZeeshanAcademy** Learn Android Studio User Interface | Basics of Android Studio 2021 App Development L-5 https://youtu.be/K-NDSoQanCI	

Task 5: Create a Tasbeeh App in Android Studio.

The requirements of this app are that there needs to be a 5 buttons, button one should count the Tasbeeh, then each separate button for limiting the count to 33 times, 100 times, No limit and reset button, which increments a number and display it on screen ever time the button is clicked as shown in figure below.

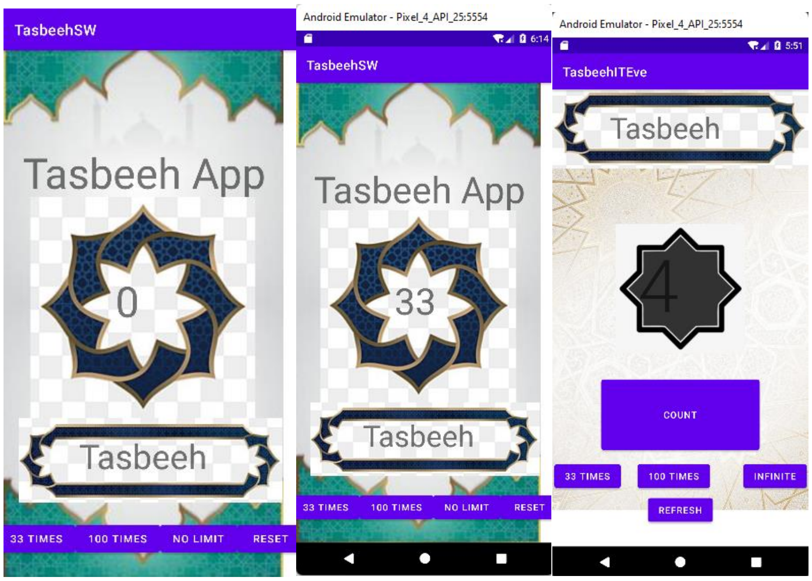


Figure 3: Final UI design of the Tasbeeh App

Watch Video Lecture on @CodeWithZeeshanAcademy	
हिन्दी / اردو TASBEEH [COUNTING] APP IN Android Studio Tasbeeh App Tasbeeh	Create a full Tasbeeh App in Android Studio https://bit.ly/3Am4wks

JAVA SOURCE CODE in “ActivityMain.java:

Java Code for TAsbeeh App :

```
package com.usindh.tasbeehsw;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    int counter;
    int limit;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```
TextView txtCount = findViewById(R.id.txtCounter);
TextView btnCount = findViewById(R.id.btnTasbeeh);
Button btn33 = findViewById(R.id.btn33);
Button btn100 = findViewById(R.id.btn100);
Button btnReset = findViewById(R.id.btnReset);
Button btnnoLimit = findViewById(R.id.btnNolimit);

counter=0;
limit=0;

btnCount.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        //counter++;
        if(limit==33 && counter<33){
            counter++;
        }
        else if(limit==100 && counter<100){
            counter++;
            }
            else if(limit==0){
                counter++;
            }

        txtCount.setText(""+counter);
    }
});

btnReset.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        counter=0;
        txtCount.setText(""+counter);
    }
});

btn33.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        limit=33;
    }
});

btn100.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        limit=100;
    }
});
btnnoLimit.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        limit=0;
```

```
            }
        });
    }
}
```

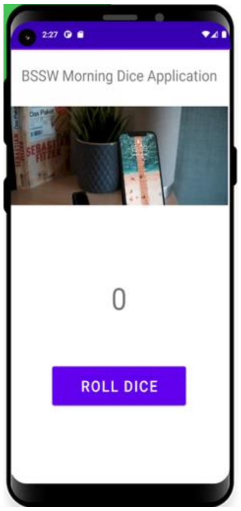
WEEK-3 : USE OF JAVA IN ANDROID

Task 6: Create a Ziker Tasbeeh App with sound in Android Studio

The requirements of this app are that there needs to be a buttons with sound played every time the button is clicked. The Sound of Ziker can be of and Islamic Ziker.

Task 7: Develop a Roll Dice App .

Create a Simple dice app with simple GUI that shows a TextView in Center and a Button. The must have an Image as header. When Button is clicked, a Random Number is generated between 1 and 6 and shown on the TextView as Shown in Figure 4.



Watch Video Lecture on @ZeeshanAcademy	
Lecture 4 Develop First Android App Roll Dice App For Absolute Beginner androidstudio	Develop First Android App For absolute Beginner | Dice App from Scratch in Android 2021 | L-4 https://youtu.be/0sWtsem8BbA

Source Code Solution:

```
// A Method to generate Random Number
        public void rollDice(View view) {
            //EditText txt = (EditText) findViewById(R.id.txtDiceNo);
            //String s  = findViewById(R.id.txtDiceNo);

            //EditText st = (TextView) findViewById(R.id.textView3);
            TextView te = findViewById(R.id.textView3);
            TextView dice = findViewById(R.id.txtDiceNo);

            double randNo = Math.random()*6+1;
            int randD = (int) Math.round(randNo);
            te.setText("Dice Rolled");
            dice.setText(""+randD);

            String print = dice.getText().toString();
            Toast.makeText(getApplicationContext(), print, Toast.LENGTH_SHORT).show();

          }
```

WEEK-4 : MULTIPLE ACTIVITES WITH INTENTS

Task 8: Create Login App in Android Studio

In this task, you have to create a Simple Login User Interface, with Header Image and Text fields to enter username and password, then button to login. Also create Second Activity for Registration page for new User with relevant fields.

Watch Video Lecture on @CodeWithZeeshanAcademy	
	Create Login App in Android Studio https://bit.ly/3X7tfCQ

Android Intents

Intents are asynchronous messages which allow Android components to request functionality from other components of the Android system. Intents can be used to signal to the Android system that a certain event has occurred. Other components in Android can register to this event via an intent filter.
Intents are send to the Android system via a method call, e.g. via the startActivity() method you can startactivities. Depending on how the Intent was constructed the Android system will run an receiver determination and determine possible components which can be started. If several components have registered for the sameintents the user can decide which component should be started.
For example an activity can send an intent to the Android system which starts another activity via the following code.

```
# Start the activity connect to the
# specified class

Intent i = new Intent(this, ActivityTwo.class);
//Or
// Intent I =  new Intent(getApplicationContext(), ActivityTwo.class);
startActivity(i);
```

***Intents* are instances of the android.content.Intent class.**

An Intent can contain data. This data can be used by the receiving component. For example your application can start via an *intents* a browser component. As data it may send the URL to the browser component which this browser should open and display.
Android supports explicit and implicit *Intents*.

A. Explicit Intents

Explicit intents explicitly defines the component which should be called by the Android system, by using the Java class as identifier.

The following shows how to create an *explicit intents* and send it to the Android system. If that class represents an*activity* Intent the Android system start it.

If you Send data from Activity to Activity

```
Intent i = new Intent(this, ActivityTwo.class);
i.putExtra("Value1", 100);
i.putExtra("Value2", "This value two ActivityTwo");
startActivity(i);
```

Receiving Data to Another Activity

//in JAVA file of Second Activity

```
Bundle intent = getIntent().getExtras();
int i  = intent.getInt(“Value1");
String n = intent.getString(“Value2");
```

Explicit intents are typically used within on application as the classes in an application are controlled by the application developer.

B. Implicit Intents

Implicit intents specify the action which should be performed and optionally data which provides data for the action.

For example the following tells the Android system to view a webpage. Typically the web browser is registered to thisIntent but other component could also register themself to this event.

```
//To open an External Website from your APP
Intent i = new Intent(Intent.ACTION_VIEW, Uri.parse("http://www.google.com"));
startActivity(i);

//To Open another Activity from your own APP
Intent ca = new Intent(getApplicationContext(), SecondActivity.class)
startActivity(ca);
```

If these *Intents* are send to the Android system it searches for all components which are registered for the specific action and the data type.

If only one component is found, Android starts this component directly. If several components are identifier by the Android system, the user will get an selection dialog and can decide which component should be used for the Intent.

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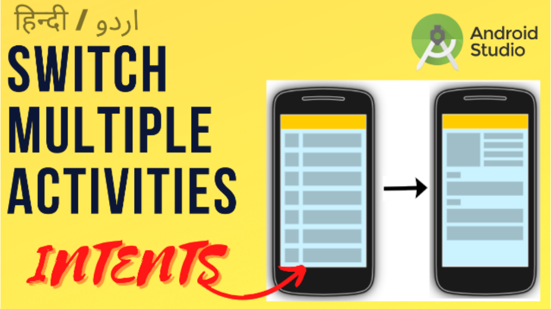


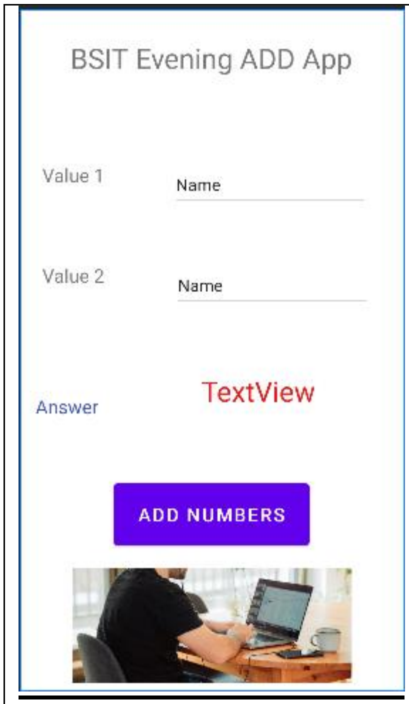
Use Intents to Switch Activities in Android Studio | How to switch activity in android studio

https://youtu.be/kuECFRl4JCU

WEEK-5 : CLICK EVENT LISTENER

Task 9: Develop and Simple calculator with ADD .

Create two text field, and a button. AS soon as the button is pressed, the value from both text fields is taken and addition is done. The result is displayed on another TextField.

