

Name	Sonu kahar	Roll Number	21302A0053
Subject/ Course:	Advanced Mobile Programming		
Topic	Introduction to Android, Introduction to Android Studio IDE, Application Fundamentals		

Basic Program

1.a) Design a simple “Hello World” Program.

Activity_main:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

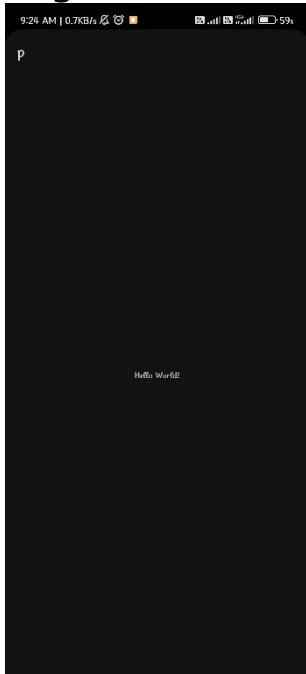
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity:

```
package com.example.p;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
public class MainActivity extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
}
```

E.g:



Broadcast Receiver

1.b) Write a program to implement Broadcast Receiver.

MainActivity

```
package com.example.practical1b_b
```

```
import android.content.Intent
import android.content.IntentFilter
import android.support.v7.app.AppCompatActivity
import android.os.Bundle
```

```
class MainActivity : AppCompatActivity() {
    lateinit var receiver: AirplaneModeChanger
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        receiver = AirplaneModeChanger()

        IntentFilter(Intent.ACTION_AIRPLANE_MODE_CHANGED).also {
            registerReceiver(receiver, it)
        }

        override fun onStop() {
            super.onStop()
            unregisterReceiver(receiver)
        }
    }
}
```

AirplaneModeChanger (BroadcastReceiver)

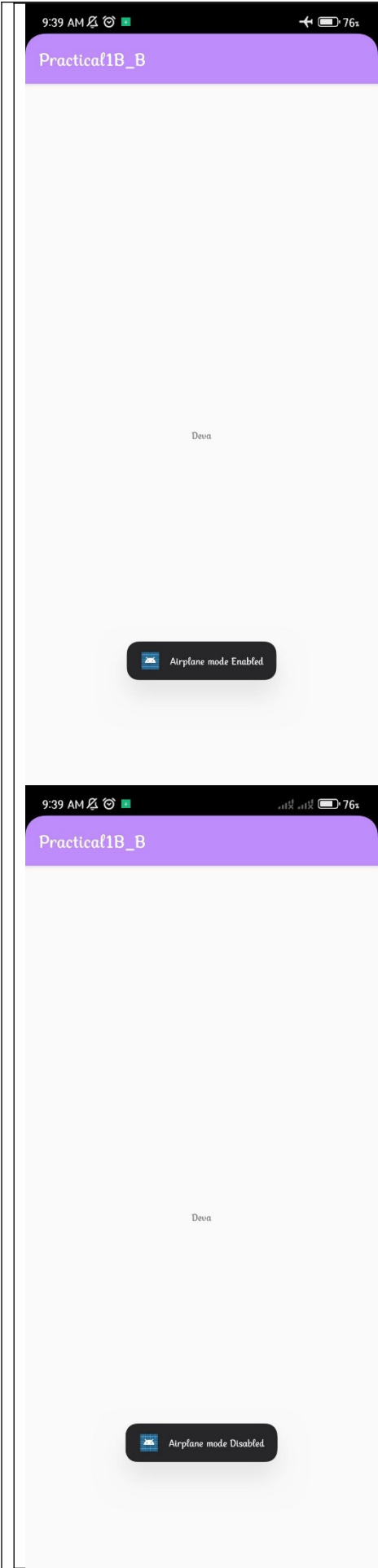
```
package com.example.practical1b_b
```

```
import android.content.BroadcastReceiver
import android.content.Context
import android.content.Intent
import android.widget.Toast
```

```
class airplanemodechange: BroadcastReceiver() {

    override fun onReceive(p0: Context?, p1: Intent?) {
        val isAirplaneEnabled = p1?.getBooleanExtra("state", false)?:return
        if (isAirplaneEnabled)
        {
            Toast.makeText(p0, "Airplane mode Enabled", Toast.LENGTH_LONG).show()
        } else
        {
            Toast.makeText(p0, "Airplane mode Disabled", Toast.LENGTH_LONG).show()
        }
    }
}
```

Output:



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Subject/Course:	Advanced Mobile Programming		
Topic	Programming Resources		

Image and Background

2.a) Design an Activity with an image and its background colour set.

Activity_main:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/bg"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/krishna"
        android:textColor="@color/textcolor"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="170dp"
        android:layout_height="320dp"
        app:layout_constraintBottom_toTopOf="@+id/textView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:srcCompat="@drawable/img1"
        tools:ignore="MissingConstraints" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:backgroundTint="@color/buttonbg"
        android:text="@string/click_me"
        android:textColor="@color/textcolor"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
```

```
tools:ignore="MissingConstraints" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity:

```
package com.example.prac21
```

```
import androidx.appcompat.app.AppCompatActivity
```

```
import android.os.Bundle
```

```
class MainActivity : AppCompatActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
    }  
}
```

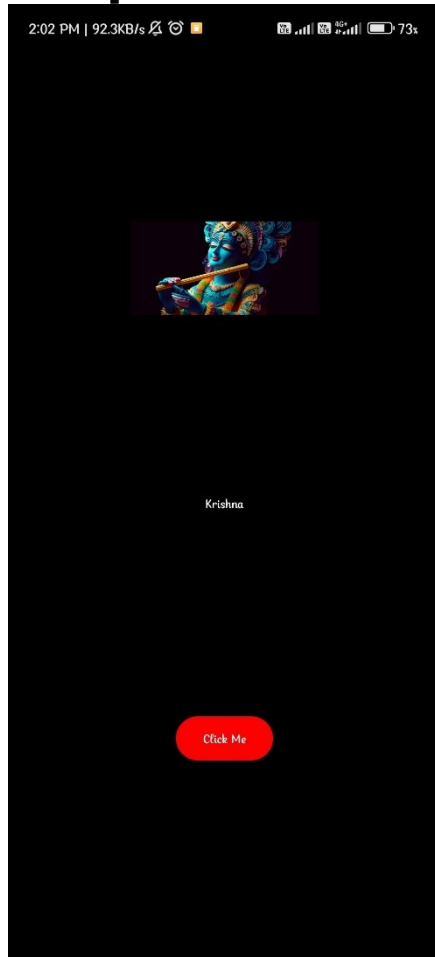
String:

```
<resources>  
    <string name="My_Work">pra2.1</string>  
    <string name="krishna">Krishna</string>  
    <string name="click_me">Click Me</string>  
</resources>
```

Color:

```
<?xml version="1.0" encoding="utf-8"?>  
<resources>  
    <color name="bg">#FF000000</color>  
    <color name="textcolor">#FFFFFFFF</color>  
    <color name="buttonbg">#FF0000</color>  
</resources>
```

Output:



On Click of a Button

2.b) Design an Activity where on Click of a button the image should change.

