

## Practical No: 1

**Installation and setup of the Java development kit (JDK), setup of Android SDK, setup of Eclipse IDE, setup of Android development tools (ADT) plugins, create an Android virtual device.**

### 1. Install Java Development Kit (JDK):

- Download the latest version of JDK from the official Oracle website:  
<https://www.oracle.com/java/technologies/javase-downloads.html>
- Run the installer and follow the instructions to complete the installation.
- After the installation, set the PATH environment variable for Java on your computer

### 2. Install Android SDK:

- Download the latest version of Android SDK Command-line Tools from the official Android website: <https://developer.android.com/studio#downloads>
- Extract the downloaded file to a directory on your computer.
- Set the ANDROID\_HOME environment variable to the directory where you extracted the Android SDK. To do this, follow the instructions for your operating system:
- Windows: <https://developer.android.com/studio/intro/update#set-upyourandroid-home-environment-variable>
- Mac: <https://developer.android.com/studio/intro/update#macos-usr-local>

### 3. Install Eclipse IDE:

- Download the latest version of Eclipse IDE for Java Developers from the official Eclipse website: <https://www.eclipse.org/downloads/packages/>
- Extract the downloaded file to a directory on your computer.

### 4. Install Android Development Tools (ADT) plugins:

- Open Eclipse IDE.
- Click on Help > Eclipse Marketplace.
- Search for "Android Development Tools" and click "Go".
- Select "Android Development Tools for Eclipse" and click "Install".
- Follow the instructions to complete the installation. • Restart Eclipse IDE.

## **5. Create an Android virtual device:**

- Open Eclipse IDE.
- Click on Window > Android SDK and AVD Manager.
- Click on the "Virtual Devices" tab.
- Click the "New" button to create a new virtual device.
- Follow the instructions to configure the virtual device.
- Click the "Create AVD" button to create the virtual device.

That's it! We have now installed and set up Java Development Kit (JDK), Android SDK, Eclipse IDE, Android Development Tools (ADT) plugins, and created an Android virtual device. We can now start developing Android applications in Eclipse IDE.

## Practical No: 2

Create "Hello World" application. That will display "Hello World" in the middle of the screen using TextView Widget in the red colour

### 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="172dp"
        android:layout_height="52dp"
        android:background="#C62828"
        android:text="Hello World!"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.481" />

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

### Java Code:

```
package com.example.myapplication_helloworld;

import androidx.appcompat.app.AppCompatActivity;

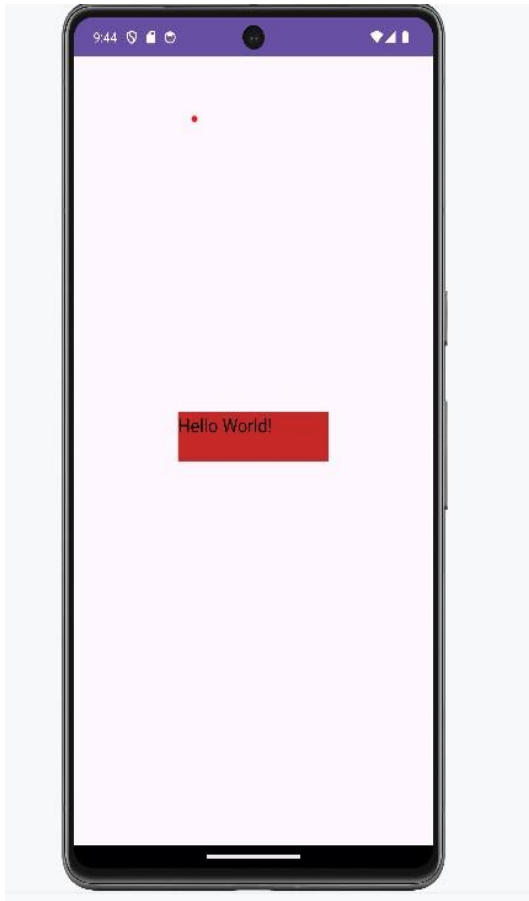
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
}
```

**Output:**



### Practical No: 3

Create Registration page to demonstration of Basic widgets available in android.

