

Practical no. 4

Exercise :

Q 2 : Write a program to display student name and marks.

```
<?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:paddingLeft="16dp"
android:paddingRight="16dp"
android:paddingTop="16dp"
tools:context=".MainActivity">

<TextView
    android:id="@+id/student_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:text="Shreedhar Phase" />

<TextView
    android:id="@+id/student_marks"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_toRightOf="@+id/student_name"
    android:layout_centerInParent="true"
    android:paddingLeft="16dp"
    android:text="99" />

</RelativeLayout>
```

Output :



Practical no. 5

Exercise :

Q 1 : Write a program to place Name, Age and mobile number linearly (Vertical) on the display screen using Linear layout.

```
<?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:paddingLeft="16dp"
android:paddingRight="16dp"
android:paddingTop="16dp"
android:orientation="vertical"
tools:context=".MainActivity">

<TextView
    android:id="@+id/student_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Name:Shree Phase" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Age: 20" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Mobile Number: 9373010729" />

</LinearLayout>
```

Output :



Practical no. 6

Exercise :

Q 1: Write a program to display 10 students basic information in a table form using Table layout.

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout
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:collapseColumns="*"
android:shrinkColumns="*"
tools:context=".MainActivity">

<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center_horizontal">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="10 Students Basic Information"
        android:textColor="#86AD33"
        android:textSize="20dp"
        android:textStyle="bold" />

</TableRow>
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
    <TextView
        android:layout_width="0dp"
        android:layout_weight="1"
        android:text="Student Numbers"
        android:textColor="#000"
        android:textStyle="bold" />

    <TextView
        android:layout_width="0dp"
        android:layout_weight="1"
        android:text="Name"
        android:textColor="#000"
        android:textStyle="bold" />

    <TextView
        android:layout_width="0dp"
        android:layout_weight="1"
        android:text="RollNo"
        android:textColor="#000"
        android:textStyle="bold" />

    <TextView
        android:layout_width="0dp"
        android:layout_weight="1"
        android:text="Age"
        android:textColor="#000"
        android:textStyle="bold" />

</TableRow>
<TableRow
```

Output :



Student Numbers	Name	RollNo	Age
Student 1:	shree	16	20
Student 2:	shubham	18	19
Student 3:	ranjit	01	20
Student 4:	bhaskar	08	20
Student 5:	vaishnavi	17	20
Student 6:	chinmai	21	19
Student 7:	samruddhi	27	18
Student 8:	parth	12	20
Student 9:	vivek	02	19
Student 10:	raj	15	19

```
android:layout_width="match_parent"
android:layout_height="wrap_content">
```

```
<TextView
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="Student 1:"
    android:textColor="#86AD33"
    android:textStyle="bold" />
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="shree"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="16"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="20"/>
```

```
</TableRow>
```

```
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
<TextView
    android:layout_width="0dp"
    android:layout_weight="1"
    android:text="Student 2:"
    android:textColor="#86AD33"
    android:textStyle="bold" />
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="shubham"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="18"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="19"/>
```

```
</TableRow>
```

```
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
<TextView
    android:layout_width="0dp"
    android:layout_weight="1"
    android:text="Student 3:"
    android:textColor="#86AD33"
    android:textStyle="bold" />

<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="ranjit"/>

<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="01"/>

<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="20"/>
</TableRow>
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

    <TextView
        android:layout_width="0dp"
        android:layout_weight="1"
        android:text="Student 4:"
        android:textColor="#86AD33"
        android:textStyle="bold" />

    <EditText
        android:layout_width="0dp"
        android:layout_weight="1"
        android:layout_height="wrap_content"
        android:text="bhaskar"/>

    <EditText
        android:layout_width="0dp"
        android:layout_weight="1"
        android:layout_height="wrap_content"
        android:text="08"/>

    <EditText
        android:layout_width="0dp"
        android:layout_weight="1"
        android:layout_height="wrap_content"
        android:text="20"/>
</TableRow>
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

    <TextView
        android:layout_width="0dp"
        android:layout_weight="1"
```

```
android:text="Student 5:"  
android:textColor="#86AD33"  
android:textStyle="bold" />
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="vaishnavi"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="17"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="20"/>
```

```
</TableRow>
```

```
<TableRow  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content">
```

```
<TextView  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:text="Student 6:"  
    android:textColor="#86AD33"  
    android:textStyle="bold" />
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="chinmai"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="21"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="19"/>
```

```
</TableRow>
```

```
<TableRow  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content">
```

```
<TextView  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:text="Student 7:"  
    android:textColor="#86AD33"  
    android:textStyle="bold" />
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="samruddhi"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="27"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="18"/>
```