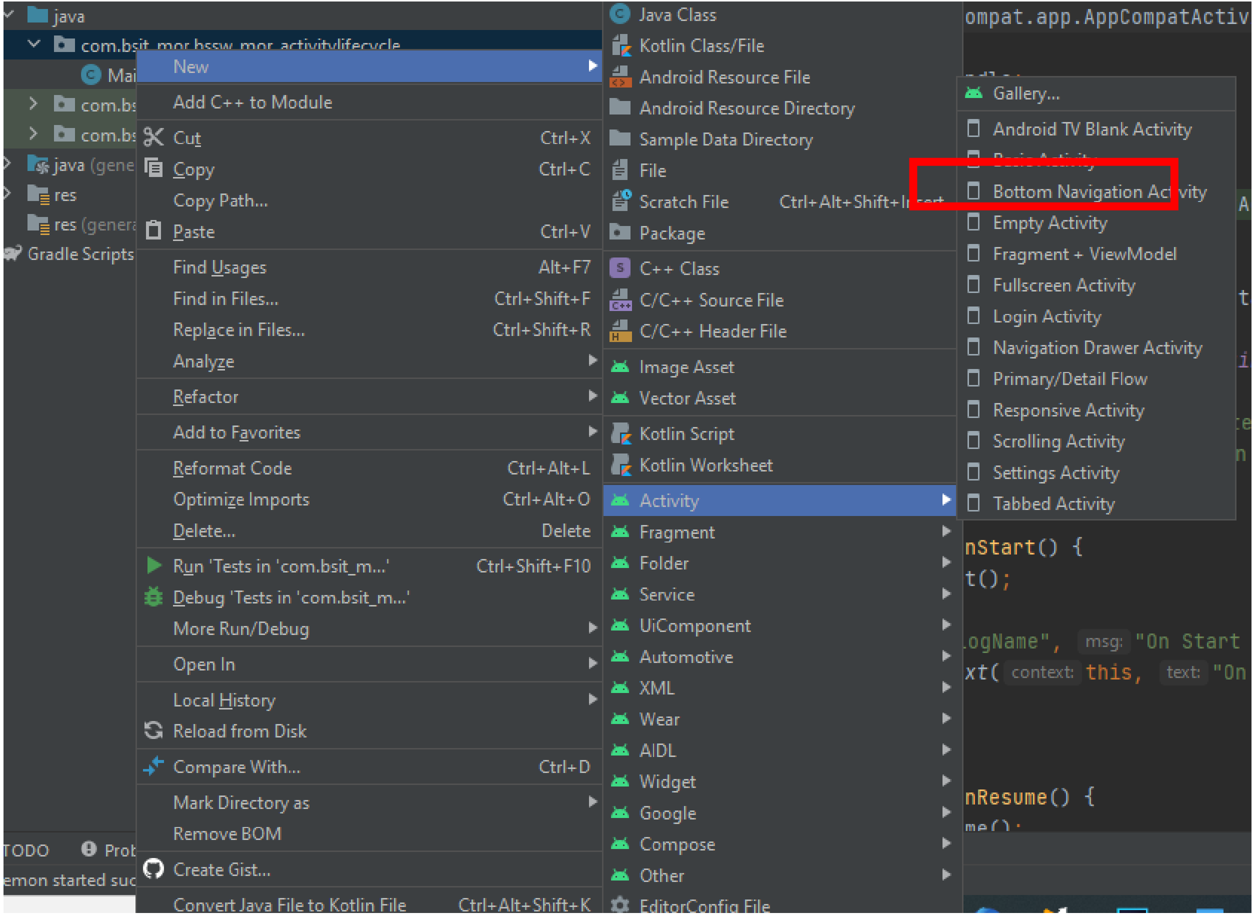


```
public void add(View view){

    //REad the Component from XML file
  TextView txt1  = findViewById(R.id.txtValue1);

  // REad the Text Data from the componetn and convert it into String
  String val1 = txt1.getText().toString();

  // Convert the string into Integer and assign it to int
  int no1 = Integer.parseInt(val1);

  //REad the Component from XML file
  TextView txt2  = findViewById(R.id.txtValue2);

  // REad the Text Data from the componetn and convert it into String
  String val2 = txt2.getText().toString();
  int no2 = Integer.parseInt(val2);

  TextView txtAns = findViewById(R.id.txtAnswer);
  int ans = no1 + no2;
  txtAns.setText(""+ ans);
}
```

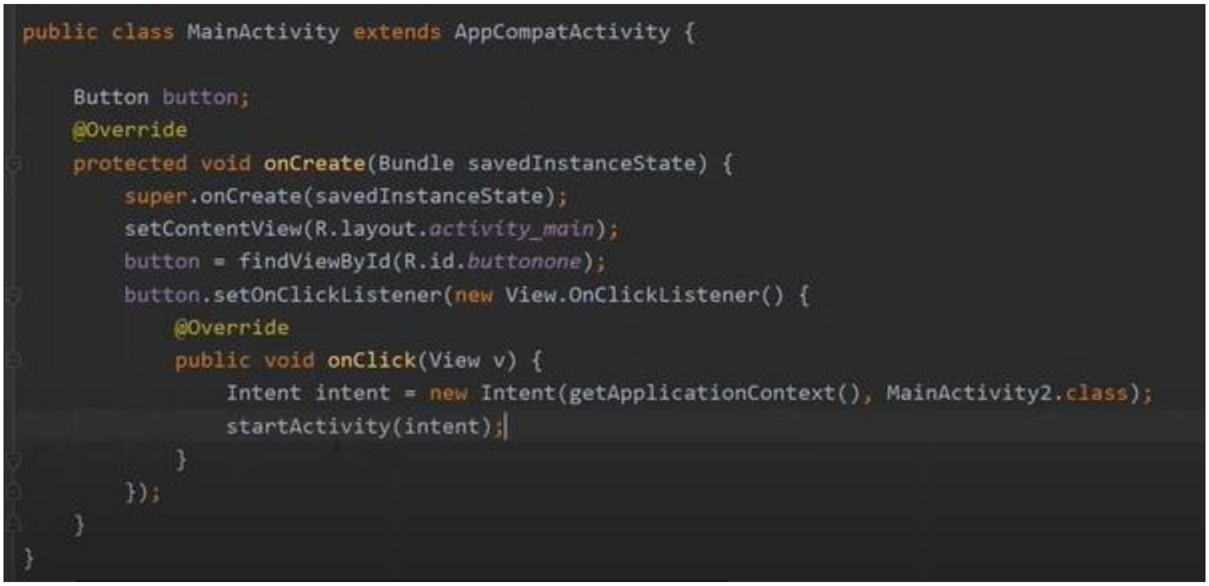
Watch Video Lecture on @CodeWithZeeshanAcademy	
Lecture 7 Create ADD Numbers App Android Studio 2021 Button onClick Event	How to create a Calculator App in Android with Add function | use java to create onClick event for add app on android. https://youtu.be/r63sHoOz-hA

Lecture : OnClick Event Listener and Intent for New Activity

1. Create a New Activity



2. Write the code in main Activity.java form to change activity using Intents as shown below.

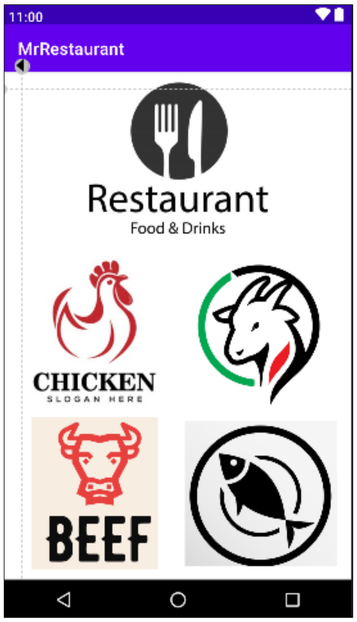


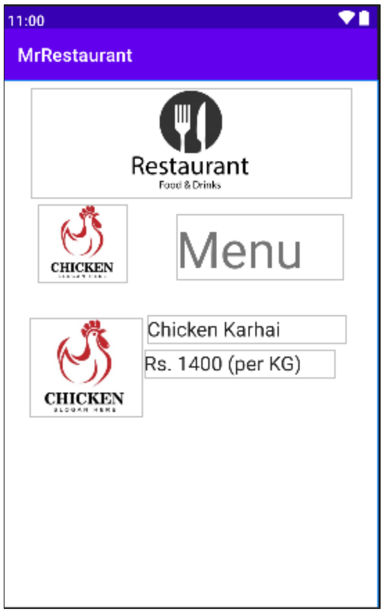
```
public class MainActivity extends AppCompatActivity {

    Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        button = findViewById(R.id.buttonone);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(getApplicationContext(), MainActivity2.class);
                startActivity(intent);
            }
        });
    }
}
```

WEEK-6 : LINEAR LAYOUT AND WEB VIEW

Task 10: Create a Food Restaurant Menu Card App

The requirement of this app is that the app contains main menu with at least 4 categories, i.e Chicken Menu, Mutton Menu, Beef Menu, Fish Menu. Then when user selects the menu, a new activity opens and it shows the list of menu items under that category, for the user to choose from.





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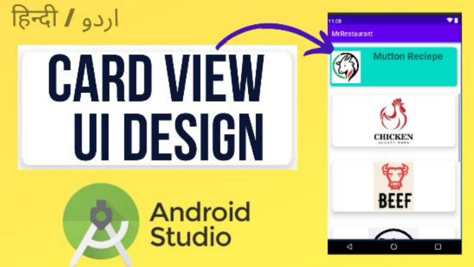
Task 11: Create a Food Recipe App

The requirement of this app is that the app contains main menu with at least 6 main categories, i.e Chicken recipes, Mutton recipes, Beef recipes, Fish recipes, etc. Then when user selects the menu, a new activity opens and it shows the list of recipes items under that category, for the user to choose from. Then when each recipe is shown, it gets displayed on another new activity.

Watch Video Lecture on @CodeWithZeeshanAcademy	
 हिन्दी / اردو CARD VIEW UI DESIGN Android Studio MrRestaurant Mutton Reciepe CHICKEN BEEF	**Create Card view in android studio | Card view design in Android studio** https://bit.ly/3GjAQYT

To Display a Webpage in your Activity,

1. Create a WebView Componetn inside the Ctivity,
2. Then in JAVA file, write the following code.

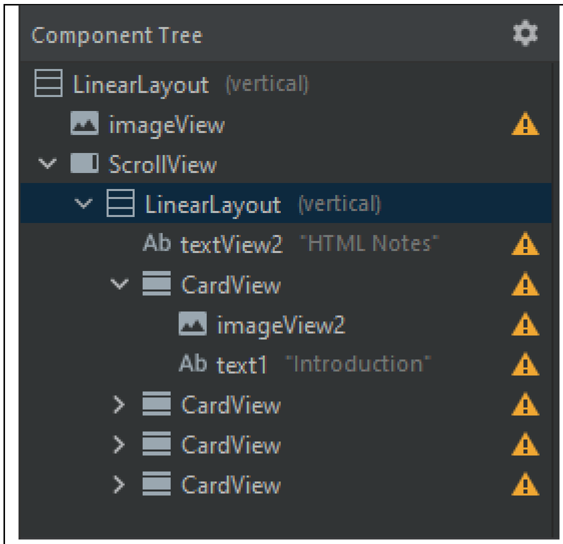
```
//create the WebView object
WebView storypage = findViewById(R.id.webView);

// create the settings page and read the default web settings on Android
WebSettings webSetting = storypage.getSettings();

//Load the html file in the WebView. The .html file must be in ‘assets folder’, under res
directory
// Note these is 3 backslahss ‘///’
storypage.loadUrl("file:///android_asset/story1.html");

// use settings to set the browser layout to mobile view.
webSetting.setUSeWideViewPort(false);
```

```
//Enable default scroll bars
storypage.setScrollBarStyle(View.SCROLLBARS_INSIDE_OVERLAY);
```

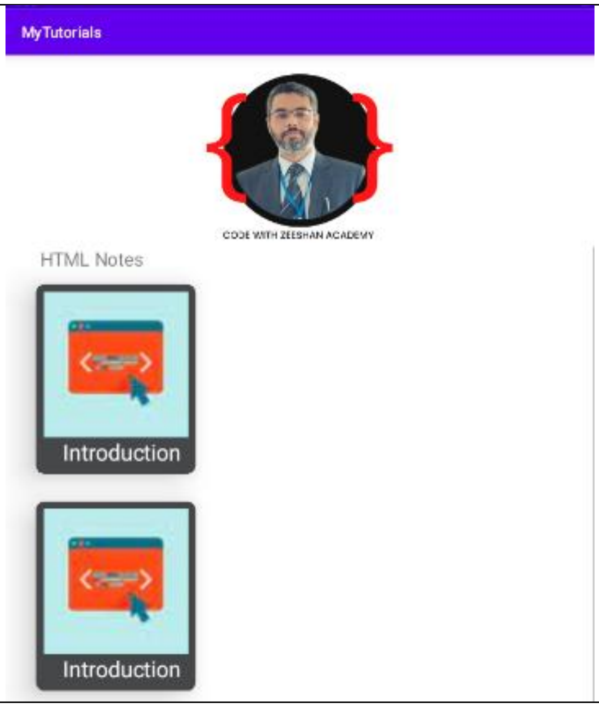
WEEK-7 : CARD VIEW WITH NESTED LINEAR LAYOUT

Task 12: Card View Layout Tutorial

Here are some example to create a Card View Layout with example code.



```
Component Tree
LinearLayout (vertical)
  imageView
  ScrollView
    LinearLayout (vertical)
      Ab textView2 "HTML Notes"
      CardView
        imageView2
        Ab text1 "Introduction"
      CardView
      CardView
      CardView
```