MainActivity:

```
package com.example.pra21

import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.ImageView

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        lateinit var imageView: ImageView

        lateinit var button: Button
        var isImage1 = true

        imageView = findViewById(R.id.imageView)
        button = findViewById(R.id.button)

        button.setOnClickListener {
            // Change the image when the button is clicked
            if (isImage1) {
                imageView.setImageResource(R.drawable.img2)
            } else {
                imageView.setImageResource(R.drawable.img1)
            }

            // Toggle the flag to switch between images
            isImage1 = !isImage1
        }
    }
}
```

Output:

2:02 PM | 92.3KB/s | 73%



Krishna

Click Me

2:26 PM | 2.0KB/s | 69%



Krishna

Click Me

Name	Sonu kahar	Roll Number	21302A0053
Subject/ Course:	Advanced Mobile Programming		
Topic	Programming Activities and Fragments		

Activity Life Cycle

5.a) To demonstrate the working of Activity and its Life Cycle.

```
package com.example.practical3b
```

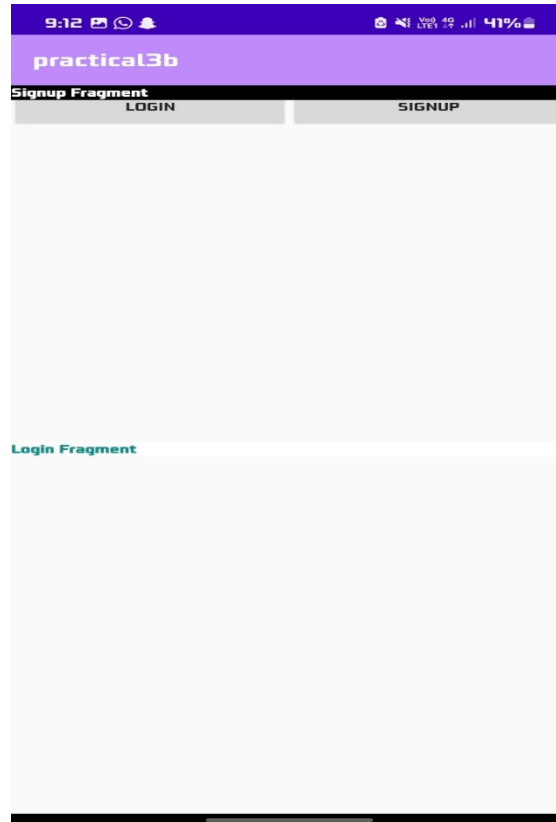
```
import android.support.v7.app.AppCompatActivity  
import android.os.Bundle  
import android.view.View
```

```
class MainActivity : AppCompatActivity() {  
    private val fragMgr=supportFragmentManager  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
    }  
    fun onClickLogin(view: View){  
        val fragTrans = fragMgr.beginTransaction()  
        fragTrans.add(R.id.frameLayout,LoginFragment())  
        fragTrans.addToBackStack(null)  
        fragTrans.commit()  
    }  
    fun onClickSignup(view: View){  
        val fragTrans = fragMgr.beginTransaction()  
        fragTrans.add(R.id.frameLayout,SignupFragment())  
        fragTrans.addToBackStack(null)  
        fragTrans.commit()  
    }  
}
```



Fragment Life Cycle

5.b) To demonstrate the working of Fragments and its Life Cycle.



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Subject/Course:	Advanced Mobile Programming		
Topic	Programs related to different Layouts		

Linear Layout

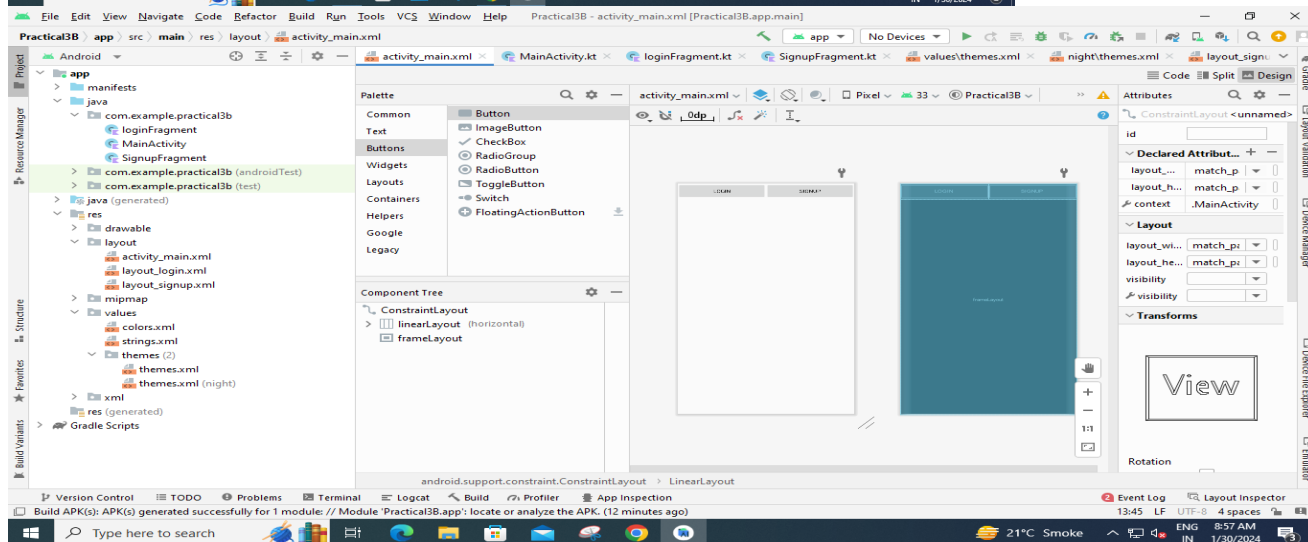
4.a) To demonstrate Linear Layout.

1-activity main

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <LinearLayout
        android:id="@+id/LinearLayout"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="horizontal"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintBottom_toBottomOf="@id/frameLayout"
        app:layout_constraintTop_toTopOf="parent">

        <Button
            android:id="@+id/button4"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            />
    </LinearLayout>
</android.support.constraint.ConstraintLayout>
```



```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
```

```

android:layout_height="match_parent"
tools:context=".MainActivity">

<LinearLayout
    android:id="@+id/linearLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="horizontal"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintBottom_toTopOf="@id/frameLayout"
    app:layout_constraintTop_toTopOf="parent">

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:onClick="onClickLogin"
        android:text="Login" />

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:onClick="onClickSignup"
        android:text="Signup" />

</LinearLayout>

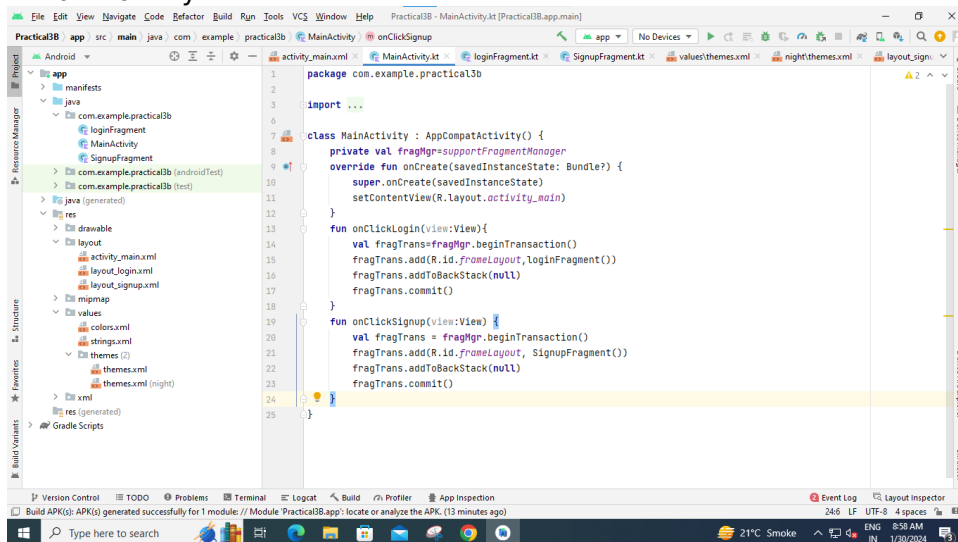
<FrameLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/frameLayout">