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"
    android:textAlignment="center"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Registration Page"
        android:textColor="@color/black"
        android:textSize="24sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="60dp"
        android:layout_height="48dp"
        android:layout_marginStart="40dp"
        android:layout_marginTop="68dp"
        android:text="Name:"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="233dp"
        android:layout_height="49dp"
        android:layout_marginTop="56dp"
```

```

        android:ems="10"
        android:hint="Enter Your Name"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.425"
        app:layout_constraintStart_toEndOf="@+id/textView2"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="44dp"
    android:layout_marginTop="48dp"
    android:text="Email:"
    android:textColor="@color/black"
    android:textSize="20sp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
/>

<EditText
    android:id="@+id/editTextTextEmailAddress"
    android:layout_width="240dp"
    android:layout_height="49dp"
    android:layout_marginTop="44dp"
    android:ems="10"
    android:hint="Enter Email"
    android:inputType="textEmailAddress"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.472"
    app:layout_constraintStart_toEndOf="@+id/textView3"
    app:layout_constraintTop_toBottomOf="@+id/editTextText" />

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="56dp"
    android:text="Password:"
    android:textColor="@color/black"
    android:textSize="20sp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView3"
/>

<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"

```

```
        android:layout_height="wrap_content"
        android:layout_marginStart="8dp"
        android:layout_marginTop="68dp"
        android:text="Re Password:"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView4"
    />
```

```
    <EditText
        android:id="@+id/editTextTextPassword"
        android:layout_width="254dp"
        android:layout_height="56dp"
        android:layout_marginTop="48dp"
        android:ems="10"
        android:hint="Enter Password"
        android:inputType="textPassword"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.488"
        app:layout_constraintStart_toEndOf="@+id/textView4"

        app:layout_constraintTop_toBottomOf="@+id/editTextTextEmailAddress"
    />
```

```
    <EditText
        android:id="@+id/editTextTextPassword2"
        android:layout_width="252dp"
        android:layout_height="48dp"
        android:layout_marginTop="52dp"
        android:ems="10"
        android:hint="Re enter password"
        android:inputType="textPassword"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.241"
        app:layout_constraintStart_toEndOf="@+id/textView5"

        app:layout_constraintTop_toBottomOf="@+id/editTextTextPassword"
    />
```

```
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="64dp"
        android:backgroundTint="#3FE448"
        android:text="Submit"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.461"
        app:layout_constraintStart_toStartOf="parent"
    />
```

```
app:layout_constraintTop_toBottomOf="@+id/editTextTextPassword
2" />
```

```
<TextView
    android:id="@+id/textView6"
    android:layout_width="181dp"
    android:layout_height="35dp"
    android:layout_marginTop="24dp"
    android:text="Already Registered?"
    android:textAlignment="center"
    android:textColor="#3FE448"
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.434"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