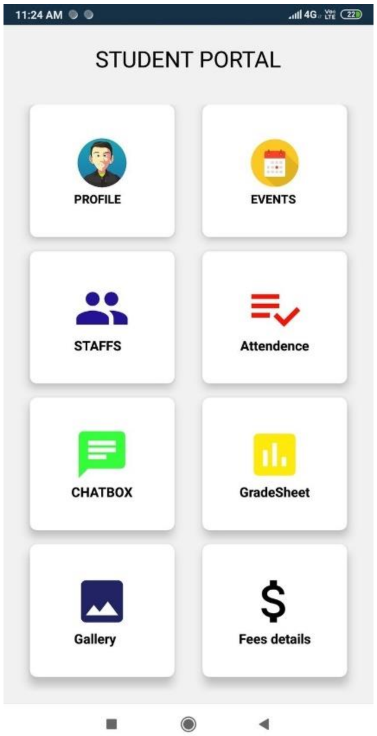


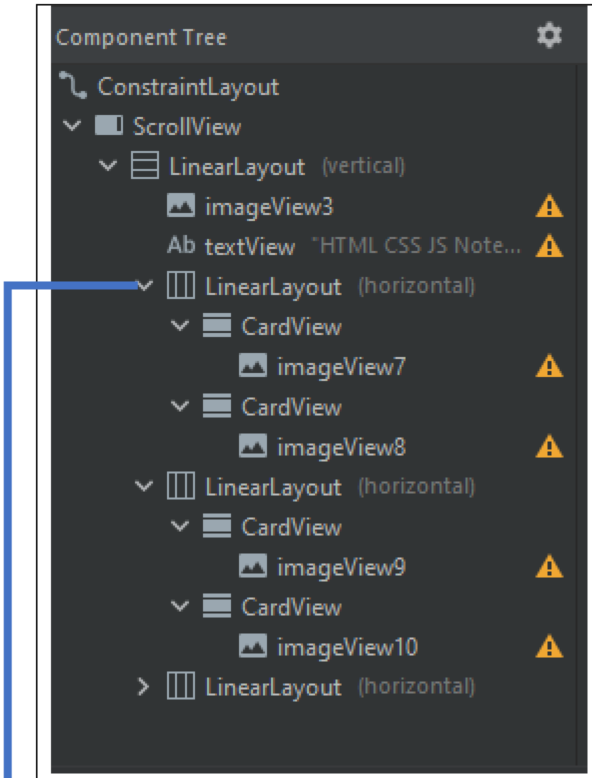
```
<androidx.cardview.widget.CardView
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_marginLeft="30dp"
    app:cardBackgroundColor="@color/material_dynamic_neutral30"
    app:cardCornerRadius="12dp"
    app:cardElevation="10dp"
    app:cardPreventCornerOverlap="true"
    app:cardUseCompatPadding="true"
    app:contentPadding="10dp">

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="200dp"
        android:layout_height="200dp"
        app:srcCompat="@drawable/web1"                                    />

    <TextView
        android:id="@+id/text1"
        android:layout_width="197dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="200dp"
        android:paddingLeft="20dp"
        android:text="Introduction"
        android:textAlignment="center"
        android:textColor="@color/white"
        android:textSize="30sp"                                                    />
</androidx.cardview.widget.CardView>
```

Watch Video Lecture on @CodeWithZeeshanAcademy	

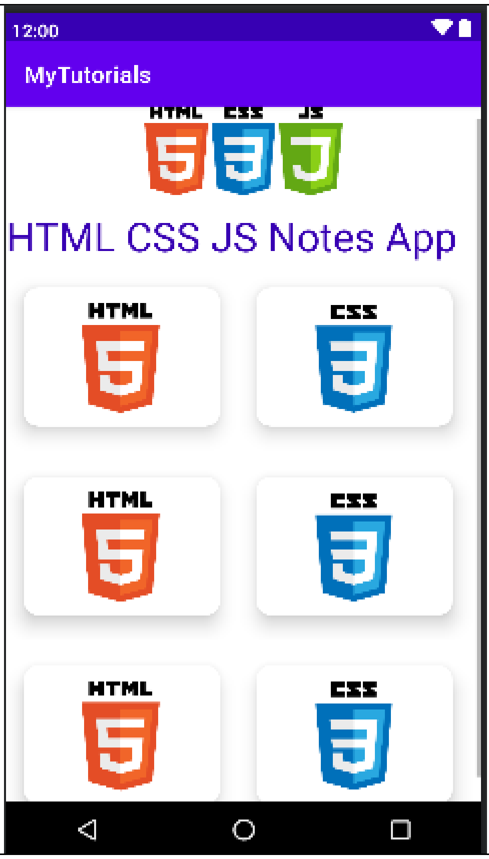
Task 13: Card View Layout 2

Create the following Card Layout

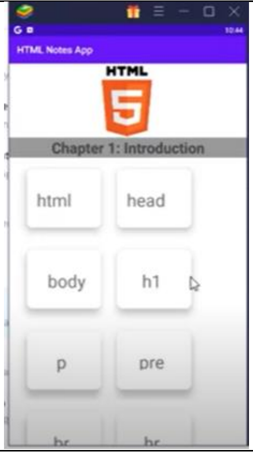




```
Component Tree
ConstraintLayout
  ScrollView
    LinearLayout (vertical)
      imageView3
      Ab textView "HTML CSS JS Note...
      LinearLayout (horizontal)
        CardView
          imageView7
        CardView
          imageView8
      LinearLayout (horizontal)
        CardView
          imageView9
        CardView
          imageView10
      LinearLayout (horizontal)
```



```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="horizontal">

    <androidx.cardview.widget.CardView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        app:cardCornerRadius="12dp"
        app:cardElevation="12dp"
        app:cardUseCompatPadding="true"
        app:contentPadding="10dp">

        <ImageView
            android:id="@+id/imageView7"
            android:layout_width="150dp"
            android:layout_height="100dp"
            app:srcCompat="@drawable/html"                                        />
    </androidx.cardview.widget.CardView>

    <androidx.cardview.widget.CardView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        app:cardCornerRadius="12dp"
        app:cardElevation="12dp"
        app:cardUseCompatPadding="true"
        app:contentPadding="10dp">

        <ImageView
            android:id="@+id/imageView8"
            android:layout_width="150dp"
            android:layout_height="100dp"
            app:srcCompat="@drawable/css"                                                                          />
    </androidx.cardview.widget.CardView>

</LinearLayout>
```

<table>
<tr><td colspan="2">Watch Video Lecture on @CodeWithZeeshanAcademy</td></tr>
<tr><td>
</td><td>How to create Card Layout in Android Studio | Android Card Layout tutorial
https://youtu.be/kn4ka4pwNSg</td></tr>
</table>

Practice Tasks

Once you have understood the basic Layout Concepts, and inorder to further improve, try to create layout design of the following APP.

- Create Facebook Card Layout
- Create Food Panda App Card Layout,
- Daraz,
- Instagram,
- Twitter. Etc etc.
- University Portal Layout

WEEK-8 : COMPLEX APP UI DESIGN

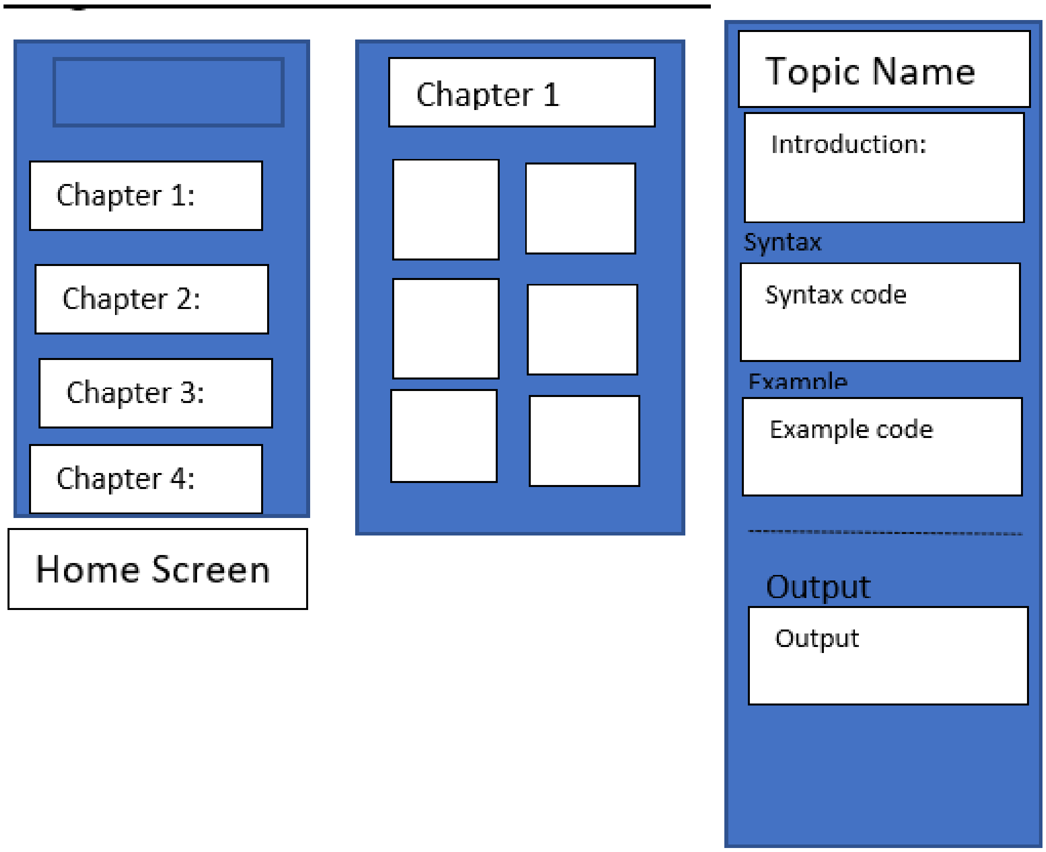
Task 14: Create a University Notes App.

Create a Notes/tutorials APP in Android on a particular subject, like HTML Notes App, or Android Notes App with Web view as discussed in the following requirements.

Requirement: App with Notes on HTML only. Complete App. With Main Screen Showing Various Chapters.

Then Second Screen Should show each topic inside the Chapter. Then Finally each topic notes should appear. The final notes screen should contain, Syntax, Example Code, and Final Output.

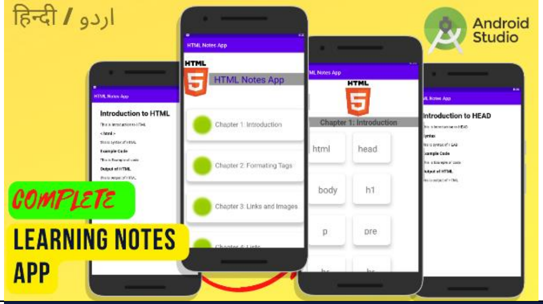
Design, (Adobe XD or Whimsical.com)



In design stage, you might also be required to design the following diagrams:

- ERD Diagram
- Use case Diagram

- Activity Diagram
- Process Diagram

<table>
<tr><td colspan="2">Watch Video Lecture on @CodeWithZeeshanAcademy</td></tr>
<tr><td>

हिन्दी / اردو
Android Studio
COMPLETE
LEARNING NOTES
APP
HTML Notes App
Introduction to HTML
Chapter 1: Introduction
Chapter 2: Formating Tags
Chapter 3: Links and Images
html
head
body
h1
p
pre
Introduction to HEAD

</td><td>Create Full Notes APP in Android Studio | Android App Development Tutorial | Create App in Android
https://bit.ly/3GiWpsN</td></tr>
<tr><td>

हिन्दी / اردو
LOAD
MULTIPLE DATA
ON
SINGLE ACTIVITY
android studio
DATA-1
DATA-2
DATA-3
StoryReadingApp
The Boy Who Cried Wolf
BACK
NEXT

</td><td>Load multiple pages on single activity in Android Studio | Show multiple html files in one activity
https://bit.ly/3AmW18O</td></tr>
</table>

App Idea 1. HTML Notes App
App Idea 2. CSS Notes App
App Idea 3. Multimedia Technology Nates App
App Idea 4. Java Programming Notes App
App Idea 5. Android App Development Notes App

CODING

To load multiple HTML files, on single activity, we need to pass extra information through INTENTS. This extra information will contain the "file path" to load and in main activity java file, we use Bundle class to read the extra file path from intent.