</FrameLayout>

</android.support.constraint.ConstraintLayout>

```

2-MainActivity.Kt



package com.example.practical3b

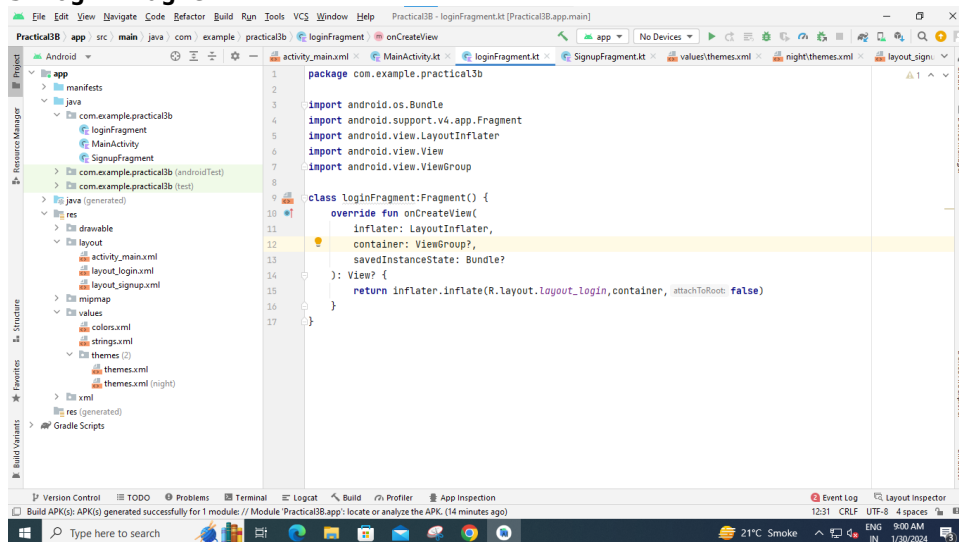

```

import android.support.v7.app.AppCompatActivity
import android.os.Bundle
import android.view.View

class MainActivity : AppCompatActivity() {
    private val fragMgr=supportFragmentManager
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }
    fun onClickLogin(view:View){
        val fragTrans=fragMgr.beginTransaction()
        fragTrans.add(R.id.frameLayout,loginFragment())
        fragTrans.addToBackStack(null)
        fragTrans.commit()
    }
    fun onClickSignup(view:View) {
        val fragTrans = fragMgr.beginTransaction()
        fragTrans.add(R.id.frameLayout, SignupFragment())
        fragTrans.addToBackStack(null)
        fragTrans.commit()
    }
}

```

3-loginfragment.kt



```

package com.example.practical3b

```

```

import android.os.Bundle
import android.support.v4.app.Fragment
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup

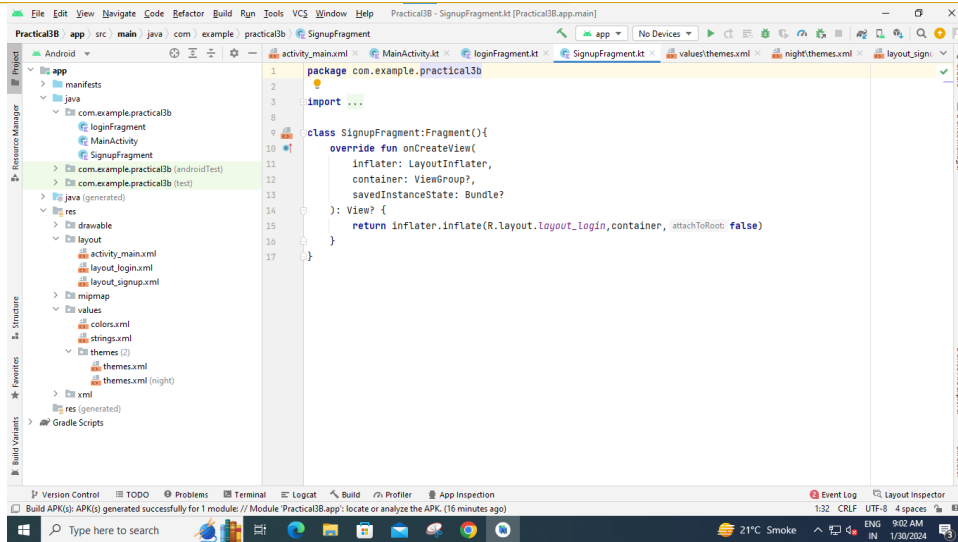
```

```

class loginFragment:Fragment() {
    override fun onCreateView(
        inflater: LayoutInflater,
        container: ViewGroup?,
        savedInstanceState: Bundle?
    ): View? {
        return inflater.inflate(R.layout.layout_login,container,false)
    }
}

```

4-signupFragment.kt

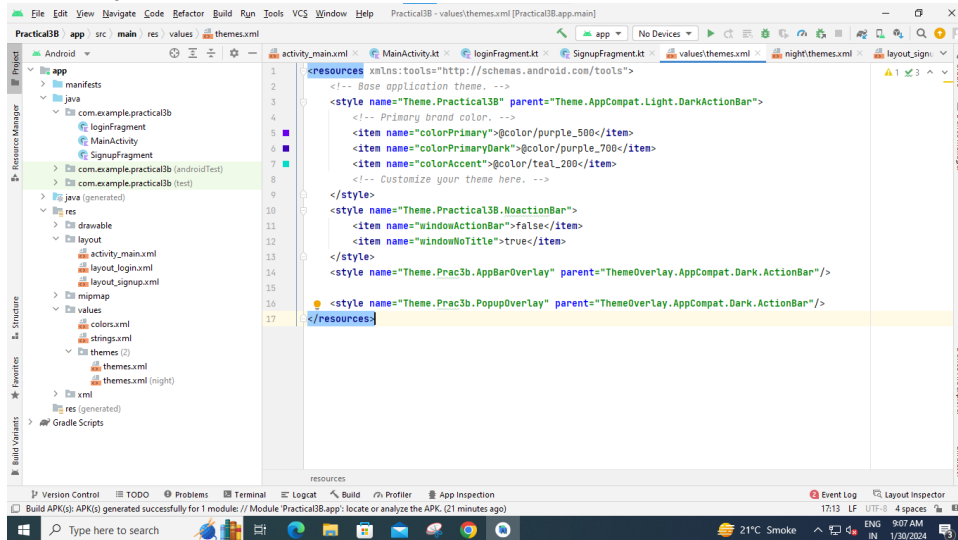


```
package com.example.practical3b
```

```
import android.os.Bundle
import android.support.v4.app.Fragment
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
```

```
class SignupFragment:Fragment(){
    override fun onCreateView(
        inflater: LayoutInflater,
        container: ViewGroup?,
        savedInstanceState: Bundle?
    ): View? {
        return inflater.inflate(R.layout.layout_login,container,false)
    }
}
```

5-value/themes.xml