### Java Code:

```
package com.example.myapplication_helloworld;

import androidx.appcompat.app.AppCompatActivity;

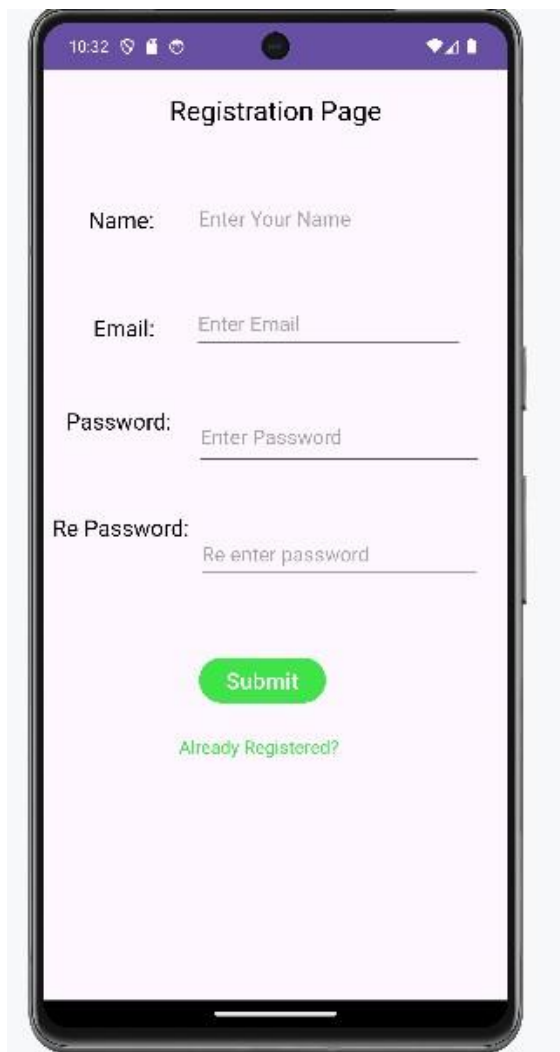
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

### Output:





## Practical No: 4

Create sample application with login module. (Check username and password) On successful login, Change Text View "Login Successful". And on failing login, alert user using Toast "Login fail".

XmlCode:

```
<?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/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="28dp"
        android:fontFamily="sans-serif-black"
        android:text="Login Page"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textSize="34sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="36dp"
        android:text="User Name:"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <EditText
        android:id="@+id/tvUserName"
        android:layout_width="211dp"
        android:layout_height="54dp"
        android:layout_marginTop="20dp"
```

```

        android:ems="10"
        android:hint="Enter your name"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.421"
        app:layout_constraintStart_toEndOf="@+id/textView2"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

<TextView
    android:id="@+id/tvpass"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="24dp"
    android:layout_marginTop="64dp"
    android:text="Password:"
    android:textColor="@color/black"
    android:textSize="20sp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
/>

<EditText
    android:id="@+id/etPassword"
    android:layout_width="wrap_content"
    android:layout_height="48dp"
    android:layout_marginTop="32dp"
    android:ems="10"
    android:hint="Enter Password"
    android:inputType="textPassword"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.463"
    app:layout_constraintStart_toEndOf="@+id/tvpass"
    app:layout_constraintTop_toBottomOf="@+id/tvUserName"
/>

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="108dp"
    android:text="Login"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/etPassword"
/>

<TextView
    android:id="@+id/tvLoginStatus"
    android:layout_width="3dp"
    android:layout_height="14dp"

```

```

        android:layout_marginTop="192dp"
        android:textColor="@color/black"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button" />

```

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

## JavaCode:

```

package com.example.myapplication_loginsing_toast;

import androidx.appcompat.app.AppCompatActivity;