FIRST: on each Buton, we set onClick listenera and use the following code

```
btnhtml.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Intent ca = new Intent(getApplicationContext(), Chp1.class);
            ca.putExtra("keyFile", "file:///android_asset/htmlp.html");
            startActivity(ca);
        }
    });
```

In your first activity, pass the right URL in the onClick event (example for button one):

```
Intent i = new Intent(this, WebViewActivity.class);
i.putExtra("keyHTML","file:///android_asset/page_button_1.html");
startActivity(i);
```

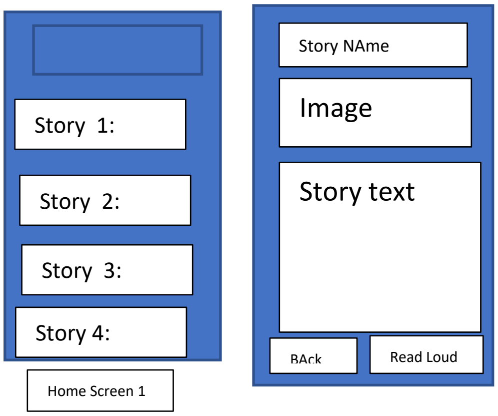
Then in your webview activity :

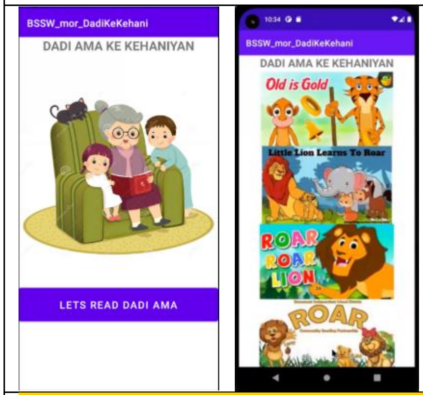
```
@Override
public void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout.some_layout);

// Read the extra path information from the Intent
  Bundle extras = getIntent().getExtras();
   String htmlFile = "file:///android_asset/default_page.html";

//check of variable is NOT empty and contains the path.
  if(extras !=null) {
      htmlFile = extras.getString("keyHTML");           // load the extra html file path in the variable.
   }

   webView = (WebView)findViewById(R.id.webview);

   webView.loadUrl(htmlFile);                //load the html file in the web view.
}
```

Task 15: Create a Stories Reading Book App.

Use internet to find free stories, then there needs to be two main activities. Show list of stories on main home screen and once it clicked it shows the stories on second activity.

Design, (Adobe XD or Whimsical.com)



COMPLETE STORY BOOK APP android studio हिन्दी / اردو My Story App The Boy Who Cried Wolf The Gold Queen Story C	How to create story app in android studio 2022 | How to make Story Book App in Android Studio https://bit.ly/3TEdctb
 BSSW_mor_DadiKeKehani DADI AMA KE KEHANIYAN LETS READ DADI AMA Old is Gold Little Lion Learns To Roar ROAR ROAR LION ROAR	Develop a Full Story Book reading App in Android Studio | What is Intent | OnClick ActionListener https://youtu.be/AjwzNmgJ9pQ
LOAD MULTIPLE HTML FILES IN ONE ACTIVITY android studio हिन्दी / اردو HTML-1 HTML-2 HTML-3 Chapter 1: Introduction html head body h1 p pre Introduction to HEAD	Amazing Technique to load Multiple HTML files on one Activity in Android https://bit.ly/3AjHkDe

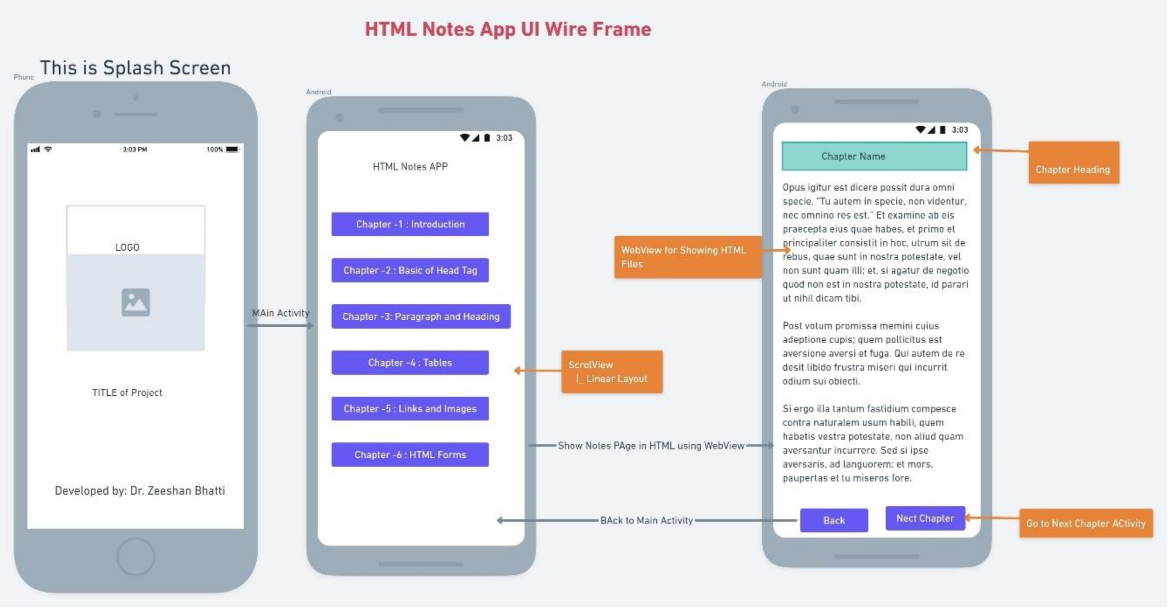
Website for stories.
https://momlovesbest.com/short-moral-stories-kids
https://ofhsoupkitchen.org/short-stories-with-morals

App Idea :

- Create a Poetry App
- Crate a Hadith App
- Create a Islamic Quotes App

Task 16: Create a Text to Speech App

Create a Text to speech app that reads you text automatically when a button is pressed. Design the abb using the following UI design as shown in Figure below. You can update your previous Story App to have this feature also.


HTML Notes App UI Wire Frame
This is Splash Screen
Phone
3:03 PM
100%
LOGO
TITLE of Project
Developed by: Dr. Zeeshan Bhatti
MAin Activity
Android
3:03
HTML Notes APP
Chapter -1 : Introduction
Chapter -2 : Basic of Head Tag
Chapter -3: Paragraph and Heading
Chapter -4 : Tables
Chapter -5 : Links and Images
Chapter -6 : HTML Forms
ScrolView
|_ Linear Layout
Show Notes PAge in HTML using WebView
BAck to Main Activity
WebView for Showing HTML Files
Android
3:03
Chapter Name
Chapter Heading
Back
Nect Chapter
Go to Next Chapter ACtivity

Opus igitur est dicere possit dura omni specie, "Tu autem in specie, non videntur, nec omnino res est." Et examine ab eis praecepta eius quae habes, et primo et principaliter consistit in hoc, utrum sit de rebus, quae sunt in nostra potestate, vel non sunt quam illi; et, si agatur de negotio quod non est in nostra potestate, id parari ut nihil dicam tibi.

Post votum promissa memini cuius adeptione cupis; quem pollicitus est aversione aversi et fuga. Qui autem de re desit libido frustra miseri qui incurrit odium sui obiecti.

Si ergo illa tantum fastidium compesce contra naturalem usum habili, quem habetis vestra potestate, non aliud quam aversantur incurrere. Sed si ipse aversaris, ad languorem: et mors, paupertas et tu miseros fore.

CODE for Button READ STORY (Text to Speech)

To add "Read Aloud" feature in your app where we your Text is Read out automatically, using "Text-To-Speech" feature in Android Studio:

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import java.util.Locale;

public class MainActivity extends AppCompatActivity {

    EditText Text;
    Button btnText;
    TextToSpeech textToSpeech;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Text = findViewById(R.id.Text);
        btnText = findViewById(R.id.btnText);

        // create an object textToSpeech and adding features into it
        textToSpeech = new TextToSpeech(getApplicationContext(), new 
TextToSpeech.OnInitListener() {
            @Override
            public void onInit(int i) {

                // if No error is found then only it will run
                if(i!=TextToSpeech.ERROR){
                    // To Choose language of speech
                    textToSpeech.setLanguage(Locale.UK);
                }
            }
        });

        // Adding OnClickListener
        btnText.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                textToSpeech.speak(Text.getText().toString(),TextToSpeech.QU
EUE_FLUSH,null);
            }
        });

