Bharat Rai   59

Practical no 1   HELLO WORLD
Mainactivity.java

```java
package com.example.helloworld;

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);
  }
}
```
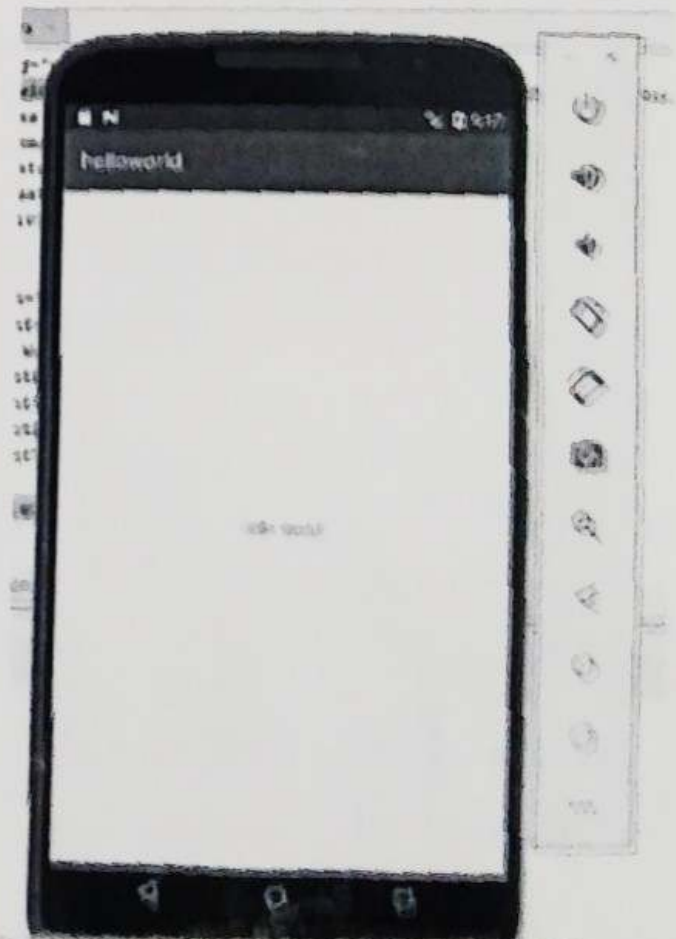
mainactivity.xml

```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">

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

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

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PRACTICAL NO. 02
RESOURCES IN ANDROID

Color Resource :

colors.xml as follow→

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
<color name="colorPrimary">#008577</color>
<color name="colorPrimaryDark">#00574B</color>
<color name="colorAccent">#D81B60</color>
<color name="red">#FF0000</color>
<color name="blue">#0000FF</color>
<color name="green">#00FF00</color>
</resources>
```

Activity_Main.xml→

```xml
<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"
    android:orientation="vertical"
    android:background="@color/green"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30dp"
        android:text="This is blue color"
        android:textColor="@color/blue"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="This is red color!"
        android:textSize="30dp"
        android:textColor="@color/red"
        />
</LinearLayout>
```

Dimension Resource:

dimens.xml →

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
<dimen name="height">35dp</dimen>
<dimen name="width">150dp</dimen>
```

```xml
<dimen name="size">20dp</dimen>
</resources>
```
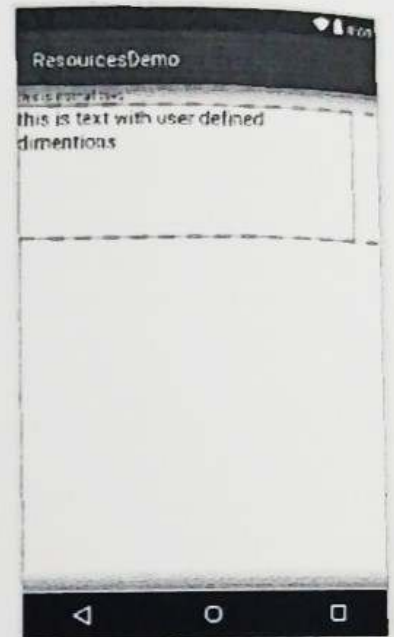
Activity_Main.xml→
```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="this is nornal text"/>