```

<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Practical3B" parent="Theme.AppCompat.Light.DarkActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/purple_500</item>
        <item name="colorPrimaryDark">@color/purple_700</item>
        <item name="colorAccent">@color/teal_200</item>
        <!-- Customize your theme here. -->
    </style>
    <style name="Theme.Practical3B.NoActionBar">

```

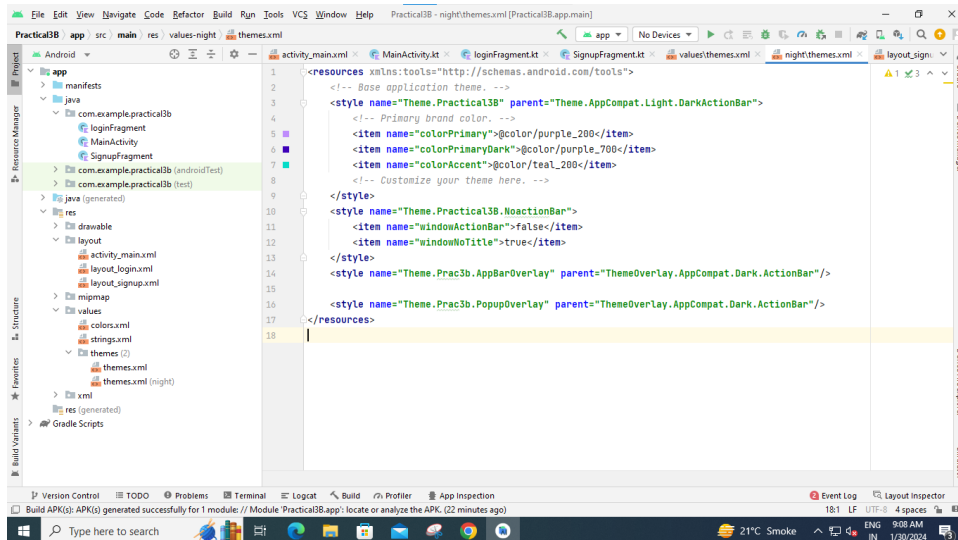
```

        <item name="windowActionBar">false</item>
        <item name="windowNoTitle">true</item>
    </style>
    <style name="Theme.Prac3b.AppBarOverlay" parent="ThemeOverlay.AppCompat.Dark.ActionBar"/>

    <style name="Theme.Prac3b.PopupOverlay" parent="ThemeOverlay.AppCompat.Dark.ActionBar"/>
</resources>

```

6-nighttheme.xml



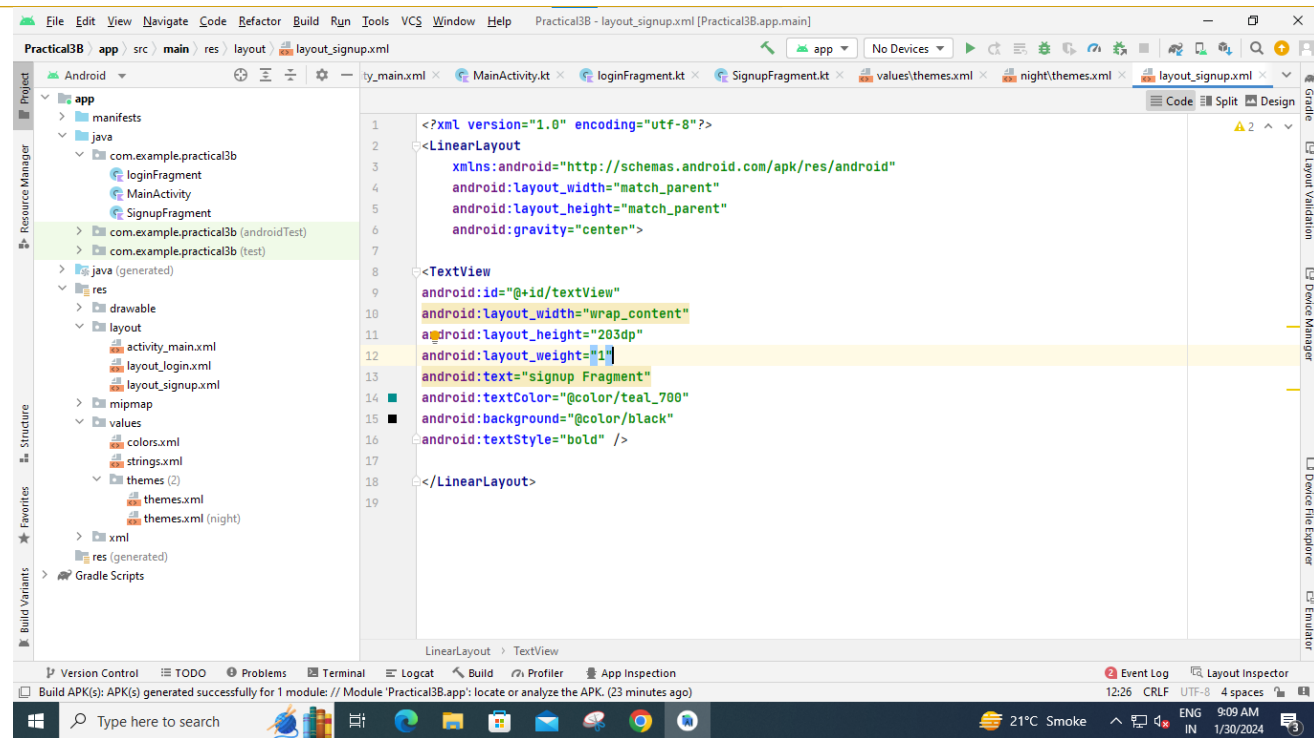
```

<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Practical3B" parent="Theme.AppCompat.Light.DarkActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/purple_200</item>
        <item name="colorPrimaryDark">@color/purple_700</item>
        <item name="colorAccent">@color/teal_200</item>
        <!-- Customize your theme here. -->
    </style>
    <style name="Theme.Practical3B.NoActionBar">
        <item name="windowActionBar">false</item>
        <item name="windowNoTitle">true</item>
    </style>
    <style name="Theme.Prac3b.AppBarOverlay" parent="ThemeOverlay.AppCompat.Dark.ActionBar"/>

    <style name="Theme.Prac3b.PopupOverlay" parent="ThemeOverlay.AppCompat.Dark.ActionBar"/>
</resources>

```

7-



```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center">
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="203dp"
    android:layout_weight="1"
    android:text="signup Fragment"
    android:textColor="@color/teal_700"
    android:background="@color/black"
    android:textStyle="bold" />
```