    }
}
```

//textToSpeech.**stop()** ; ///This method stop the speak.

Reference Websites:

1. https://www.tutorialspoint.com/android/android_text_to_speech.htm
2. https://www.geeksforgeeks.org/
3. https://www.tutorialspoint.com/android
4. https://abhiandroid.com/
5. https://google-developer-training.github.io/android-developer-fundamentals-course-concepts-v2

Watch Video Lecture on @CodeWithZeeshanAcademy	
Lecture 22 Create a APP UI Design UI Wireframe Whimsical Insert Record in Databse SQLite Database Insert REcord in DAtabase REad Data from Database	**MOBILE APP UI DESIGN USING WHIMSICAL | UI DESIGN FOR APP | WHIMSICAL TUTORIAL** https://youtu.be/19FLg-E8geE

WEEK-9 : ANDROID ACTIVITY LIFECYCLE

Task 7: Create App to demonstrate Android Activity Life Cycle.

Activity Lifecycle

Activities in the system are managed as an *activity stack*. When a new activity is started, it is placed on the top of the stack and becomes the running activity -- the previous activity always remains below it in the stack, and will not come to the foreground again until the new activity exits.

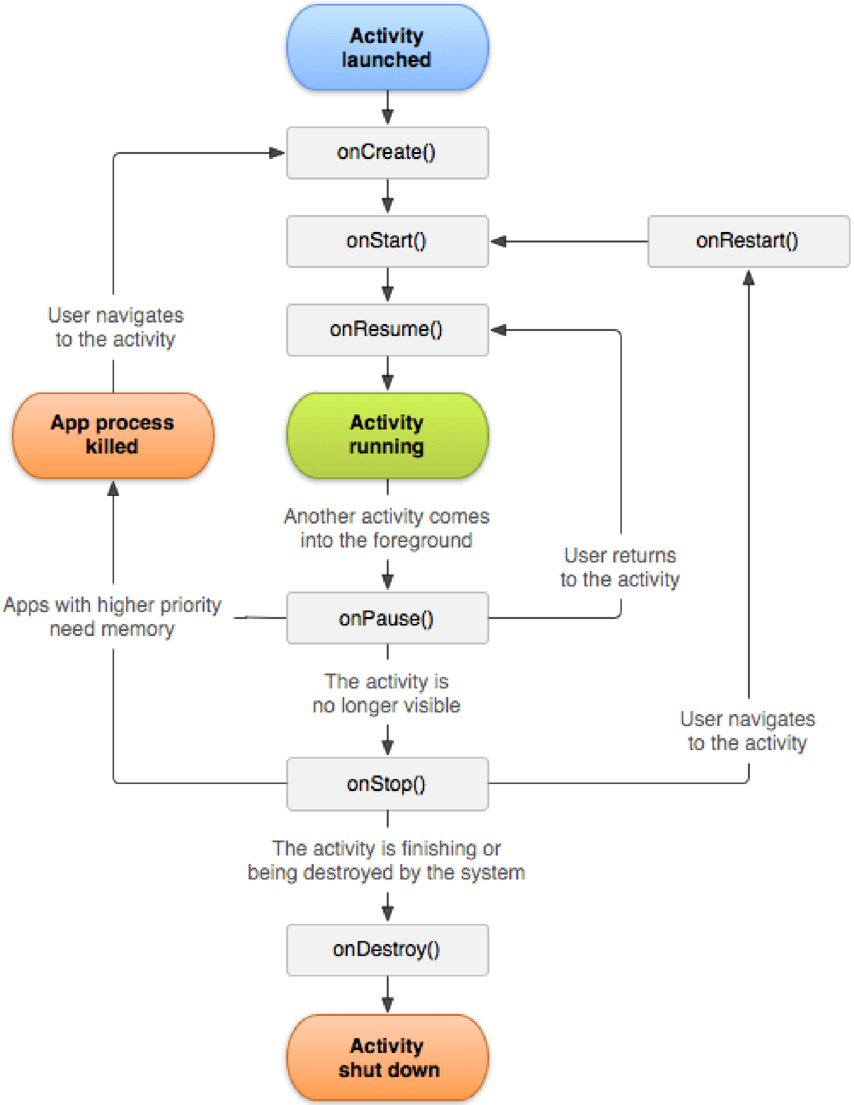
An activity has essentially four states:

- If an activity in the foreground of the screen (at the top of the stack), it is *active* or *running*.
- If an activity has lost focus but is still visible (that is, a new non-full-sized or transparent activity has focus on top of your activity), it is *paused*. A paused activity is completely alive (it maintains all state and member information and remains attached to the window manager), but can be killed by the system in extreme low memory situations.
- If an activity is completely obscured by another activity, it is *stopped*. It still retains all state and member information, however, it is no longer visible to the user so its window is hidden and it will often be killed by the system when memory is needed elsewhere.
- If an activity is paused or stopped, the system can drop the activity from memory by either asking it to finish, or simply killing its process. When it is displayed again to the user, it must be completely restarted and restored to its previous state.

The entire lifecycle of an activity is defined by the following Activity methods. All of these are hooks that you can override to do appropriate work when the activity changes state. All activities will implement onCreate(Bundle) to do their initial setup; many will also implement onPause() to commit changes to data and otherwise prepare to stop interacting with the user. You should always call up to your superclass when implementing these methods.

```
publicclassActivityextendsApplicationContext{
    protectedvoid onCreate(Bundle savedInstanceState);

    protectedvoid onStart();

    protectedvoid onRestart();

    protectedvoid onResume();

    protectedvoid onPause();

    protectedvoid onStop();

    protectedvoid onDestroy();
```

```
  }
```

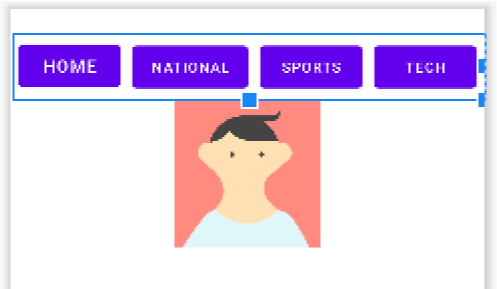

Activity launched
onCreate()
onStart()
onRestart()
User navigates to the activity
onResume()
App process killed
Activity running
Another activity comes into the foreground
User returns to the activity
Apps with higher priority need memory
onPause()
The activity is no longer visible
User navigates to the activity
onStop()
The activity is finishing or being destroyed by the system
onDestroy()
Activity shut down

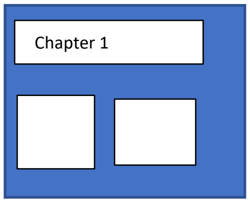
```
//Source CODE for creating Android Activities
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    Log.i("LogName", "On Create Activity started");
    Toast.makeText(this, "On Ctreate Activity started", Toast.LENGTH_LONG).show();
}

protected void onStart() {
    super.onStart();

    Log.i("LogName", "On Start Activity started");
    Toast.makeText(this, "On Start Activity started", Toast.LENGTH_LONG).show();

}

protected void onResume() {
    super.onResume();
    Log.i("LogName", "On ResumeActivity started");
    Toast.makeText(this, "On Resume Activity started", Toast.LENGTH_LONG).show();

}

protected void onPause() {
    super.onPause();
    Log.i("LogName", "On PAuse Activity started");
    Toast.makeText(this, "On Pause Activity started", Toast.LENGTH_LONG).show();

}
protected void onStop(){
    super.onStop();
    Log.i("LogName", "On Stop Activity started");
    Toast.makeText(this, "On Stop Activity started", Toast.LENGTH_LONG).show();

}
protected void onDestroy(){
    super.onDestroy();
    Log.i("LogName", "On Destroy Activity started");
    Toast.makeText(this, "On Destroy Activity started", Toast.LENGTH_LONG).show();

}
```

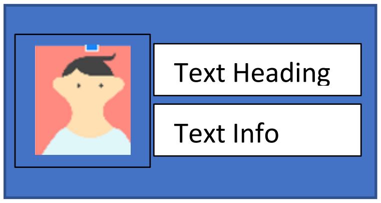
Watch Video Lecture on @CodeWithZeeshanAcademy	
Lecture 8 What is Activity Lifecycle in Android Studio 2021 Activity Life Cycle Explained	What is activity lifecycle in android | Android Activity Life Cycle Explained https://youtu.be/0MlRwijOCrQ
Lecture 10 Create Mobile App for Activity Lifecycle Android Studio 2021 Use Log and Toast for feedback	How to Create App for Android Activity Lifecycle | How to use Log and Toast in Android Studio | L-10 https://youtu.be/a3m0kzVxuFM

Android UI Layout Practice Tasks:

Create the Following UI components in Android using Card Layout. Write the Component Tree Structure for the Following UI.







WEEK-10 : ANDROID FRAGMENTS AND ACTIVITES

Task 17: Create a simple app using FRAGMENTS in Android Studio.

Create an APP where there are Three buttons, on Top or Bottom, and by clicking each button a Fragment changes at the bottom, like WhatsApp or Instagram app as shown in Lecture below.

Watch Video Lecture on @CodeWithZeeshanAcademy	
  हिन्दी / اردو FRAGMENTS IN ANDROID STUDIO Android Studio this is Mobile Fragment this is Desktop fragme his is Laptop Fragment	How to use Fragments in Android Studio | Android Fragments tutorial | Android Studio Full Course https://bit.ly/3V5igbo
  How to Use FRAGMENTS in Android Studio Fragments for Multi Layout App Sports Fragment	How to use fragments in Android Studio | Understanding Fragments for Multi Layout App https://youtu.be/PiExmkR3aps

1. Create New Fragment by going into File → New → Fragments → Blank Fragment
2. In Java Class of MainActivity.java under onCreate Method write the following code. Same code will go under each Button onClick event also with change in fragment name.

```
FragmentManager fragMag  = getSupportedFragmentManager();