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

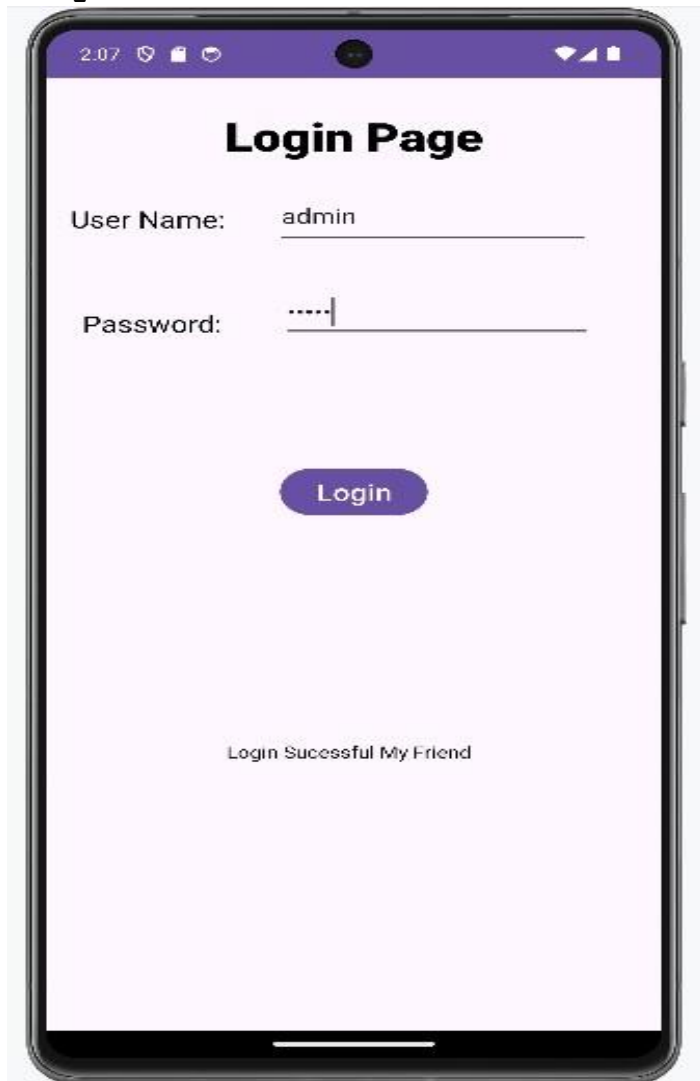
public class MainActivity extends AppCompatActivity {
    EditText etUserName, etPassword;
    Button btnStatus;
    TextView tvLoginStatus;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etUserName=(EditText) findViewById(R.id.tvUserName);
        etPassword=(EditText) findViewById(R.id.etPassword);
        btnStatus=(Button) findViewById(R.id.button);
        tvLoginStatus =
        (TextView) findViewById(R.id.tvLoginStatus);
        btnStatus.setOnClickListener(new
        View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if
                (etUserName.getText().toString().equals("admin") &&
                etPassword.getText().toString().equals("admin"))
                {
                    tvLoginStatus.setText("Login Sucessful My
                    Friend");
                }
                else {
                    Toast.makeText(getApplicationContext(),"Login

```

```
Fail", Toast.LENGTH_LONG).show();  
    }  
    }  
});  
}
```

**Output:**



## Practical No: 5

Create an application for demonstration of Scroll view in android.

### 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"
    tools:context=".MainActivity">

    <ScrollView
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:layout_margin="20dp"
        android:scrollbars="vertical">

        <LinearLayout
            android:layout_width="fill_parent"
            android:layout_height="fill_parent"
            android:layout_margin="20dp"
            android:orientation="vertical">

            <TextView
                android:layout_width="fill_parent"
                android:layout_height="wrap_content"
                android:layout_margin="20dp"
                android:layout_marginTop="20dp"
                android:text="Hello there , we are on top of
the page."
                android:textSize="30sp" />

            <TextView
                android:layout_width="fill_parent"
                android:layout_height="wrap_content"
                android:layout_marginTop="900dp"
                android:layout_marginBottom="30dp"
                android:text="Hello, we are at bottom of the
page "
                android:textSize="30sp" />

        </LinearLayout>
    </ScrollView>
```

```
</RelativeLayout>
```

**Output:**



## Practical No: 6

**Create login application where you will have to validate username and passwords till the username and password is not validated, login button should remain disabled.**

### Xml Code:

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

    <TextView
        android:id="@+id/tvName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="21dp"
        android:layout_marginTop="49dp"
        android:text="User Name"
        android:textSize="18sp" />

    <EditText
        android:id="@+id/etUsername"
        android:layout_width="wrap_content"
        android:layout_height="48dp"
        android:layout_alignBaseline="@+id/tvName"
        android:layout_alignBottom="@+id/tvName"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="23dp"
        android:ems="10"
        android:hint="Enter Name"
        android:inputType="textPersonName" />

    <TextView
        android:id="@+id/tvPass"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignEnd="@+id/tvName"
        android:layout_below="@+id/etUsername"
        android:layout_marginTop="32dp"
        android:text="Password"
        android:textSize="18sp" />

    <EditText
        android:id="@+id/etPassword"
        android:layout_width="wrap_content"
        android:layout_height="48dp"
        android:layout_alignBaseline="@+id/tvPass"
        android:layout_alignStart="@+id/etUsername"
        android:layout_alignBottom="@+id/tvPass"
```