```
</LinearLayout>
```

Output-

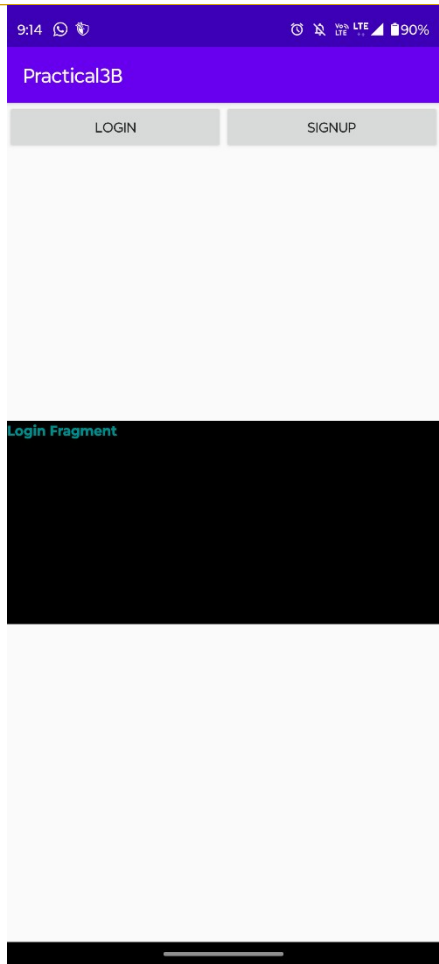


Table Layout

4.b) To demonstrate Table Layout.

MAIN.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Login page" />

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/editname"
            android:hint="enter your name"
            android:inputType="text" />

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/editpass"
            android:hint="enter password"
            android:inputType="text" />

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

            <Button
                android:id="@+id/btnsubmit"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="SUBMIT" />

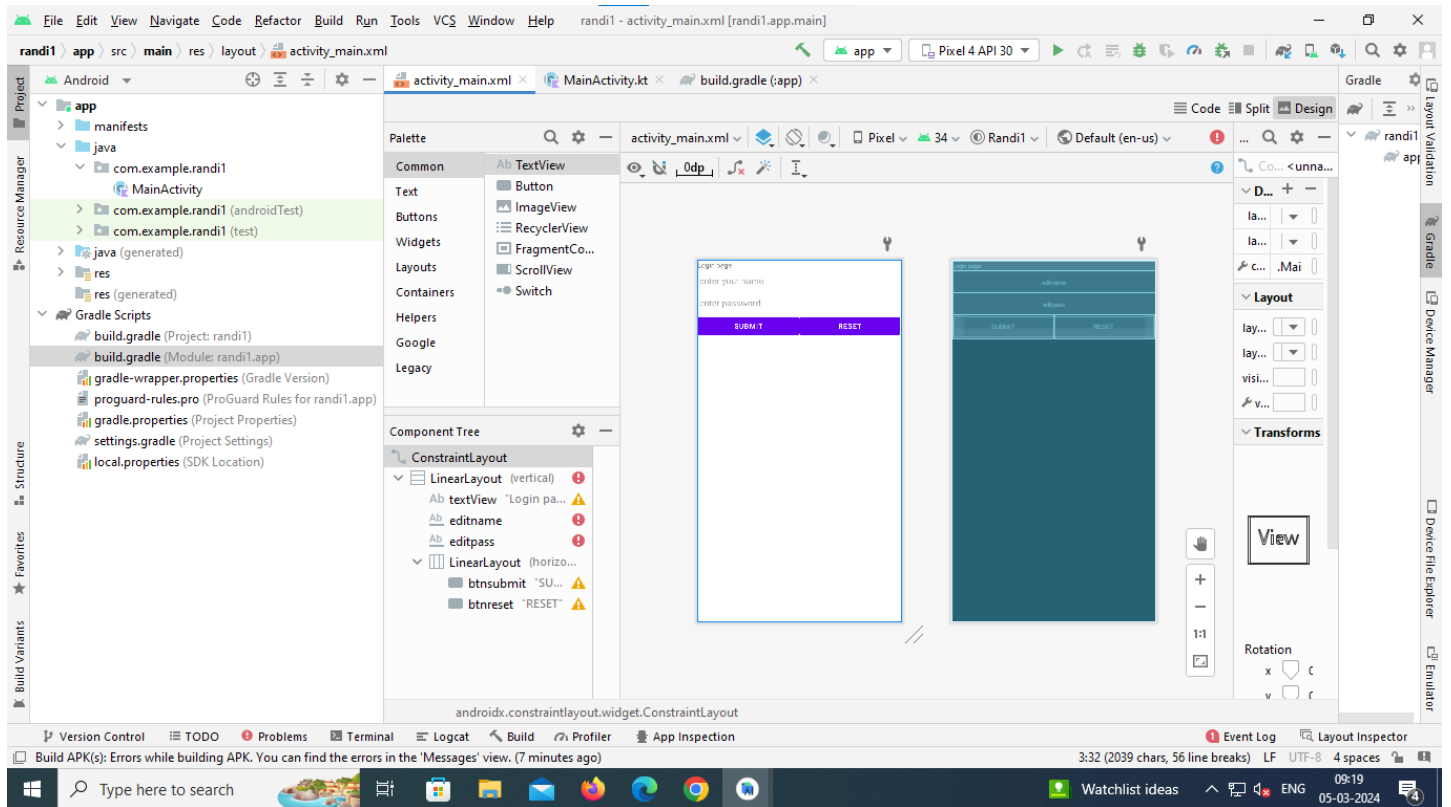
            <Button
                android:id="@+id/btnreset"
                android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="RESET" />
    </LinearLayout>
</LinearLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

```



Kt file:-

```
package com.example.randi1
```

```
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
```

```
abstract class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val submitbtn = findViewById<Button>(R.id.btnsubmit)
        val resetbtn = findViewById<Button>(R.id.btnreset)
        val name = findViewById<EditText>(R.id.editname)
        val pass = findViewById<EditText>(R.id.editpass)

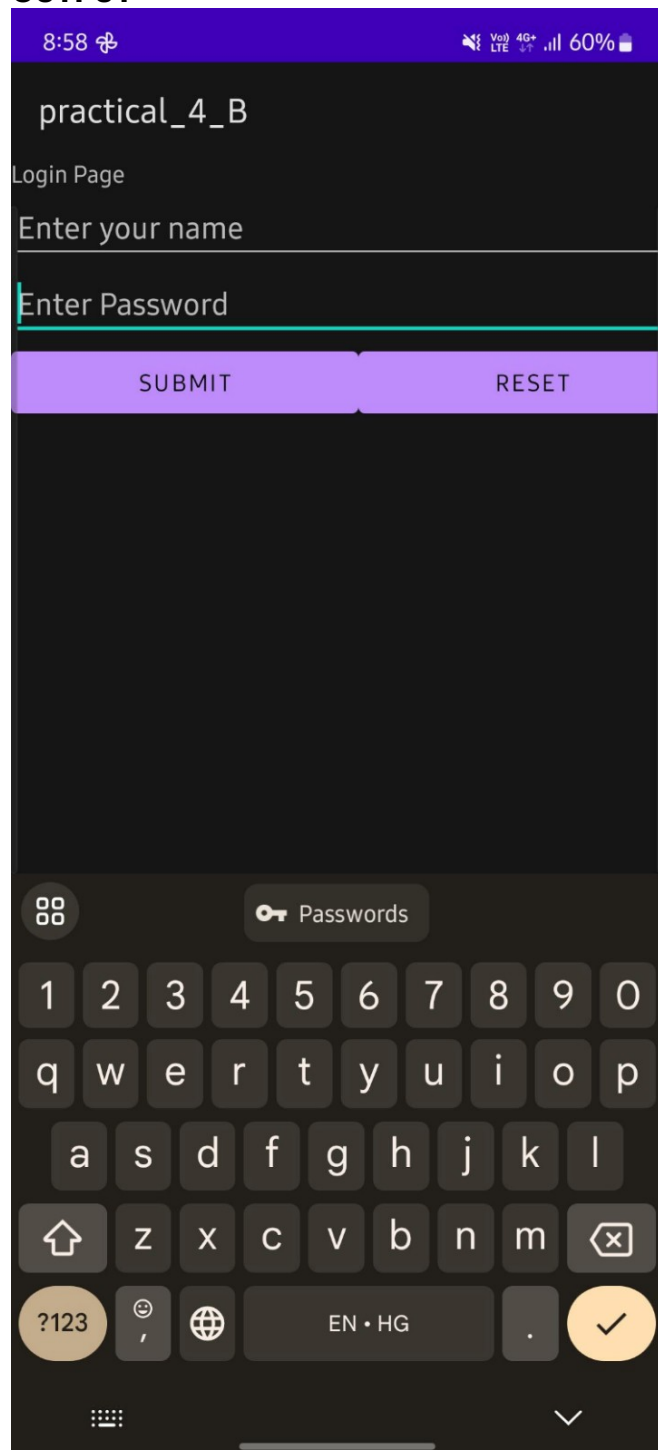
        submitbtn.setOnClickListener() {

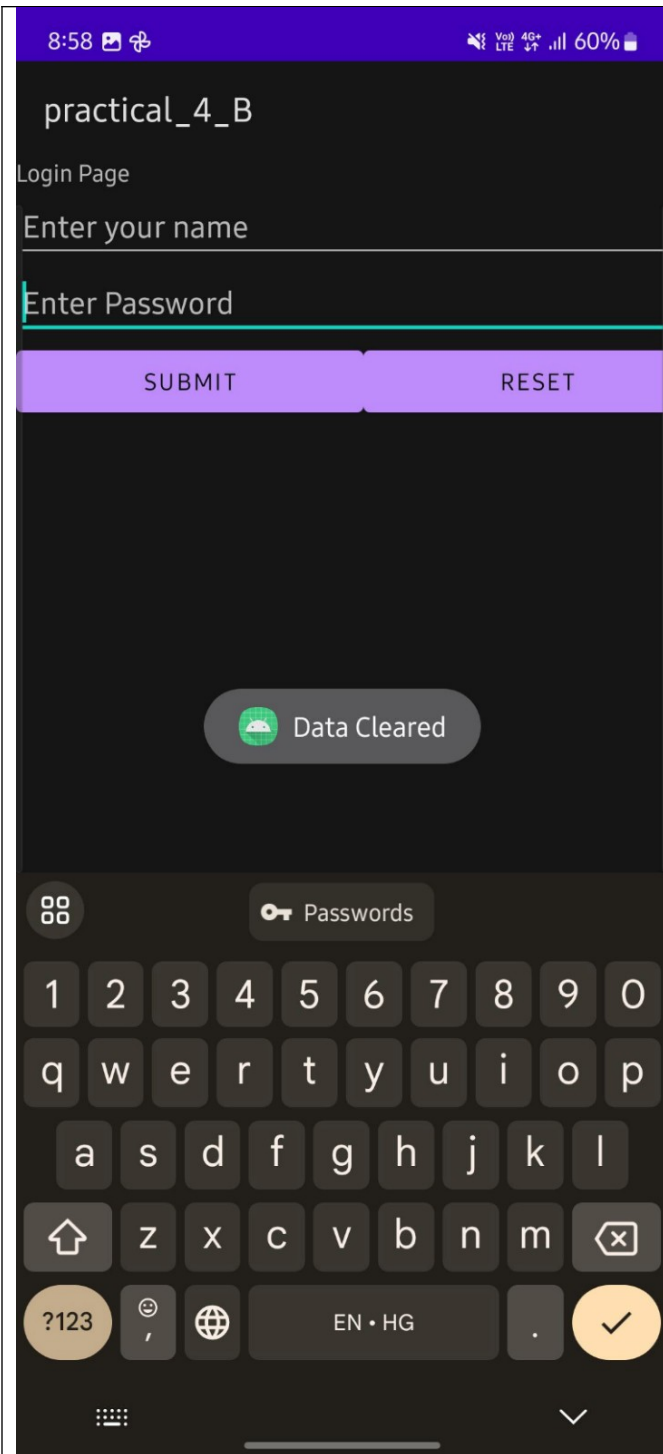
            Toast.makeText(this, "Data Submitted",Toast.LENGTH_SHORT).show()
        }

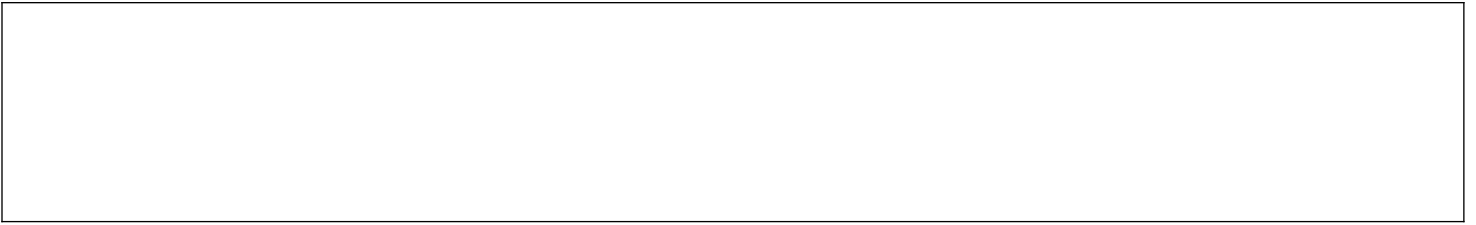
        resetbtn.setOnClickListener() {
            name.editableText.clear()
        }
    }
}
```

```
        pass.editableText.clear()  
    }  
}  
}
```