fragMag.beginTransaction().
                              replace(R.id.fragLayout, FistFragment.class, null)
                              .setReorderingAllowed(true)
                              .addToBackStack("main")
                              .commit();
```

Task 18: Create a Tourism Guide App for any location

Create a simple app called Tourism Guide with at least 6 cities, their Famous places to visit, restaurants etc. (or you can choose any other country or city or place).

The app will have Splash Screen, then screen with Multiple City names and their famous landmarks shown as CARD VIEW. Then once the City is selected, then next screen shows all the places to visit in that city. Then each place can be selected to shor third activity with more details on individual location.

How to Create a Tourist App in Android Studio | Android Activity | OnClick Listener in Java | L-11A
https://youtu.be/0qQ50bWkKrg

Task 19. Become a Freelancer.

Each student is required to create account on any three Freelancing websites and create their profiles with complete description. (Attach Screen shot of their accounts / pitch as assignment submission)

1. **https://www.freelancer.com/**
2. **https://www.peopleperhour.com/**
3. **https://www.guru.com/**
4. **https://www.fiverr.com/**
5. **https://www.upwork.com/**

each student must create account on these and start exploring the freelancing portals for online work.

IDEA Student Software Developer Team/Group/Incubation

Step 1. Form a group of 3 to 4 students and create your own private software house/group/team.
Step 2. Name your Software developer Team/group.
Step 3. Start brainstorming on your skills and areas of expertise, i.e. PhP Web development, Android App, Graphics Designing, etc.
Step 4. Create a single account on Freelancer and Fiver websites as a Software Developer. Keep searching for projects from your expertise and start biding on them.
Step 5. Try to create an interesting profile with portfolio showing all your work.

Those students who form a software developer group/team will be guided further on how to work better on freelancer websites and fiver.

WEEK-11 : NAVIGATION DRAWER UI

Task 20: Create a simple “MY CV App” using Navigation Drawer in Android Studio.

Use the default Navigation Drawer in Android studio, create an App to display your details by clicking each button in the drawer

- Hope Page: Welcome to My CV App With your Picture
- Personal Details
- Education
- Skills & Expertise
- Experience
- Portfolio

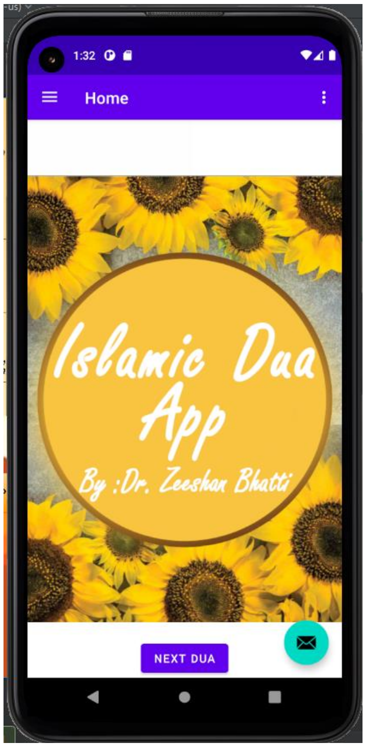
Lecture 14: Basic of Navigation Drawer in Android Studio 2021 | How to use Android Navigation Drawer | L#14
https://youtu.be/E1W3nJA6R14

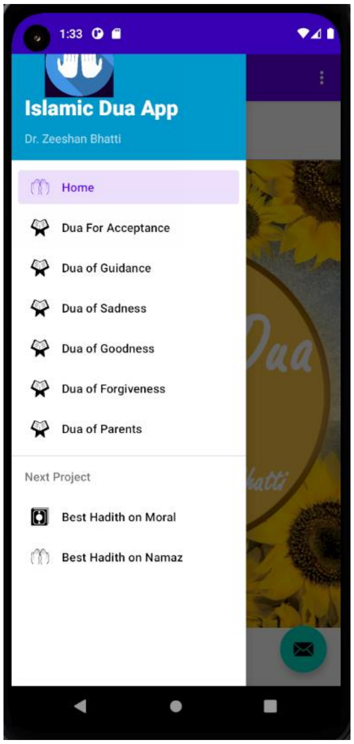
Lecture 15: How to use Navigation Drawer in Android Studio | Develop Android App with Navigation Drawer | L#15
https://youtu.be/PzGN-8a-8bk

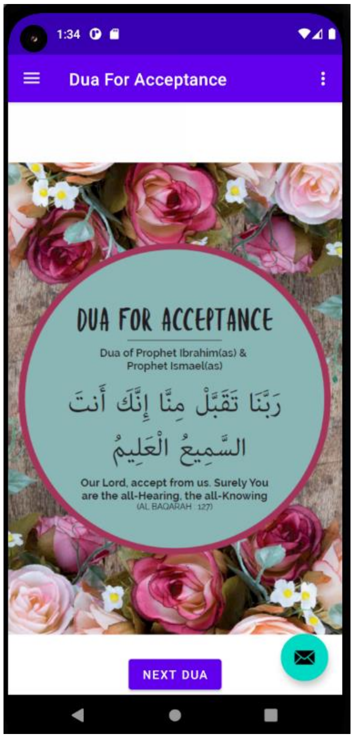
Task 21: Create a Full app called “ISLAMIC DUA APP” using Navigation Drawer in Android Studio.

Use the default Navigation Drawer in Android studio, to create the menu for each Dua type. When user clicks on the Dua type, its Fragments load showing the Image or Text with Dua. Watch the Following Lecture for full guidance

How to Create Android App from scratch | How to Make an App in Android | Navigation Drawer | L#16
https://youtu.be/OLcQsaGo-CE





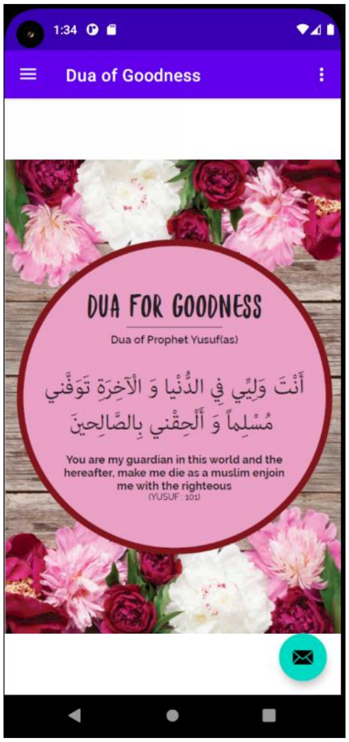


DUA FOR ACCEPTANCE

Dua of Prophet Ibrahim(as) &
Prophet Ismael(as)

رَبَّنَا تَقَبَّلْ مِنَّا إِنَّكَ أَنتَ
السَّمِيعُ الْعَلِيمُ

Our Lord, accept from us. Surely You are the all-Hearing, the all-Knowing
(AL BAQARAH : 127)



DUA FOR GOODNESS

Dua of Prophet Yusuf(as)

أَنْتَ وَلِيِّي فِي الدُّنْيا وَ الْآخِرَةِ تَوَفَّنِي
مُسْلِماً وَ أَلْحِقْنِي بِالصَّالِحِينَ

You are my guardian in this world and the hereafter, make me die as a muslim enjoin me with the righteous
(YUSUF : 101)