```
</TableRow>
```

```
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
<TextView
    android:layout_width="0dp"
    android:layout_weight="1"
    android:text="Student 8:"
    android:textColor="#86AD33"
    android:textStyle="bold" />
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="parth"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="12"/>
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
    android:text="20"/>
```

```
</TableRow>
```

```
<TableRow
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
<TextView
    android:layout_width="0dp"
    android:layout_weight="1"
    android:text="Student 9:"
    android:textColor="#86AD33"
    android:textStyle="bold" />
```

```
<EditText
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="wrap_content"
```

```
android:text="vivek"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="02"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="19"/>
```

```
</TableRow>
```

```
<TableRow  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content">
```

```
<TextView  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:text="Student 10:"  
    android:textColor="#86AD33"  
    android:textStyle="bold" />
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="raj"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="15"/>
```

```
<EditText  
    android:layout_width="0dp"  
    android:layout_weight="1"  
    android:layout_height="wrap_content"  
    android:text="19"/>
```

```
</TableRow>
```

```
</TableLayout>
```


Practical no. 7

Exercise :

Q 1 : Write a program to accept username and password from the end user using Text View and Edit Text.

activity_main.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:padding="50dp"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:textSize="25dp"
        android:text="Login Page" />

    <TableRow
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center_horizontal">

        <TextView
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Enter UserName:" />

        <EditText
            android:id="@+id/user"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:hint="abc@gmail.com" />
    </TableRow>

    <TableRow
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center_horizontal">

        <TextView
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Enter Password:" />

        <EditText
            android:id="@+id/pass"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:hint="1234" />
    </TableRow>

    <Button
        android:id="@+id/login"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="Login" />
</TableLayout>
```

Output :



```
</TableRow>
```

```
<Button
    android:id="@+id/btn1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="172dp"
    android:text="Login" />
```

```
</TableLayout>
```

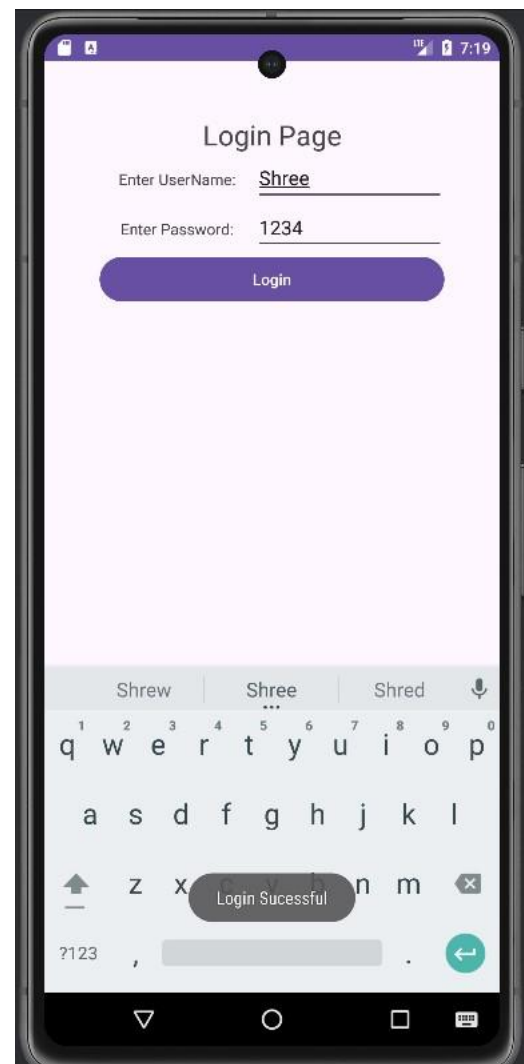
MainActivity.java

```
package com.example.helloworld;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    EditText user,pass;
    Button b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b= findViewById(R.id.btn1);
        user = findViewById(R.id.user);
        pass = findViewById(R.id.pass);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if(user.getText().toString().equals("Shree") &
pass.getText().toString().equals("1234"))
                {
                    Toast.makeText( getApplicationContext(),"Login
Sucessful",Toast.LENGTH_SHORT).show();
                }
                else
                {
                    Toast.makeText(
getApplicationContext(),"error",Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```



Practical no. 8

Exercise :

Q 1 :Write a program to create a first display screen of any search engine using Auto Complete Text View.

activity_main.xml

```
<?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"
    tools:context=".MainActivity">

    <AutoCompleteTextView
        android:id="@+id/autoCompleteTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:layout_centerVertical="true"
        android:hint="Search"
        android:completionThreshold="1" />

</RelativeLayout>
```

MainActivity.java

```
package com.example.helloworld;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.AutoCompleteTextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        AutoCompleteTextView autoCompleteTextView =
            findViewById(R.id.autoCompleteTextView);
        String[] suggestions = {"Google", "Bing", "Yahoo",
            "DuckDuckGo", "Ask"};
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
            android.R.layout.simple_dropdown_item_1line,
            suggestions);
        autoCompleteTextView.setAdapter(adapter);
    }
}
```



Practical no. 11

Exercise :

Q 1 : Write a program to show five checkboxes and toast selected checkboxes.