    <TextView
        android:layout_width="@dimen/width"
        android:layout_height="@dimen/height"
        android:textSize="@dimen/size"
        android:text="this is text with user defined dimentions"/>

</LinearLayout>
```

Drawable Resource:
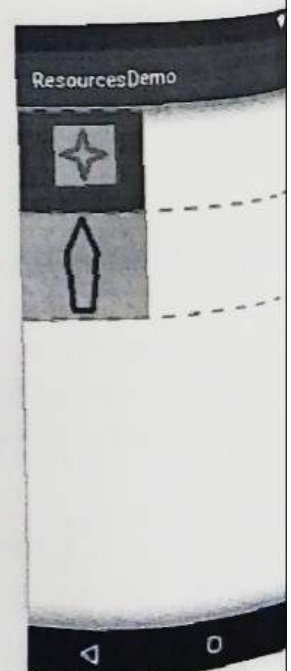
Activity_Main.xml →
```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ImageView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/Untitled"/>
    <ImageView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/Untitled1"/>
</LinearLayout>
```

String Resources:

strings.xml →
```
<resources>
<string name="app_name">ResourcesDemo</string>
<string name="Heading">Android Programming</string>
<string name="History">
    The history and versions of android are interesting to know. The code names of androidranges
from A to J currently, such as Aestro, Blender, Cupcake, Donut, Eclair, Froyo,Gingerbread,
Honeycomb, Ice Cream Sandwitch, Jelly Bean, KitKat and Lollipop.
    Let's understand the android history in a sequence.
    Initially, Andy Rubin founded Android Incorporation in Palo Alto,
    California, United States in October, 2003.In 17th August 2005,
    Google acquired android Incorporation. Since then,
    it is in the subsidiary of Google Incorporation.
</string>
</resources>
```

Activity_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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30dp"
        android:text="@string/Heading"
        android:textColor="@color/red"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/History"
        android:textSize="20dp"
        android:textColor="@color/blue"
        />
</LinearLayout>
```
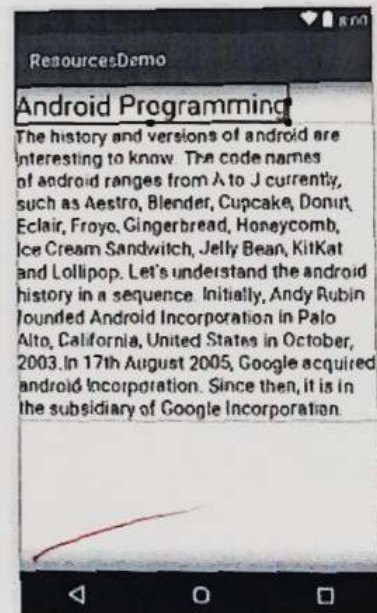
Style Resource:

To open style.xml file right click app→res→values→style.xml

Style.xml→

```xml
<resources>
<style name="MyTheme" parent="Theme.AppCompat.DayNight.DarkActionBar">
<item name="android:textColor">@color/red</item>
<item name="android:background">@color/blue</item>
</style>
</resources>
```

Manifest.xml→

To open manifest file app->>manifest→manifest.xml

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

<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
android:theme="@style/MyTheme">
<activity android:name=".MainActivity">
<intent-filter>
<action android:name="android.intent.action.MAIN" />

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

Practical no. 3

Activity Lifecycle

- How to add life cycle

  (Cursor should always be before closing of class and after closing of override method)

  1. Right click -> generate -> override method ->add respective life cycle

     OR

  2. Press Ctrl+ O to add respected method

MainActivity.Java

```java
package com.example.activitylc;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;

public class MainActivity extends AppCompatActivity {


  String tag="lifeCycle";
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
        Log.d(tag,"This is onCreate method");

  }

  @Override
  protected void onStart() {
    super.onStart();
    Log.d(tag,"This is onStart method");
  }

  @Override
  protected void onStop() {
    super.onStop();
    Log.d(tag,"This is onStop method");
  }

  @Override
  protected void onDestroy() {
    super.onDestroy();
    Log.d(tag,"This is onDestroy method");
  }

  @Override
  protected void onPause() {
    super.onPause();
    Log.d(tag,"This is onPause method");
  }

  @Override
  protected void onResume() {
    super.onResume();
    Log.d(tag,"This is onResume method");
  }
```

```
@Override
protected void onRestart() {
    super onRestart();
    Log d(tag, "This is onRestart method");
}
}
```