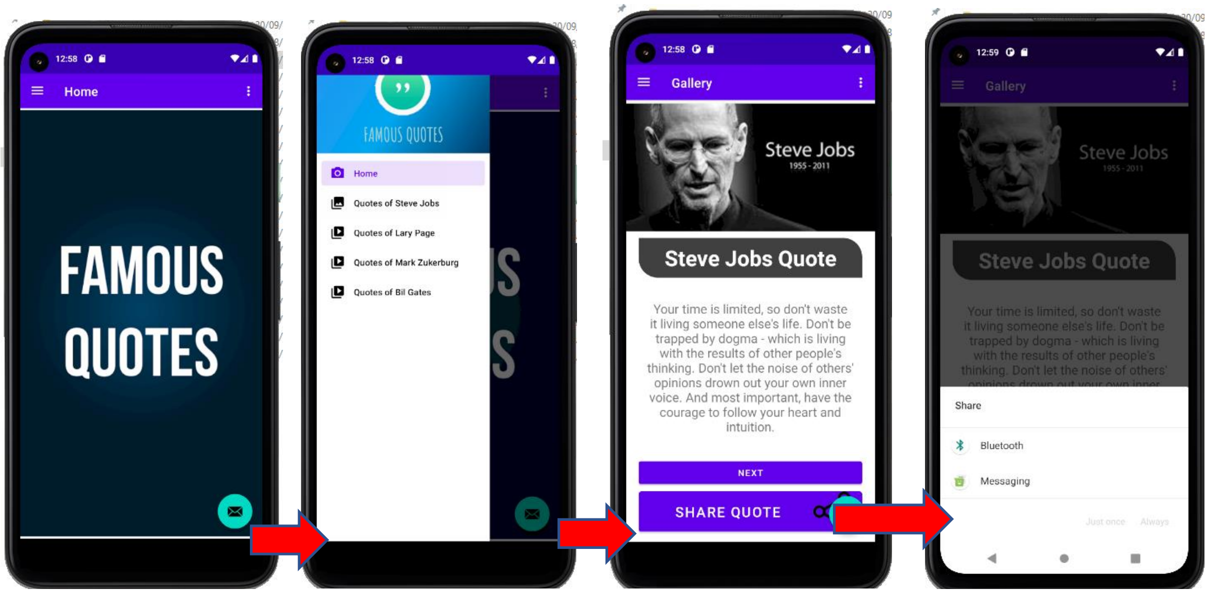
WEEK-12 : CUSTOM UI DESIGN WITH SHARE FEATURE

Task 22: Create a Full app "Famous Quotes App" using Navigation Drawer in Android Studio.

Use the default Navigation Drawer in Android studio. Change the Navigation menu Item and fragments to show your own content. Watch the Following Lecture for full guidance

Lecture 17: How to Develop complete Android App using Java | Full Quotes App | How to Navigation Drawer | L#17

https://youtu.be/KAmdwyduEPg



Your time is limited, so don't waste it living someone else's life. Don't be trapped by dogma - which is living with the results of other people's thinking. Don't let the noise of others' opinions drown out your own inner voice. And most important, have the courage to follow your heart and intuition.

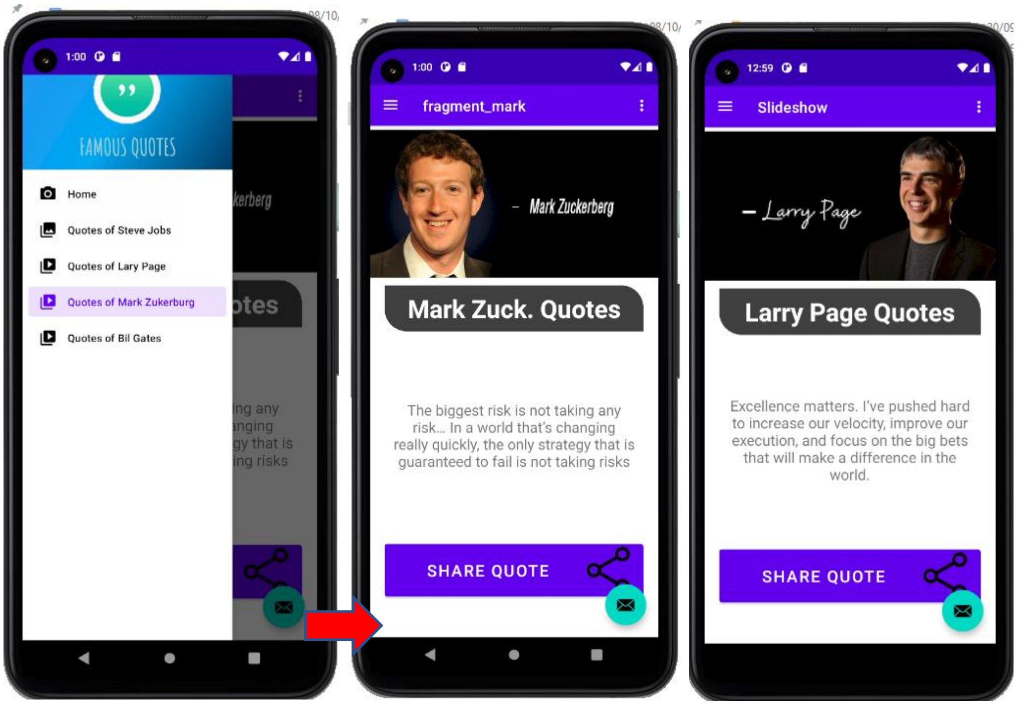
Task 23: Create a Full app on any of the Topics below using Navigation Drawer in Android Studio.

Use the default Navigation Drawer in Android studio. Change the Navigation menue Item and fragments to show your own content.

App Idea 1. Navigation Drawer based Islamic Quotes App.

App Idea 2. Famous Hadith on Multiple Tpics

App Idea 3. Quotes of Quaid-e-azam



The biggest risk is not taking any risk... In a world that's changing really quickly, the only strategy that is guaranteed to fail is not taking risks

Excellence matters. I've pushed hard to increase our velocity, improve our execution, and focus on the big bets that will make a difference in the world.

Task 24: Create a Full app on any of the Topics below using Navigation Drawer in Android Studio.

Use the default Navigation Drawer in Android studio. Change the Navigation menue Item and fragments to show your own content.

App Idea 4. Quotes/Poems of Allma Iqbal
App Idea 5. Famous Poet Poetry App,
App Idea 6. App for Quranic Ayats on Various Topics

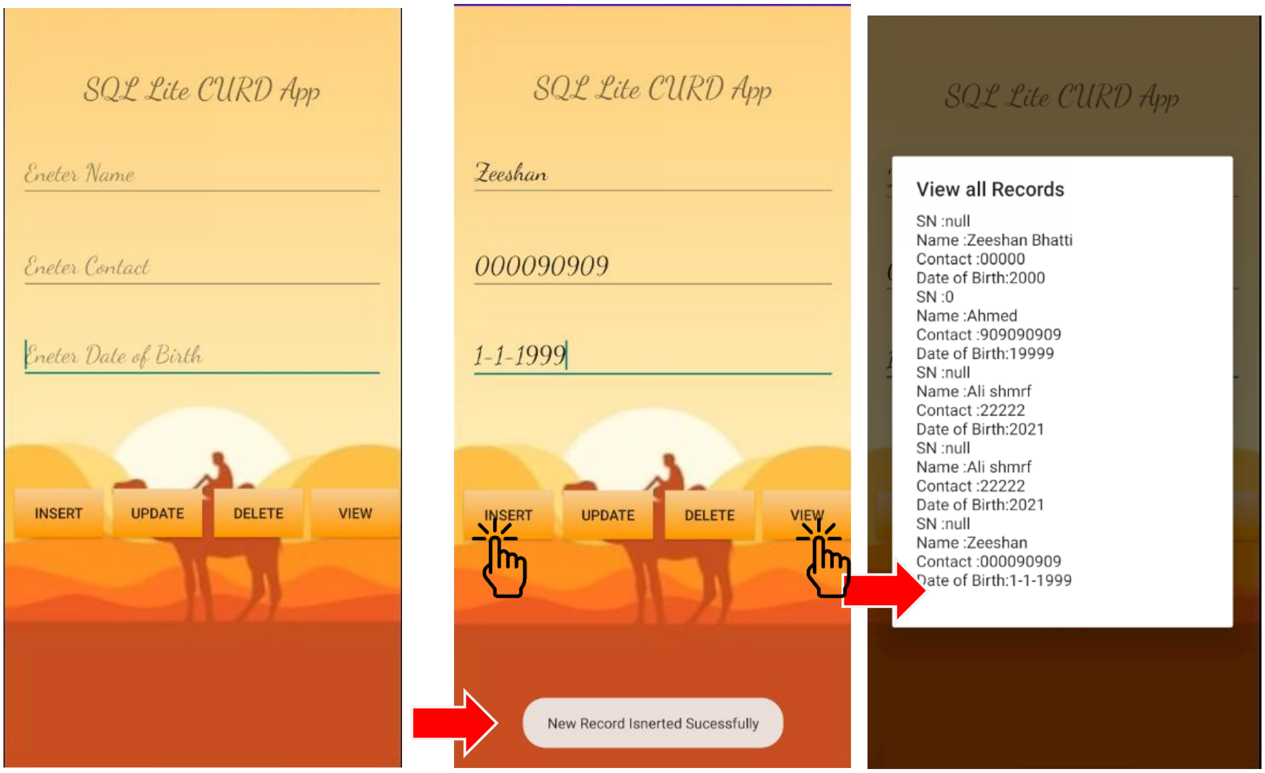
Lecture 17: How to Develop complete Android App using Java | Full Quotes App | How to Navigation Drawer | L#17

https://youtu.be/KAmdwyduEPg

WEEK-13 : SQLITE DATABASE

Task 25. Create a SQLite based simple CURD(Create Update Read Delete) App.

Create a SQLite based CRUD app that shows a simple form to the user and then saves the user data in a Database.



Zeeshan

000090909

1-1-1999

New Record Isnerted Sucessfully

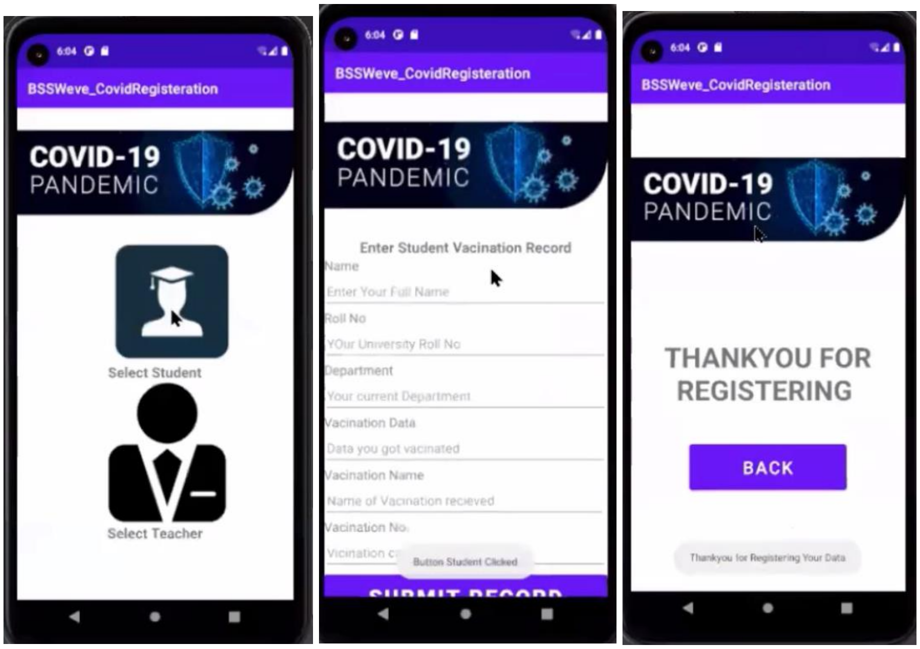
View all Records

SN :null
Name :Zeeshan Bhatti
Contact :00000
Date of Birth:2000
SN :0
Name :Ahmed
Contact :909090909
Date of Birth:19999
SN :null
Name :Ali shmrf
Contact :22222
Date of Birth:2021
SN :null
Name :Ali shmrf
Contact :22222
Date of Birth:2021
SN :null
Name :Zeeshan
Contact :000090909
Date of Birth:1-1-1999

Watch Video Lecture on @CodeWithZeeshanAcademy	
Lecture 19 SQLite CURD App in Android Studio 2021 INSERT DELETE UPDATE VIEW	**Android SQLite database tutorial | SQLite Database in Android Studio| SQLite CRUD App in Android** https://youtu.be/9U7LPHTqZH0

Task 26: Create a full Android App for “COVID-19 Student Registration App for University “

Create an App for student to register their information about covid vaccination. Use the following GUI. Save the Data in the SQLite Database and display it to the user once successfully saved.



Watch Video Lecture on @CodeWithZeeshanAcademy	
	Develop App "Covid-19 Student Registration" in Android Studio | App develop for beginners | Lesson13 https://youtu.be/17g1ayJNJVY

WEEK-14 : FIREBASE DATABASE

Task 27: Create a complete app using SQLite or FIREBASE database any any one of the following topics.

SECTION II: Project You have to create an Online Ecommerce App which will be connected with either Firebase cloud database or MySQL database. You can design admin panel on App of as WEB . the Client needs to have all basic options

The App Topic can be any of the following

a) Food Ordering App
b) University Students - Rent A Book App
c) University Students – Rent a Bike App