```

        android:ems="10"
        android:hint="Enter Password"
        android:inputType="textPassword" />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/etPassword"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="38dp"
    android:text="LOGIN"/>
<TextView
    android:id="@+id/tvLoginStatus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/button"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="100sp"
/>
</RelativeLayout>

```

## Java Code:

```

package com.example.myapplication_practical6;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    EditText etUsername, etPassword;
    Button btnStatus;
    TextView tvLoginStatus;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etUsername = (EditText) findViewById(R.id.etUsername);
        etPassword = (EditText) findViewById(R.id.etPassword);
        btnStatus = (Button) findViewById(R.id.button);
        tvLoginStatus = (TextView)
        findViewById(R.id.tvLoginStatus);
        etPassword.addTextChangedListener(TextChange);
    }
}

```

```

        etUsername.addTextChangedListener(TextChange);
        check();
    }
    private TextWatcher TextChange=new TextWatcher()
    {
        @Override public void beforeTextChanged(CharSequence
charSequence, int i, int i1, int i2)
        {
        }
        @Override public void onTextChanged(CharSequence
charSequence, int i, int i1, int i2)
        {
        }
        @Override public void
afterTextChanged(Editable editable)
        {
            check();
        }
    };
    public void check()
    {
        if(etUsername.getText().toString().equals("yusuf") &&
etPassword.getText().toString().equals("12345"))
        {
            btnStatus.setEnabled(true);
        }
        else
        {
            btnStatus.setEnabled(false);
        }
    }
}

```

Output :



A mobile application interface for login. The screen has a purple header bar at the top. Below the header, there are two input fields. The first field is labeled "User Name" and contains the text "yusuf". The second field is labeled "Password" and contains four dots, indicating a masked password. Below these fields is a rounded rectangular button labeled "LOGIN". The background of the screen is a light pink color.

## Practical No: 7

**Create an Android Application that will change color of the College Name on click of Push Button and change the font size, font style of text view using xml.**

### Xml Code :

```
<?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">
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="GH Rasoni Jalgaon"
        android:layout_centerInParent="true"
        android:textStyle="bold"
        android:textSize="36sp"/>
    <Button android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:layout_marginStart="30dp"
        android:layout_marginTop="5dp"
        android:layout_below="@id/textView1"
        android:layout_marginEnd="30dp"
        android:text="Push" />
</RelativeLayout>
```

### JavaCode :

```
package com.example.myapplication_practical7;
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.graphics.Typeface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    Button pushButton;
    @Override
```

```

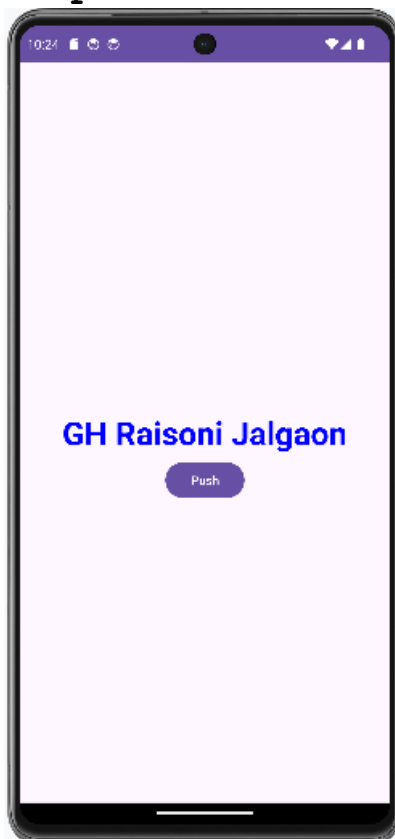
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    pushButton=(Button) findViewById(R.id.button);
    TextView textView1 = findViewById(R.id.textView1);
    textView1.setTextColor(Color.BLUE);
    pushButton.setOnClickListener(new
View.OnClickListener()
    {
        @Override public void
onClick(View view)
        {

textView1.setTypeface(textView1.getTypeface(),Typeface.BOLD_ITALIC);

textView1.setTextColor(Color.parseColor("#006400"));
        textView1.setTextSize(50);
        }
    });
}

```

Output:



## Practical No: 8

Create a simple Application that demonstrates the Life Cycle of Activity.

### XmlCode:

```
<?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" />

    <Button
        android:id="@+id/toast"
        android:layout_width="143dp"
        android:layout_height="63dp"
        android:layout_marginBottom="44dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.515"
        app:layout_constraintStart_toStartOf="parent" />

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

### JavaCode:

```
package com.example.lifecycle_of_activity;
import android.annotation.SuppressLint;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```

        setContentView(R.layout.activity_main);
        notify("On Create");
    }

    @Override
    protected void onPause() {
        super.onPause();
        notify("onPause");
    }

    @Override
    protected void onResume() {
        super.onResume();
        notify("onResume");
    }

    @Override
    protected void onStop() {
        super.onStop();
        notify("onStop");
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        notify("onDestroy");
    }

    @Override
    protected void onRestoreInstanceState(Bundle
savedInstanceState) {
        super.onRestoreInstanceState(savedInstanceState);
        notify("onRestoreInstanceState");
    }

    @Override
    protected void onSaveInstanceState(Bundle outState) {
        super.onSaveInstanceState(outState);
        notify("onSaveInstanceState");
    }

    private void notify(String methodName) {
        String name = this.getClass().getName();
        String[] strings = name.split("\\.");
        Toast.makeText(getApplicationContext(),
            methodName + " " + strings[strings.length - 1],
            Toast.LENGTH_LONG).show();
    }
}

```

Output:





## Practical No: 9

**Create a simple application, which reads a positive number from the user and displays its factorial value in another activity.**

### Main\_activity.xml\_code:

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

    <EditText
        android:id="@+id/numberInput"
        android:layout_width="381dp"
        android:layout_height="62dp"
        android:hint="Enter a number"
        android:inputType="number" />

    <Button
        android:id="@+id/calculateButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/numberInput"
        android:layout_marginTop="122dp"
        android:onClick="calculateFactorial"
        android:text="Calculate" />

</RelativeLayout>
```

### Activity\_result.xml\_code:

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

    <TextView
        android:id="@+id/factorialResult"
        android:layout_width="225dp"
        android:layout_height="61dp"
        android:textSize="24sp">
```

```
        android:textStyle="bold" />
</LinearLayout>
```

### MainActivity.java\_Code:

```
package com.example.myapplication_practical9;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.view.View;
import android.os.Bundle;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

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

    public void calculateFactorial(View view) {
        EditText editText = findViewById(R.id.numberInput);
        String input = editText.getText().toString();
        int number = Integer.parseInt(input);
        Intent intent = new Intent(this,
activity_result.class);
        intent.putExtra("number", number);
        startActivity(intent);
    }

}
```