- Run the emulator once the Hello World output is shown in logcat search bar write "lifecycle".
- Close the app using back button then again open the app in mobile.
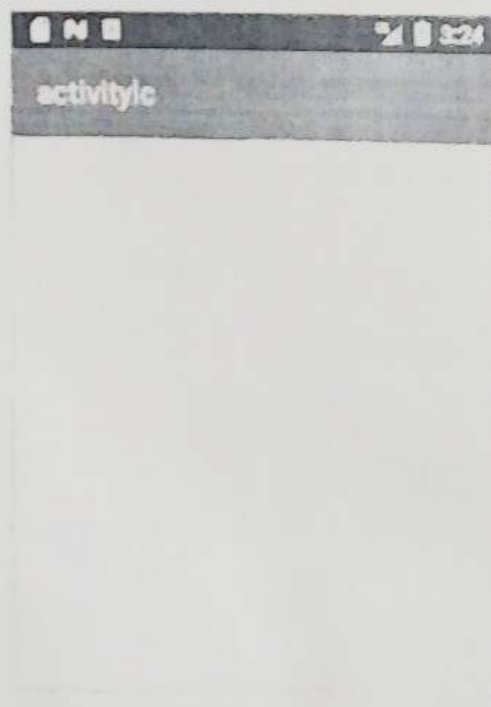
Logcat

Practical no 4

Fragment LifeCycle

59 Bharat Rai

- **How to add fragments.**
  Right click app (Project panel) -> new -> fragment -> blank fragment -> assign name -> uncheck 2nd (Factory
  method) & 3rd (callback) checkbox -> finish

Fragment.java:

```java
package com.example.activitylc;
import android.content.Context;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class BlankFragmentLC40 extends Fragment {

String tag ="lifecycle";

  public BlankFragmentLC40() {
    // Required empty public constructor
  }

            @Override
            public View onCreateView(LayoutInflater inflater, ViewGroup container,
                        Bundle savedInstanceState) {
            // Inflate the layout for this fragment
            Log.d(tag,"This is onCreate method");
            return inflater.inflate(R.layout.fragment_blank_fragment_lc40, container, false);
            }

            @Override
            public void onStart() {
              super.onStart();
              Log.d(tag,"This is onStart method");
            }

            @Override
            public void onResume() {
              super.onResume();
              Log.d(tag,"This is onResume method");
            }

            @Override
            public void onPause() {
              super.onPause();
              Log.d(tag,"This is onPause method");
            }

            @Override
            public void onStop() {
              super.onStop();
              Log.d(tag,"This is onStop method");
            }

            @Override
            public void onAttach(Context context) {
              super.onAttach(context);
              Log.d(tag,"This is onAttach method");
            }

            @Override
            public void onDetach() {
              super.onDetach();
              Log.d(tag,"This is onDetach method");
            }
```

```java
@Override
public void onDestroy() {
    super.onDestroy();
    Log.d(tag, "This is onDestroy method");
}
}
```

Fragment.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:background="@color/pink"
    tools:context=".BlankFragmentLC40">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:textColor="@color/colorPrimary"
        android:textSize="30dp"
        android:text="hello_blank_fragment" />

</FrameLayout>
```

Activity.xml

```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">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        />
    <fragment
        android:id="@+id/f1"
        class="com.example.activitylc.BlankFragmentLC40"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:layout="@layout/fragment_blank_fragment_lc40"/>

</LinearLayout>
```

Logcat

Emulator 2.7_QVGA_slider_API_2   com.example.activitylc   verbose   lifec cle

2023-01-16 16:37:49.423 6537-6537/? D/Lifecycle: This is onAttach method
2023-01-16 16:37:49.423 6537-6537/? D/Lifecycle: This is onCreate method
2023-01-16 16:37:49.430 6537-6537/? D/Lifecycle: This is onCreate method
2023-01-16 16:37:49.430 6537-6537/? D/Lifecycle: This is onStart method
2023-01-16 16:37:49.430 6537-6537/? D/Lifecycle: This is onStart method
2023-01-16 16:37:49.431 6537-6537/? D/Lifecycle: This is onResume method
2023-01-16 16:37:49.431 6537-6537/? D/Lifecycle: This is onResume method

Practical no. 5 & practical 6
UI components & types of layout   Practical 7
& Event Handling

1. Constraint Layout:

```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">
<TextView
    android:id="@+id/no1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="NO.1"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintHorizontal_bias="0.263"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.248" />
  <EditText
    android:id="@+id/editText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Name"
    tools:layout_editor_absoluteX="160dp"
    tools:layout_editor_absoluteY="163dp" />
  <TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="NO2"
    tools:layout_editor_absoluteX="100dp"
    tools:layout_editor_absoluteY="246dp" />
  <EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Name"
    tools:layout_editor_absoluteX="158dp"
    tools:layout_editor_absoluteY="228dp" />
  <TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="ANS"
    tools:layout_editor_absoluteX="104dp"
    tools:layout_editor_absoluteY="320dp" />

  <EditText
```

```xml
    android:id="@+id/editText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Name"
    tools:layout_editor_absoluteX="161dp"
    tools:layout_editor_absoluteY="309dp" />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    tools:layout_editor_absoluteX="111dp"
    tools:layout_editor_absoluteY="449dp" />
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    tools:layout_editor_absoluteX="111dp"
    tools:layout_editor_absoluteY="383dp" />
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    tools:layout_editor_absoluteX="226dp"
    tools:layout_editor_absoluteY="383dp" />
<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    tools:layout_editor_absoluteX="225dp"
    tools:layout_editor_absoluteY="449dp" />
<RadioButton
    android:id="@+id/radioButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="RadioButton"
    tools:layout_editor_absoluteX="79dp"
    tools:layout_editor_absoluteY="523dp" />
<RadioButton
    android:id="@+id/radioButton2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="RadioButton"
    tools:layout_editor_absoluteX="225dp"
    tools:layout_editor_absoluteY="523dp" />
<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="CheckBox"
    tools:layout_editor_absoluteX="94dp"
    tools:layout_editor_absoluteY="579dp" />
```

```xml
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="ANS"/>
<EditText
    android:id="@+id/editText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="see ans here" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add"
    />
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sub"
    />
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="mul"
    />
<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="div"
    />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
<RadioButton
    android:id="@+id/radioButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Male" />
<RadioButton
    android:id="@+id/radioButton2"
    android:layout_width="wrap_content"
```

ADD   SUB   MUL   DIV

Male Female

Music Sports

OFF

```xml
        <CheckBox
          android:id="@+id/checkBox2"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="CheckBox"
          tools:layout_editor_absoluteX="226dp"
          tools:layout_editor_absoluteY="579dp" />
        <ToggleButton
          android:id="@+id/toggleButton"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="ToggleButton"
          tools:layout_editor_absoluteX="152dp"
          tools:layout_editor_absoluteY="642dp" />
```

2.Linear Layout:

```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"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="horizontal">

    <TextView
      android:id="@+id/no1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="NO.1"      />

    <EditText
      android:id="@+id/editText"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:hint="enter no 1" />
    </LinearLayout>
    <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="horizontal">
    <TextView
      android:id="@+id/textView"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="NO2"
      />
    <EditText
      android:id="@+id/editText2"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:hint="enter no 2"
      />
```

```xml
        android:layout_height="wrap_content
        android:text="Female" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Music"
    />
<CheckBox
    android:id="@+id/checkBox2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sports" />
</LinearLayout>

<ToggleButton
    android:id="@+id/toggleButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Ok" />
</LinearLayout>
```

3. Table Layout:

```xml
<?xml version="1.0" encoding="utf-8"?>
<TableLayout
    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:orientation="vertical"
    tools:context=".MainActivity">
    <TableRow>
        <TextView
        android:id="@+id/no1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="NO.1"
        />
        <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="enter no 1" />
    </TableRow>
    <TableRow>
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="NO2"
        />
```