```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical">

    <CheckBox
        android:id="@+id/checkbox1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Checkbox 1"/>

    <CheckBox
        android:id="@+id/checkbox2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Checkbox 2"/>

    <CheckBox
        android:id="@+id/checkbox3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Checkbox 3"/>

    <CheckBox
        android:id="@+id/checkbox4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Checkbox 4"/>

    <CheckBox
        android:id="@+id/checkbox5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Checkbox 5"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.myapplication1;
import android.os.Bundle;
import android.view.View;
import android.widget.CheckBox;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    private CheckBox mCheckbox1, mCheckbox2, mCheckbox3,
mCheckbox4, mCheckbox5;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mCheckbox1 = findViewById(R.id.checkbox1);
        mCheckbox2 = findViewById(R.id.checkbox2);
```



```

        mCheckbox3 = findViewById(R.id.checkbox3);
        mCheckbox4 = findViewById(R.id.checkbox4);
        mCheckbox5 = findViewById(R.id.checkbox5);
    }

    private final View.OnClickListener onCheckboxClickListener =
    new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            StringBuilder selectedCheckboxes = new StringBuilder();
            if (mCheckbox1.isChecked()) {

                selectedCheckboxes.append(mCheckbox1.getText().toString());
                selectedCheckboxes.append(", ");
            }
            if (mCheckbox2.isChecked()) {

                selectedCheckboxes.append(mCheckbox2.getText().toString());
                selectedCheckboxes.append(", ");
            }
            if (mCheckbox3.isChecked()) {

                selectedCheckboxes.append(mCheckbox3.getText().toString());
                selectedCheckboxes.append(", ");
            }
            if (mCheckbox4.isChecked()) {

                selectedCheckboxes.append(mCheckbox4.getText().toString());
                selectedCheckboxes.append(", ");
            }
            if (mCheckbox5.isChecked()) {

                selectedCheckboxes.append(mCheckbox5.getText().toString());
                selectedCheckboxes.append(", ");
            }
            if (selectedCheckboxes.length() > 0) {
                selectedCheckboxes.delete(selectedCheckboxes.length() -
2, selectedCheckboxes.length() - 1);
                String toastMessage = "Selected checkboxes: " +
                selectedCheckboxes.toString();
                Toast.makeText(MainActivity.this, toastMessage,
                Toast.LENGTH_SHORT).show();
            }

        }

    };
}

```

6. Write a program to create login form for student registration form.

MainActivity.xml code:

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<RelativeLayout
    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="@drawable/background"
    tools:context=".MainActivity">

    <TextView android:layout_width="match_parent"
        android:layout_height="wrap_content" android:id="@+id/signin"
        android:text="Sign in" android:textColor="@color/white"
        android:textSize="35dp" android:textStyle="bold"
        android:layout_margin="50dp" android:gravity="center"/>

    <EditText android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/username" android:layout_below="@id/signin"
        android:background="#30ffffff" android:hint="Username"
        android:textColorHint="@color/white"
        android:textColor="@color/white"
        android:layout_margin="10dp" android:padding="20dp"
        android:drawableLeft="@drawable/ic_baseline_person_outline_24"
        android:drawablePadding="20dp"/>

    <EditText android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/password"
        android:layout_below="@id/username"
        android:background="#30ffffff" android:hint="Password"
        android:textColorHint="@color/white"
        android:textColor="@color/white" android:layout_margin="10dp"
        android:padding="20dp"
        android:drawableLeft="@drawable/ic_baseline_info_24"
        android:drawablePadding="20dp"
        android:inputType="textPassword"/>

    <com.google.android.material.button.MaterialButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:id="@+id/loginbtn"
        android:layout_below="@id/password" android:text="LOGIN"
        android:backgroundTint="@color/design_default_color_secondary"
        android:layout_centerHorizontal="true"
        android:layout_margin="20dp"/>

    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/forgotpass"
        android:layout_below="@id/loginbtn" android:text="Forgot
```

```
password?" android:textColor="@color/white"
android:layout_centerHorizontal="true"
android:layout_margin="20dp"/>
```

```
<TextView android:layout_width="wrap_content"
android:layout_height="wrap_content" android:id="@+id/forget_password"
android:layout_above="@id/socialicons" android:text="Forgot password?"
with" android:layout_centerHorizontal="true"/>
```

```
<LinearLayout android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/socialicons"
android:layout_alignParentBottom="true" android:gravity="center" />
```