OUTPUT-







Name	Sonu kahar	Roll Number	21302A0053
Subject/ Course:	Advanced Mobile Programming		
Topic	Programming UI Elements		

Application Bar

7.a) Design a mobile application to demonstrate working of App Bar

Code:

```
package com.example.prac5b

import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.view.Menu
import android.view.MenuItem
import android.widget.Toast

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val meraBar = supportActionBar
        meraBar!!.title="Maza Navin Action Bar"
        meraBar.subtitle="Navin Ahe"
        meraBar.setIcon(R.drawable.zoro)
        meraBar.setDisplayUseLogoEnabled(true)
        meraBar.setDisplayHomeAsUpEnabled(true)

    }

    override fun onCreateOptionsMenu(menu: Menu?): Boolean {
        menuInflater.inflate(R.menu.menu1, menu)
        return super.onCreateOptionsMenu(menu)
    }

    override fun onOptionsItemSelected(item: MenuItem): Boolean {
        when(item.itemId){
            R.id.Copy -> Toast.makeText(this,"copy",Toast.LENGTH_LONG).show()
            R.id.Zoro -> Toast.makeText(this,"zoro",Toast.LENGTH_LONG).show()
            R.id.location -> Toast.makeText(this,"location",Toast.LENGTH_LONG).show()
        }
    }
}
```

```
R.id.search -> Toast.makeText(this, "search", Toast.LENGTH_LONG).show()
```

```
}  
return super.onOptionsItemSelected(item)  
}  
}
```

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
  xmlns:tools="http://schemas.android.com/tools"  
  package="com.example.prac5b">
```

```
  <application  
    android:allowBackup="true"  
    android:dataExtractionRules="@xml/data_extraction_rules"  
    android:fullBackupContent="@xml/backup_rules"  
    android:icon="@mipmap/ic_launcher"  
    android:label="@string/app_name"  
    android:roundIcon="@mipmap/ic_launcher_round"  
    android:supportRtl="true"  
    android:theme="@style/Theme.Prac5b"  
    tools:targetApi="31">
```

```
    <activity  
      android:name=".MainActivity"  
      android:exported="true">  
      <intent-filter>  
        <action android:name="android.intent.action.MAIN" />
```

```
        <category android:name="android.intent.category.LAUNCHER" />  
      </intent-filter>  
    </activity>  
  </application>
```

```
</manifest>
```

Menu code:

```
<?xml version="1.0" encoding="utf-8"?>  
<menu xmlns:android="http://schemas.android.com/apk/res/android"  
  xmlns:app="http://schemas.android.com/apk/res-auto"  
  xmlns:tools="http://schemas.android.com/tools">
```

```
  <item android:id="@+id/search"  
    android:title="Search"  
    android:icon="@drawable/png"  
    app:showAsAction="always"  
    android:orderInCategory="100"/>
```

```
<item android:id="@+id/location"  
    android:title="Location"  
    android:icon="@drawable/img"  
    app:showAsAction="ifRoom"  
    android:orderInCategory="101"/>
```