```xml
<EditText
  android:id="@+id/editText2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:hint="enter no 2"
  />
</TableRow>
<TableRow>
<TextView
  android:id="@+id/textView2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="ANS"
/>
  <EditText
    android:id="@+id/editText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="see ans here"
    />
</TableRow>
<TableRow>
<Button
  android:id="@+id/button"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Add"
  />
<Button
  android:id="@+id/button2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Sub"
  />

<Button
  android:id="@+id/button3"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="mul"
  />
<Button
  android:id="@+id/button4"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="div"
  />
</TableRow>
<TableRow>
<RadioButton
  android:id="@+id/radioButton"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Male" />

<RadioButton
  android:id="@+id/radioButton2"
```

```xml
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"
        />
    </TableRow>
    <TableRow>
    <CheckBox
        android:id="@+id/checkBox"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Music"
        />
    <CheckBox
        android:id="@+id/checkBox2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Sports"
        />
    </TableRow>
    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Ok"
        />
</>
```

4.Grid Layout

```xml
<?xml version="1.0" encoding="utf-8"?>
<GridLayout
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:rowCount="7"
    android:columnCount="2"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/no1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="NO.1"
        />

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="enter no 1" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="NO2"
        />

    <EditText
```
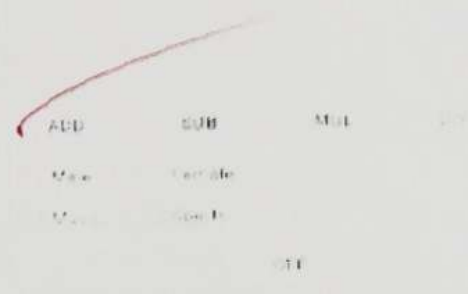
```xml
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="enter no 2"
    />
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="ANS"
/>
<EditText
    android:id="@+id/editText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="see ans here"
    />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add"
    />
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sub"
    />
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="mul"
    />
<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="div"
    />
<RadioButton
    android:id="@+id/radioButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Male" />
<RadioButton
    android:id="@+id/radioButton2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Female"
    />
<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Music"
```

```
    />
<CheckBox
    android:id="@+id/checkBox2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sports"
    />
<ToggleButton
    android:id="@+id/toggleButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Ok"
    />
</>
```
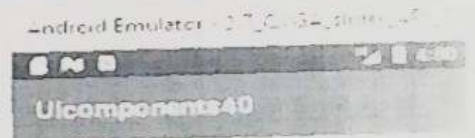
Event Handling:

```
package com.example.uicomponents40;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.*;
public class MainActivity extends AppCompatActivity {
    EditText e1,e2,e3;
    Button b1,b2,b3,b4;
    RadioButton r1,r2;
    CheckBox c1,c2;
    ToggleButton t1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText) findViewById(R.id.editText);
        e2=(EditText)findViewById(R.id.editText2);
        e3=(EditText)findViewById(R.id.editText3);
        b1=(Button) findViewById(R.id.button);
        b2=(Button)findViewById(R.id.button2);
        b3=(Button)findViewById(R.id.button3);
        b4=(Button)findViewById(R.id.button4);
        r1=(RadioButton) findViewById(R.id.radioButton);
        r2=(RadioButton) findViewById(R.id.radioButton2);
        c1=( CheckBox)findViewById(R.id.checkBox);
        c2=( CheckBox)findViewById(R.id.checkBox2);
        t1=(ToggleButton)findViewById(R.id.toggleButton);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(),"this is add button",Toast.LENGTH_LONG).show();
            }
        });
        r1.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton compoundButton, boolean b) {
                Toast.makeText(getApplicationContext(),"Male selected",Toast.LENGTH_LONG).show();
            }
        });
        r2.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton compoundButton, boolean b) {
```

```java
            Toast.makeText(getApplicationContext(), "FeMale selected",Toast.LENGTH_LONG).show();
        }
    });
    c1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Toast.makeText(getApplicationContext(),"this is music
checkbox",Toast.LENGTH_LONG).show();

        }
    });
    c2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Toast.makeText(getApplicationContext(),"this is sports
checkbox",Toast.LENGTH_LONG).show();