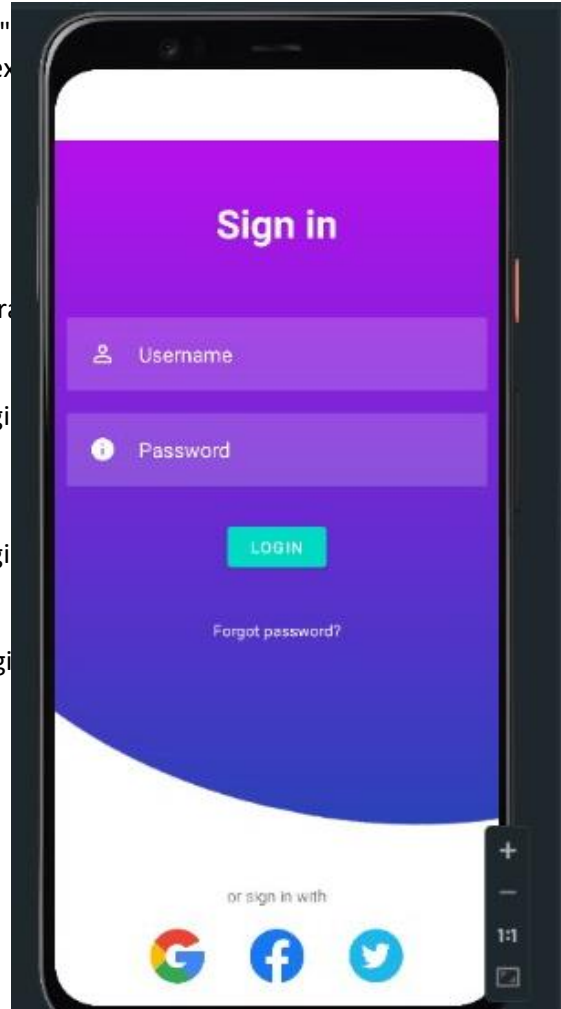
```
<ImageView android:layout_width="48dp"
android:layout_height="48dp" android:layout_margin="10dp"
android:src="@drawable/google"/>
```

```
<ImageView android:layout_width="48dp"
android:layout_height="48dp" android:layout_margin="10dp"
android:src="@drawable/fb"/>
```

```
<ImageView android:layout_width="48dp"
android:layout_height="48dp" android:layout_margin="10dp"
android:src="@drawable/twitter"/>
```

```
</LinearLayout>
```

```
</RelativeLayout>
```



Question : Write a program to display image using Image View and the button named as “changed Image”. Once you click on button another image should get displayed.

MainActivity.xml code:

```
<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:padding="16dp" tools:context=".MainActivity">

    <ImageView android:id="@+id/my_image_view"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerVertical="true"
        android:layout_marginBottom="16dp"
        android:scaleType="fitCenter"
        android:src="@drawable/image1" />

    <Button android:id="@+id/change_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/my_image_view"
        android:layout_marginTop="-150dp"
        android:text="Change Image" />
</RelativeLayout>
```

MainActivity.java code:

```
package com.example.prac14b;import android.os.Bundle; import
android.view.View; import android.widget.Button;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity; public class
MainActivity extends AppCompatActivity {private ImageView
myImageView;
private Button changeButton;

    private boolean isImage1Displayed = true;@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
myImageView = findViewById(R.id.my_image_view); changeButton =
    findViewById(R.id.change_button);
changeButton.setOnClickListener(new View.OnClickListener() {
    @Override
public void onClick(View view) {if (isImage1Displayed) {
    myImageView.setImageResource(R.drawable.image2);
    isImage1Displayed = false;
    } else {

myImageView.setImageResource(R.drawable.image1);
    isImage1Displayed = true;
    }
    }
});}}
```



Write a program to create Hello World Activity using all lifecycles methods to display messages using Log.d.

Practical 17 MainActivity.xml code:

```
<?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.java code:

```
package com.example.practical17;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;import android.util.Log;

public class MainActivity extends AppCompatActivity {
    private static final String TAG = "MainActivity";
    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d(TAG, "onCreate: Hello World!");
    }
    @Override

    protected void onStart() {super.onStart();
        Log.d(TAG, "onStart: Activity started.");
    }
    @Override

    protected void onResume() {super.onResume();
        Log.d(TAG, "onResume: Activity resumed.");
    }
    @Override

    protected void onPause() {super.onPause();
```

```
Log.d(TAG, "onPause: Activity paused.");  
}  
@Override  
protected void onStop() {super.onStop();  
    Log.d(TAG, "onStop: Activity stopped.");  
}  
@Override  
protected void onDestroy() {super.onDestroy();  
    Log.d(TAG, "onDestroy: Activity destroyed.");  
}  
@Override  
protected void onRestart() {super.onRestart();  
    Log.d(TAG, "onRestart: Activity restarted.");  
}  
}
```