```
<item android:id="@+id/Copy"  
    android:title="Copy"  
    android:icon="@drawable/download"  
    app:showAsAction="never"  
    android:orderInCategory="102"/>
```

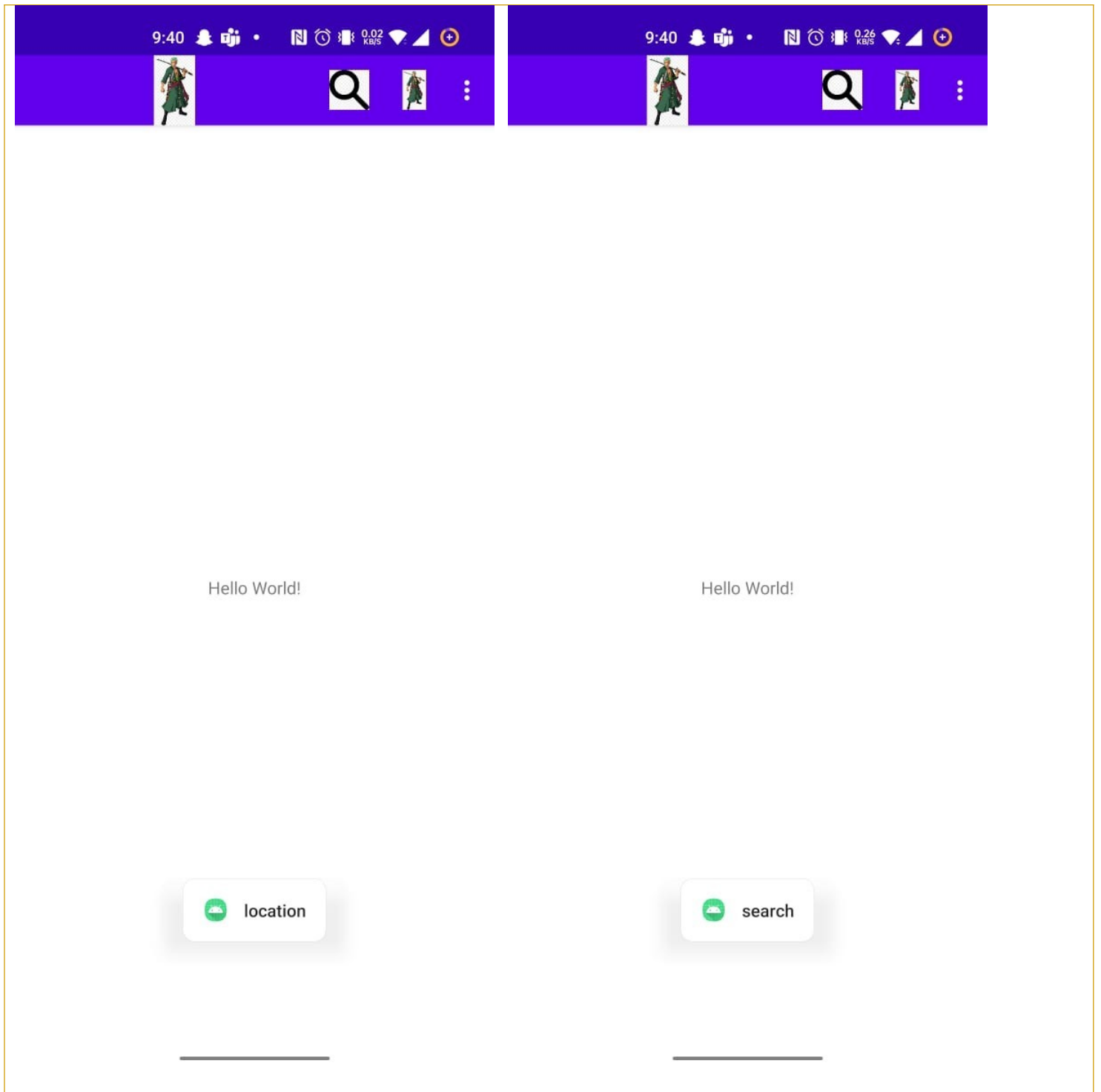
```
<item android:id="@+id/Zoro"  
    android:title="Zoro"  
    android:icon="@drawable/zoro"  
    app:showAsAction="always"  
    android:orderInCategory="103"/>
```

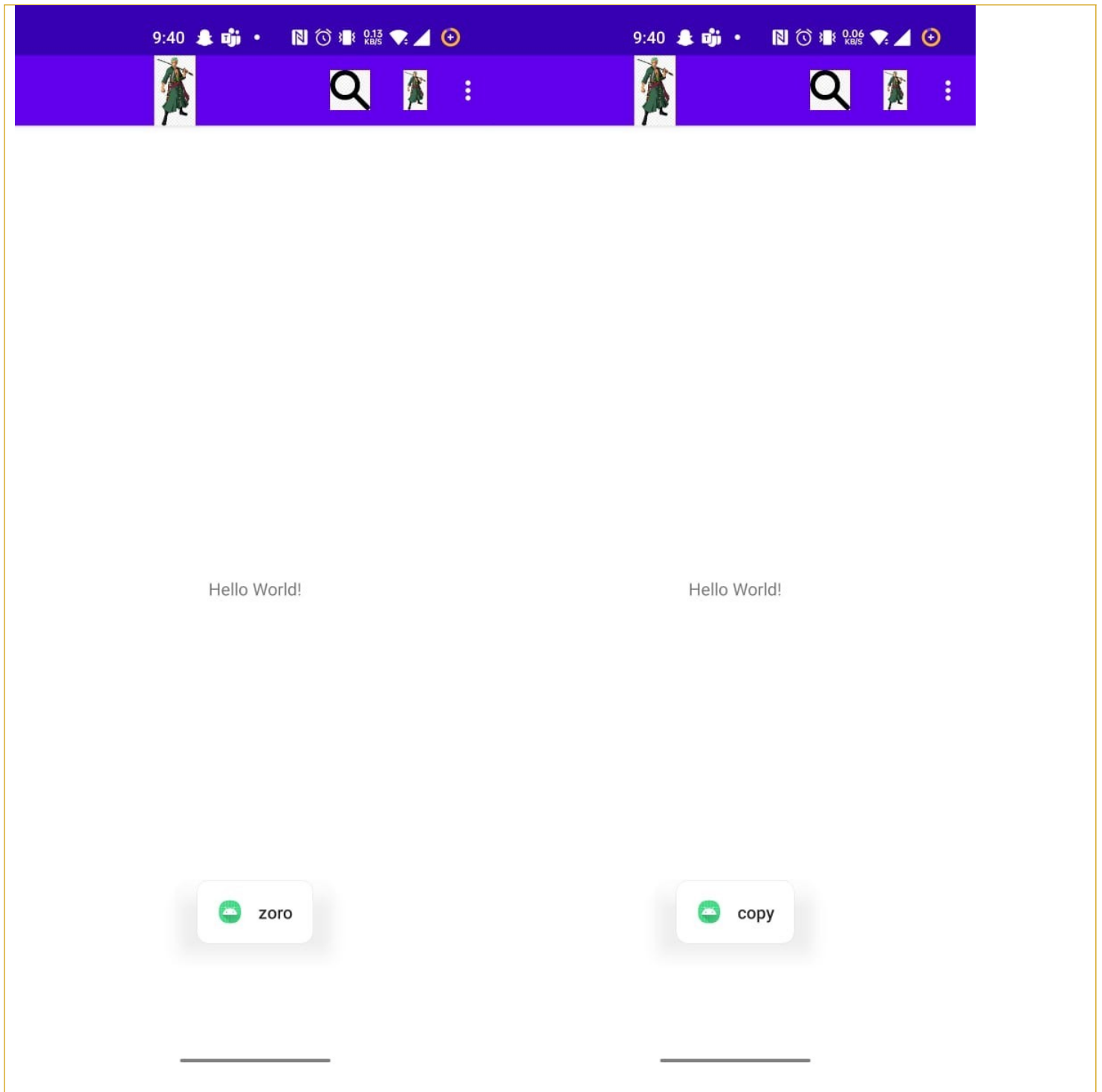
```
</menu>
```

Resource Code:

```
<resources>  
    <string name="app_name">NBS</string>  
</resources>
```

Output:





Login Form

7.b) Design a mobile application to create a login form

Name	Sonu kahar	Roll Number	21302A0053
Subject/Course:	Advanced Mobile Programming		
Topic	Programming Media API and Telephone API		

Media API

10.a) To create a program to access music (media) in your mobile phone.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"    android:gravity="center"
    android:orientation="vertical"    tools:context=".MainActivity">

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="122dp"
        android:layout_marginTop="61dp"
        android:text="Play"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignStart="@+id/button1"
        android:layout_alignParentTop="true"
        android:layout_marginTop="128dp"
        android:text="Pause" />

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignStart="@+id/button1"
        android:layout_alignParentTop="true"
        android:layout_marginTop="205dp"
        android:text="Continue" />
    <Button
        android:text="Stop"    android:layout_width="wrap_content"
        android:layout_height="wrap_content"    android:layout_alignParentBottom="true"
        android:id="@+id/button4"
        android:layout_alignStart="@+id/button1"    android:layout_marginBottom="186dp"/>
    <Button
        android:text="Button"    android:layout_width="wrap_content"
        android:layout_height="wrap_content"    android:layout_alignParentBottom="true"
        android:id="@+id/button5"    android:layout_alignStart="@+id/button1"
        android:layout_marginBottom="100dp"/>
</RelativeLayout>
```


MainActivity.kt

```
package com.example.music
import android.os.Bundle import android.media.MediaPlayer import
android.widget.Button
import androidx.appcompat.app.AppCompatActivity

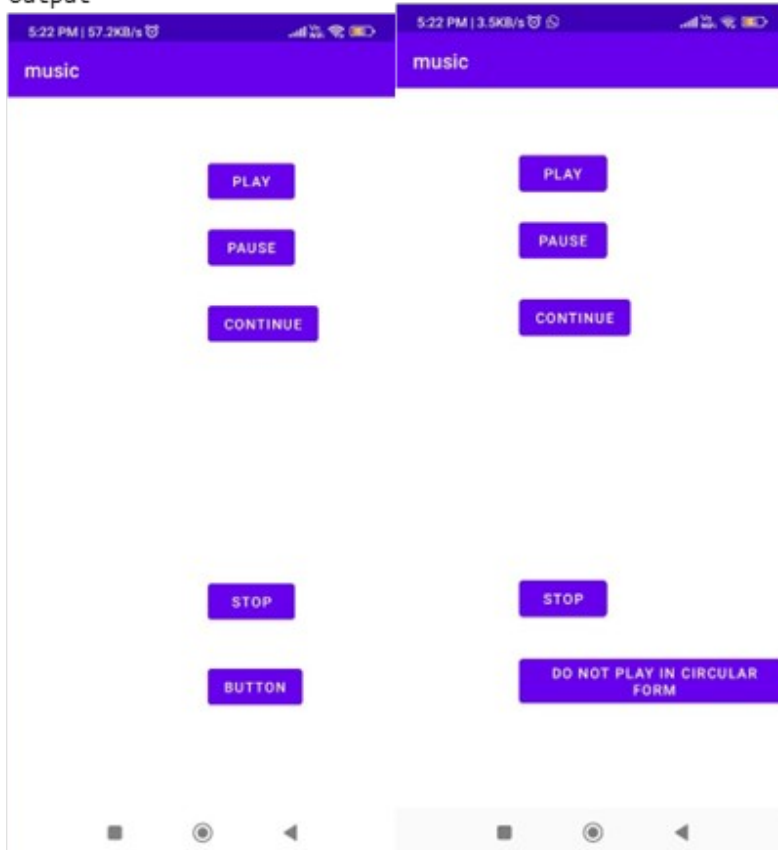
class MainActivity : AppCompatActivity() {    private lateinit var mp:
MediaPlayer
    override fun onCreate(savedInstanceState: Bundle?) {
super.onCreate(savedInstanceState)    setContentView(R.layout.activity_main)
mp = MediaPlayer.create (this,R.raw.song1)    mp = MediaPlayer.create
(this,R.raw.song)    var position = 0    val button1 = findViewById
(R.id.button1) as Button    val button2 = findViewById (R.id.button2) as Button
val button3 = findViewById (R.id.button3) as Button    val button4 = findViewById
(R.id.button4) as Button    val button5 = findViewById (R.id.button5) as Button
button1.setOnClickListener {    mp.start ()
    if (button5.text == "Do not play in a circular way")    mp.isLooping
= false    else
        mp.isLooping = true
    }
    button2.setOnClickListener {    if
(mp.isPlaying ()) {
        position = mp.getCurrentPosition ()    mp.pause ()
    }
    button3.setOnClickListener {    if (mp.isPlaying () ==
false) {    mp.seekTo (position)    mp.start ()
    }
    }
    button4.setOnClickListener {    mp.pause ()
position = 0    mp.seekTo (0)
    }
    button5.setOnClickListener {
        if (button5.text == "Do not play in a circular way")
button5.setText ("Play in circular form")    else
        button5.setText ("Do not play in circular form")
    }
}
```

```

    }
}
override fun onDestroy () {
    super.onDestroy ()
    mp.release ()
}
}

```

Output



Telephone API

10.b) To create a program that uses the calling feature of android mobile phones.

Acitivity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity"
    android:orientation="vertical" >
    <TextView
android:layout_width="wrap_content"
android:layout_height="131dp"
android:text="type number to call"
android:textAlignment="center"
android:textSize="36sp"
android:textStyle="bold" />
    <EditText
        android:id="@+id/phoneno"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Mobile numbur"
        android:inputType="phone"
        tools:ignore="Missing" />
    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/btncall"
        android:text="Call"
        />
</LinearLayout>
```

MainAcitivity.kt

```
package com.example.prac123
import android.content.Intent
import android.content.pm.PackageManager
import android.content.pm.PackageManager.PERMISSION_GRANTED
import android.net.Uri
import
import android.support.v7.app.AppCompatActivity
import android.os.Bundle import
import android.support.v4.app.ActivityCompat
import
import android.support.v4.content.ContextCompat
import
import android.support.v7.app.AppCompatActivity
import android.widget.Button import
import android.widget.EditText import
import android.widget.Toast import
import java.util.jar.Manifest

class MainActivity : AppCompatActivity() {    private lateinit var btnphoneCall: Button
private lateinit var editphoneNO:EditText    private var requestCall=1
    override fun onCreate(savedInstanceState: Bundle?)
    {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        title="Mera calling App"
        editphoneNO=findViewById(R.id.phoneno)
        btnphoneCall=findViewById(R.id.btncall)
        btnphoneCall.setOnClickListener(){
            makecall()
        }
    }
}
```

```

        private fun makecall(){
            val callinggo:String=editphoneNO.text.toString()
            if (callinggo.trim{it<=' '}.isEmpty()){
                if(ContextCompat.checkSelfPermission(this,
                    android.Manifest.permission.CALL_PHONE)!=PackageManager.PERMISSION_GRANTED){
                    ActivityCompat.requestPermissions(this,
                        arrayOf(android.Manifest.permission.CALL_PHONE),requestCall)
                }
            }
            else{
                val dial="tel:$callinggo"
                startActivity(Intent(Intent.ACTION_CALL, Uri.parse(dial)))
            }
        }
        else{
            Toast.makeText(this,"Enter phone
            numbur",Toast.LENGTH_LONG).show()
        }

        override fun onRequestPermissionsResult(
            requestCode: Int,
            permissions: Array<out String>,
            grantResults: IntArray
        ) {
            if (requestCode == requestCall) {
                if (grantResults[0]==PackageManager.PERMISSION_GRANTED) {
                    if (grantResults.isNotEmpty()) {
                        makecall()
                    }
                }
                else {
                    Toast.makeText(this, "Permission Denied to make call",
                        Toast.LENGTH_LONG).show()
                }
            }
        }
    }
}

```

AndroidMainfest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.example.prac123">

    <uses-permission android:name="android.permission.CALL_PHONE" />

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Prac123"
        tools:targetApi="31">
        <activity android:name=".MainActivity"
            android:exported="true">

```

```
<intent-filter>
  <action android:name="android.intent.action.MAIN" />

  <category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
</application>
```

</manifest>

Output