        }
    });
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {

        int n1,n2,a;
        n1=Integer.parseInt(e1.getText().toString());
        n2=Integer.parseInt(e2.getText().toString());
        a=n1+n2;
        e3.setText("sum= "+a);
        } });b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {

        int n1,n2,a;
        n1=Integer.parseInt(e1.getText().toString());
        n2=Integer.parseInt(e2.getText().toString());
        a=n1-n2;
        e3.setText("sub= "+a);
    }
}); } }
```

Roll no:
Practical no.8
Activity to Activity Communication

Activity_main.xml file

```
<?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">

    <Button
        android:id="@+id/b1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Go To Second Activity"/>

</LinearLayout>
```

Main_Activity.java

```
package com.example.acttoact21;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button b1 = (Button)findViewById(R.id.b1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i=new Intent(getApplicationContext(),Main2Activity.class);
                startActivity(i);
            }
        });
    }
}
```
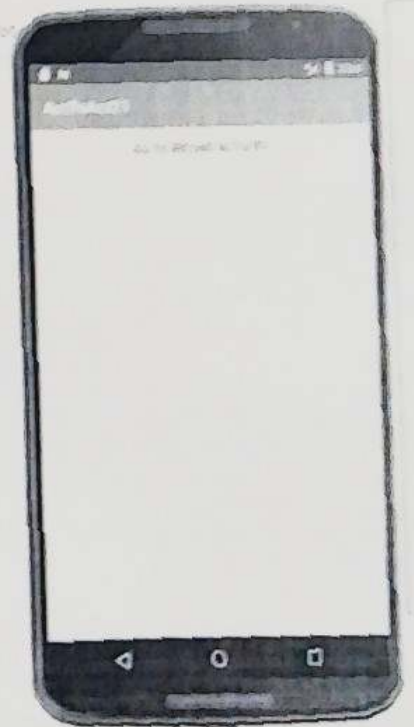
Activity_main2.xml

```
<?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"
    android:background="@color/colorPrimaryDark"
    tools:context=".Main2Activity">

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

Roll no:

Practical no.9
List View with Event Handling

Activity_main.xml file

```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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ListView
        android:id="@+id/lv"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
</LinearLayout>
```

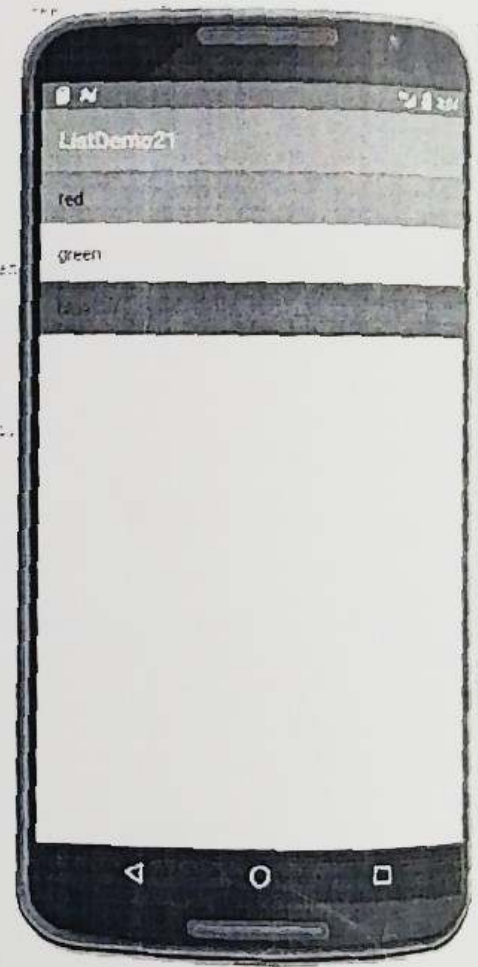## Main_Activity.java file

```java
package com.example.listdemo21;

import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener
{
    ListView lv1;
    String[] c={"red","green","blue"};

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        lv1=(ListView)findViewById(R.id.lv);
        ArrayAdapter<String> a = new
ArrayAdapter<String>(this,android.R.layout.simple_list_item_1,c);
        lv1.setAdapter(a);
        lv1.setOnItemClickListener(this);
    }

    @Override
    public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
        TextView tv=(TextView) view;
        if(i==0){
            tv.setBackgroundColor(Color.RED);
        }
        if(i==1){
            tv.setBackgroundColor(Color.GREEN);
        }
        if(i==2){
            tv.setBackgroundColor(Color.BLUE);
        }
    }
}
```