d) School Books / Cloths ordering App.
e) Online Medical Store App
f) Selling Handicraft / Hand made objects App

WEEK-15 : FINAL ANDROID APP PROJECT

Task 28: Children Alphapets FULL APP PROJECT

Develop a Complete Learning APP for Children with following specifications. As the App starts, the Main activity shows Five Lessons or Tasks, Sindhi/Urdu alphabets, English Alphabets, Numbers, Colors, Shapes as shown in Figure 1. As the user selects each lesson type, the lesson begins the Letters of Numbers in scroll view with fragments, with interactive design as shown in figure 2

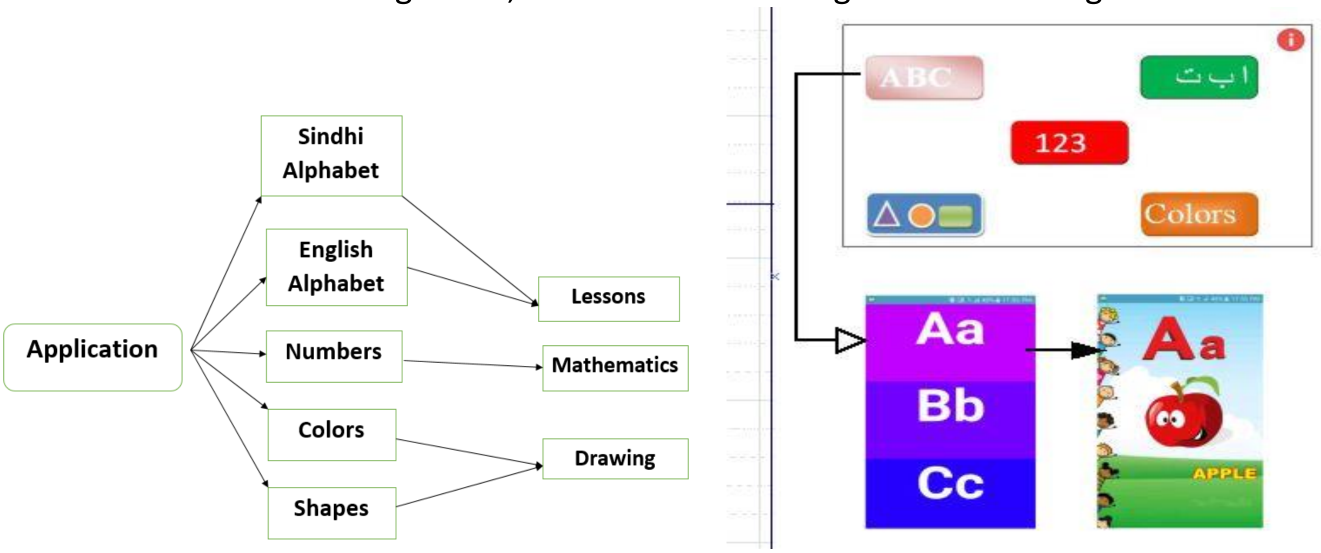


Figure 1: Main Structure of the App

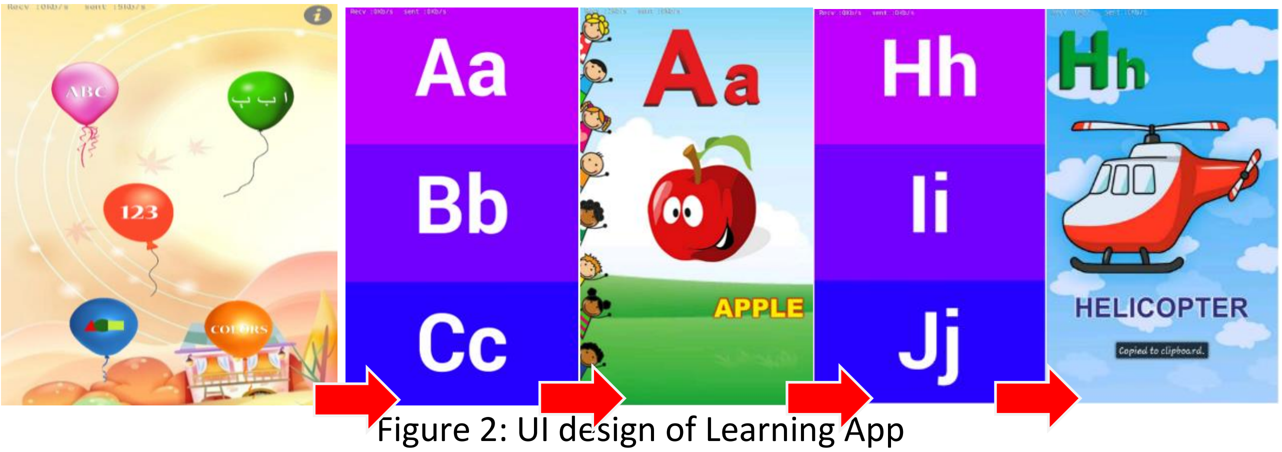
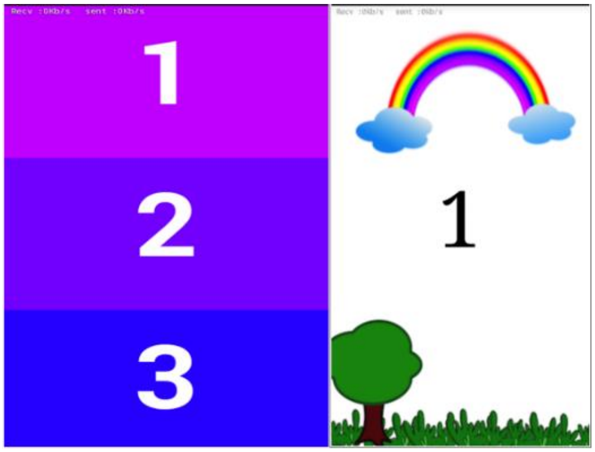


Figure 2: UI design of Learning App



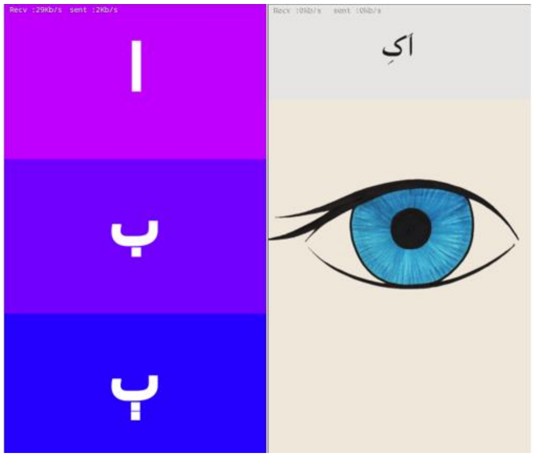
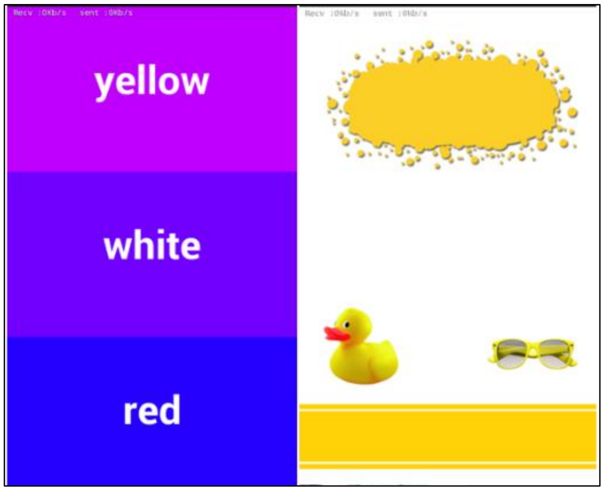
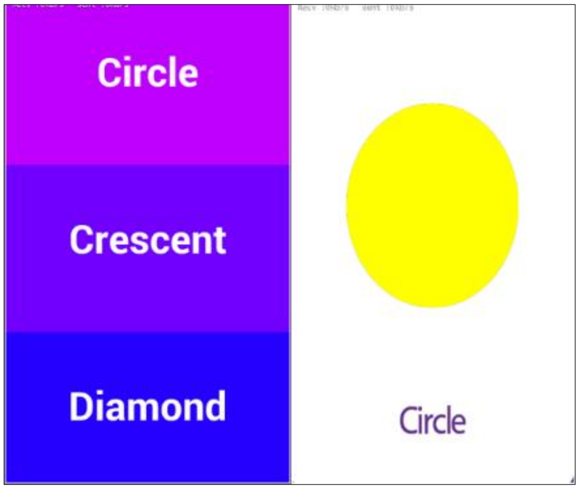


Figure 3: Numbers Exercise

Sindhi/Urdu Exercise



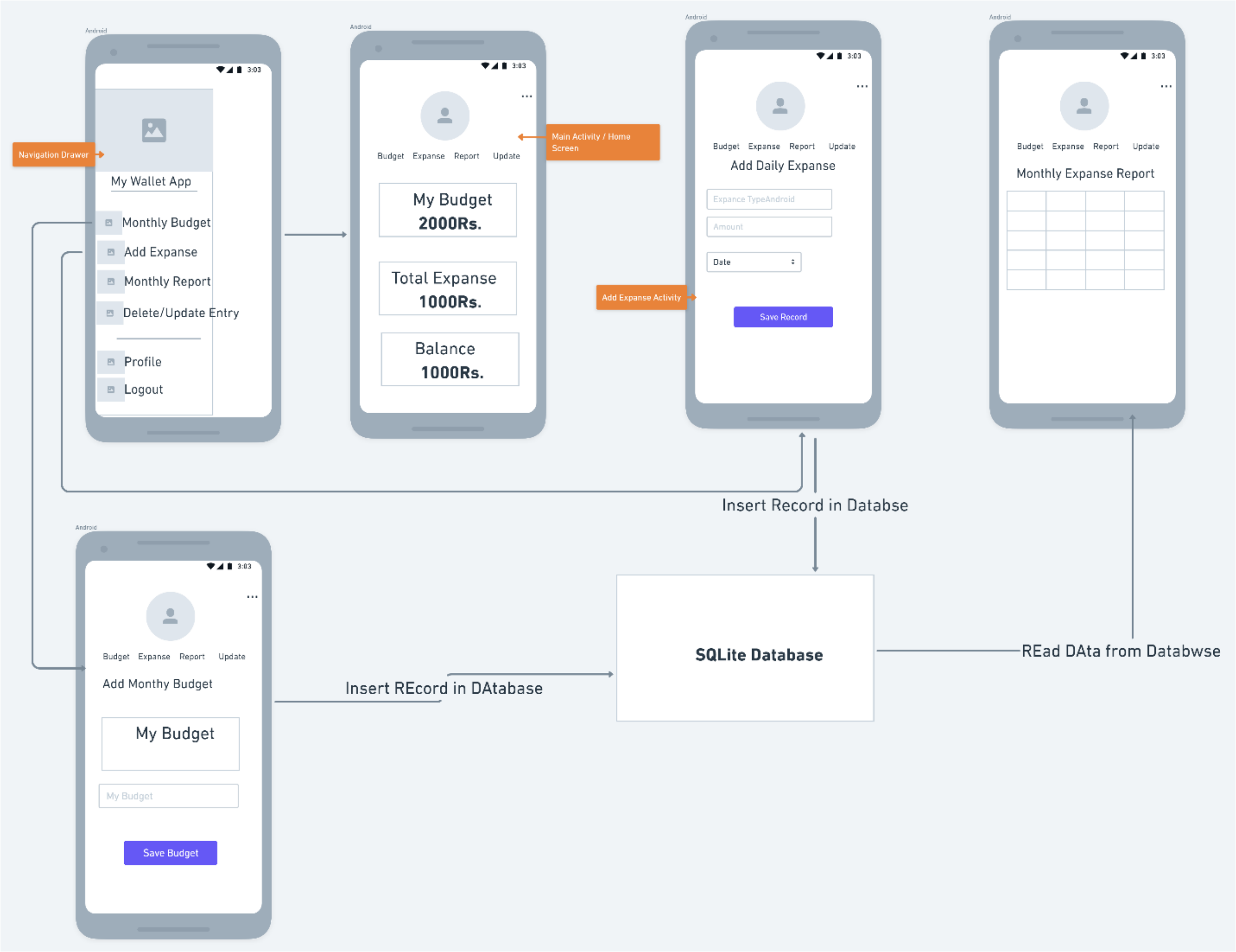


Colors Exercise

Shapes Exercise

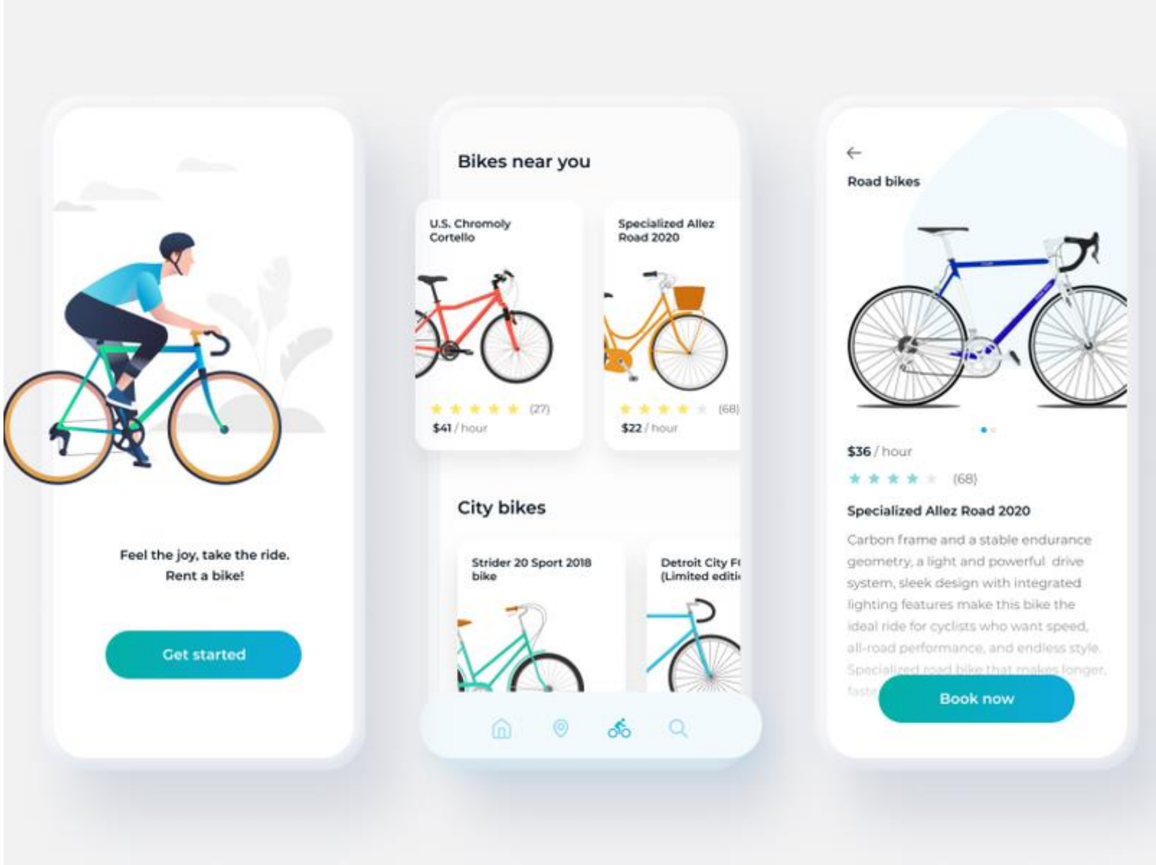
Task 28: My Digital Wallet - FULL APP PROJECT

Create a Digital Wallet app with multiple activites.



Task 28: Rent a Bike App - FULL APP PROJECT

Create an app for university students to rent a Bike. The demo APP UI is given below. You can design your own UI also.



Feel the joy, take the ride.
Rent a bike!

Carbon frame and a stable endurance geometry, a light and powerful drive system, sleek design with integrated lighting features make this bike the ideal ride for cyclists who want speed, all-road performance, and endless style. Specialized road bike that makes longer, faste

Android Projects / Tasks

1. Navigation Drawer based Islamioc Duas App.
2. Hadith or Quotes or Quaid-e-azam Quotes orIqbal Quotes or Poetry,
3. App for Quranic Ayats on Various Topics(using FireBaseDB.
4. Rent a Book (from Student to student).
5. Rent a Bike for University Students
6. Learning ABC App for Children
7. Guess a Character/ Letter / Shape Game for Children
8. Rent a Student Tutor (withn University)
9. Rent a Craftsman (Electrician, Plumber, Carpenter).
10. Toursit App
11. University Student Notes Sharing App. (Topic,, Subject , Department)
12. Online Shoping/ e-commerce app.
13. App for Quranic Ayats on Various Topics(using FireBaseDB.
14. Rent a Book (from Student to student).
15. Rent a Bike for University Students

16.Learning ABC App for Children
17.Guess a Character/ Letter / Shape Game for Children
18.Rent a Student Tutor (withn University)
19.Rent a Craftsman (Electrician, Plumber, Carpenter).
20.Toursit App
21.University Student Notes Sharing App. (Topic,, Subject , Department)
22.Online Shoping/ e-commerce app.
23.Petrol Wallet App using SQLlite
24.MyWallet App using SQL Lite

WEEK-16 : DEPLOY YOU APPS ON PLAY STORE

- Create certificates of your App,
- Add Google AddWord account for adds,
- Upload all your apps on Google Playstore.

Revision.

REFERENCE WEBSITES:

1. https://www.tutorialspoint.com/android/android_text_to_speech.htm
2. https://www.geeksforgeeks.org/
3. https://www.tutorialspoint.com/android
4. https://abhiandroid.com/
5. https://google-developer-training.github.io/android-developer-fundamentals-course-concepts-v2
6. https://developer.android.com/guide/

UDEMY free complete Android courses link:

https://udemyfreecourses.org/search/android

MY Android Learning Channels:

1. Zeeshan Academy https://www.youtube.com/c/zeeshanacademy
2. Code with Zeeshan Academy https://www.youtube.com/@CodeWithZeeshanAcademy
3. Z-Tech Tutorials https://www.youtube.com/@ZTechTutorials

Android Learning Channels:

1. https://www.youtube.com/c/NeatRoots
2. https://www.youtube.com/c/Foxandroid01/videos
3. https://www.youtube.com/c/EasyLearnVideos/videos
4. https://www.youtube.com/c/KODDev/videos

For UI Designng and Wireframing Layout structure

5. https://whimsical.com/