Roll no:
Practicle no.10
MenuBar
Menu file

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item android:id="@+id/r"
    android:title="Red"/>
  <item android:id="@+id/g"
    android:title="Green"/>
  <item android:id="@+id/b"
    android:title="Blue"/>
</menu>
```

In Xml file under ConstraintLayout
```
android:layout_width="match_parent"
android:layout_height="match_parent"
```
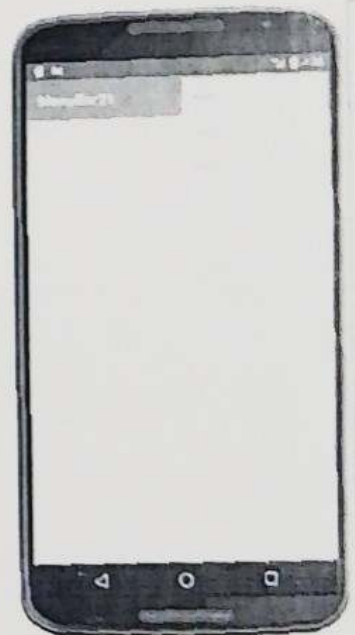
Java file
```java
package com.example.menubar21;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.graphics.Color;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

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

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater mi=getMenuInflater();
        mi.inflate(R.menu.mymenu,menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        TextView tv=(TextView)findViewById(R.id.tv);
        switch (item.getItemId()){
            case R.id.r:
                tv.setBackgroundColor(Color.RED);
                return true;
            case R.id.g:
                tv.setBackgroundColor(Color.GREEN);
                return true;
            case R.id.b:
                tv.setBackgroundColor(Color.BLUE);
                //Intent i=new Intent(getApplicationContext(),Main2Activity.class);
                //startActivity(i);
                return true;
        }
        return super.onOptionsItemSelected(item);
    }
}
```

Practical no.11
Activity to Fragment Communication
Activity_main.xml file

```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"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/btnred"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="changefragment"
        android:text="Call Red Fragment"/>

    <Button
        android:id="@+id/btngreen"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="changefragment"
        android:text="Call Green Fragment"/>

    <fragment
        android:name="com.example.atof21.RedFragment"
        android:id="@+id/fragment1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>
</LinearLayout>
```

Fragment_red.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout
    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:background="@color/colorPrimaryDark"
    tools:context=".RedFragment">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="This is Red Fragment" />
</FrameLayout>
```

Fragment_green.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:background="@color/colorPrimary"
    tools:context=".GreenFragment">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:textSize="30dp"
        android:text="This is Green Fragment" />
```

</FrameLayout>

MainActivitty.java file
package com.example.atof21;

import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;

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

public class MainActivity extends AppCompatActivity {

    Button btnred;
    Button btngreen;

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

    public void changefragment(View view) {
        Fragment fg;
        if(view==findViewById(R.id.btnred)){
            fg=new RedFragment();
            FragmentManager fm = getSupportFragmentManager();
            FragmentTransaction ft = fm.beginTransaction();
            ft.replace(R.id.fragment1,fg);
            ft.commit();
        }
        if(view==findViewById(R.id.btngreen)){
            fg=new GreenFragment();
            FragmentManager fm = getSupportFragmentManager();
            FragmentTransaction ft = fm.beginTransaction();
            ft.replace(R.id.fragment1,fg);
            ft.commit();
        }
    }
}

Steps to add fragments:

- App-> new -> fragment -> blank fragment
- Uncheck factory methods -> interface caliback->language- java->target-main
- Create one more fragment using same steps

Activity_main.xml

```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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <FrameLayout
        android:id="@+id/fragmentcontainer"
        android:layout_width="370dp"
        android:layout_height="490dp"
        tools:layout_editor_absoluteX="8dp"
        tools:layout_editor_absoluteY="8dp" />
</LinearLayout>
```

Fragment1.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    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:orientation="vertical"
    tools:context=".Fragmen1">

    <Button
        android:id="@+id/btnsend"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send Message" />

    <EditText
        android:id="@+id/txtmsg"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="enter your message here" />
</LinearLayout>
```

Practical no.13
Database Communication

Activity_main.xml file

```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"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Username" />
    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter your Name here" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Password" />
    <EditText
        android:id="@+id/password"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter your Password here" />
    <Button
        android:id="@+id/login"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login" />     android: onClick
    <Button
        android:id="@+id/drop"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Drop" />
    <Button
        android:id="@+id/register"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Register" />
</LinearLayout>
```

Mainactivity.java→

```java
package com.example.db21;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.database.*;
import android.database.sqlite.*;
import android.os.Bundle;
import android.view.View;
import android.widget.*;
```
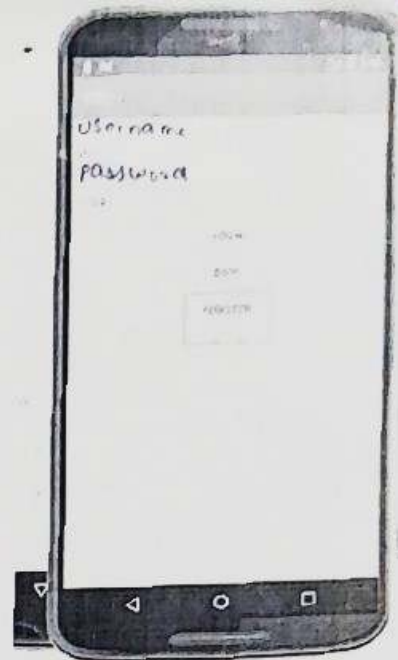
1

```java
class MyDB extends SQLiteOpenHelper{
    MyDB(Context c){
        super(c,"logindb",null,1);
    }
    @Override
    public void onCreate(SQLiteDatabase db){
        String str="create table login(username text,password text)";
        db.execSQL(str);
    }
    @Override
    public void onUpgrade(SQLiteDatabase db,int oldVersion,int newVersion){
        String dr="drop table if exists login";
        db.execSQL(dr);
        onCreate(db);
    }
}
public class MainActivity extends AppCompatActivity {
    MyDB mdb;
    EditText eusername,epassword;
    Button blogin,bdrop,bregister;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        eusername=(EditText)findViewById(R.id.username);
        epassword=(EditText)findViewById(R.id.password);
        blogin=(Button)findViewById(R.id.login);
        bdrop=(Button)findViewById(R.id.drop);
        bregister=(Button)findViewById(R.id.register);
        mdb=new MyDB(this);
    }
    public void login_fun(View v){
        String un=String.valueOf(eusername.getText());
        String pass=String.valueOf(epassword.getText());
        db=mdb.getReadableDatabase();
        String q="select * from login where username='"+un+"'and password='"+pass+"'";
        try {
            Cursor c=db.rawQuery(q,null);
            if(c.getCount()==0){
                Toast.makeText(this,"Username or Password wrong or User doesn't exists",Toast.LENGTH_LONG).show();
            }else{
                while(c.moveToNext()){
                    String uname=c.getString(0);
                    String passw=c.getString(1);
                    Toast.makeText(this,"Username:"+ uname +"\nPassword:" + passw,Toast.LENGTH_LONG).show();
                    if(un.contentEquals(uname)&&pass.contentEquals(passw)){
                        Toast.makeText(this,"Welcome User:" + un,Toast.LENGTH_LONG).show();
                    }
                    c.close();
                }
            }
        }
        catch(SQLiteException sqle) {
            sqle.printStackTrace();
        }
    public void register_fun(View v){
        String un=String.valueOf(eusername.getText());
        String pass=String.valueOf(epassword.getText());
        db=mdb.getWritableDatabase();
        String q="insert into login values('"+un+"','"+pass+"')";
        db.execSQL(q);
        Toast.makeText(getApplicationContext(),"User Registered",Toast.LENGTH_SHORT).show();
    }
    public void drop_fun(View v)
    {
        db=mdb.getWritableDatabase();
        mdb.onUpgrade(db,1,2);
        Toast.makeText(getApplicationContext(),"All User Deleted",Toast.LENGTH_SHORT).show();
    }
}
```

2