### activity\_result.Java\_code:

```
package com.example.myapplication_practical9;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.TextView;

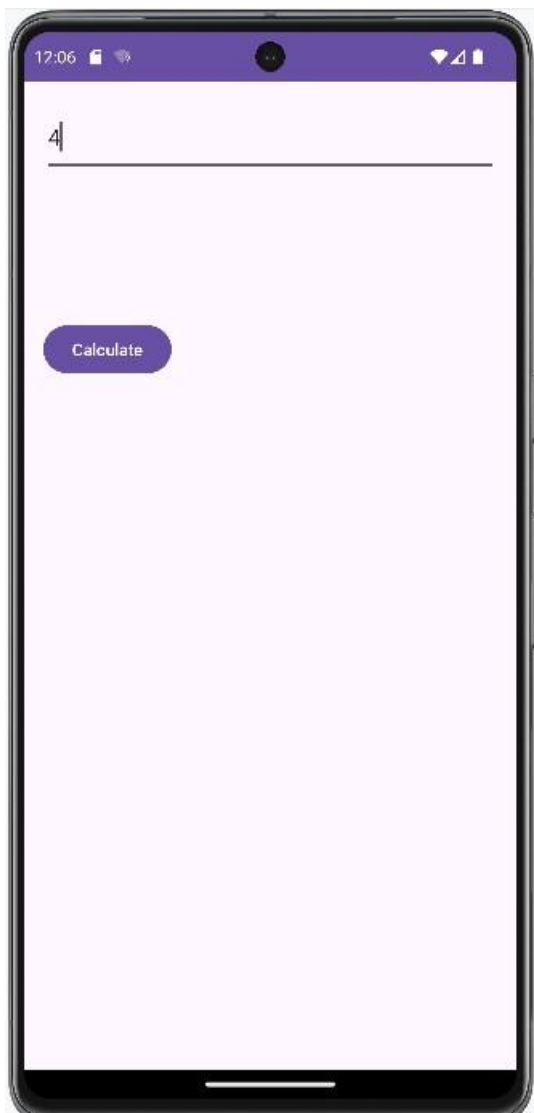
public class activity_result extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_result);
        int number = getIntent().getIntExtra("number", 0);
        long factorial = calculateFactorial(number);
    }

}
```

```
        TextView textView =  
findViewById(R.id.factorialResult);  
        textView.setText("Factorial of " + number + " is " +  
factorial);  
  
    }  
    private long calculateFactorial(int n) {  
        if (n == 0 || n == 1)  
            return 1;  
        else  
            return n * calculateFactorial(n - 1);  
    }  
}
```

**Output:**



## Practical No: 10

**Create an Android app, that reads the student's Details (Name, Surname, Class, Gender, Hobbies, Marks) and displays all information in another activity in table format on click of the submit button.**

### Activity\_main.xml\_code:

```
<?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:orientation="vertical"
    android:padding="16dp">

    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Name" />

    <EditText
        android:id="@+id/editTextSurname"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Surname" />

    <EditText
        android:id="@+id/editTextClass"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Class" />

    <RadioGroup
        android:id="@+id/radioGroupGender"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <RadioButton
            android:id="@+id/radioButtonMale"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Male"/>
```

```

        <RadioButton
            android:id="@+id/radioButtonFemale"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Female"/>
    </RadioGroup>

    <EditText
        android:id="@+id/editTextHobbies"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Hobbies" />

    <EditText
        android:id="@+id/editTextMarks"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Marks" />

    <Button
        android:id="@+id/buttonSubmit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Submit"/>
</LinearLayout>

```

### **Activity\_display.xml\_code:**

```

<?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:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:id="@+id/textViewDetails"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="18sp"
        android:textStyle="bold"
        android:layout_marginBottom="16dp"/>

    <TableLayout
        android:id="@+id/tableLayoutDetails"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        </TableLayout>
    </LinearLayout>

```

## Main\_Activity.java\_code:

```
package com.example.myapplication_practical10;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;

public class MainActivity extends AppCompatActivity {
    EditText editTextName, editTextSurname, editTextClass,
    editTextHobbies, editTextMarks;
    RadioGroup radioGroupGender;
    RadioButton radioButtonMale, radioButtonFemale;
    Button buttonSubmit;

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

        editTextName = findViewById(R.id.editTextName);
        editTextSurname = findViewById(R.id.editTextSurname);
        editTextClass = findViewById(R.id.editTextClass);
        editTextHobbies = findViewById(R.id.editTextHobbies);
        editTextMarks = findViewById(R.id.editTextMarks);
        radioGroupGender =
        findViewById(R.id.radioGroupGender);
        radioButtonMale = findViewById(R.id.radioButtonMale);
        radioButtonFemale =
        findViewById(R.id.radioButtonFemale);
        buttonSubmit = findViewById(R.id.buttonSubmit);

        buttonSubmit.setOnClickListener(new
        View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name =
                editTextName.getText().toString();
                String surname =
                editTextSurname.getText().toString();
                String studentClass =
                editTextClass.getText().toString();
                String hobbies =
```

```

editTextHobbies.getText().toString();
        String marks =
editTextMarks.getText().toString();
        String gender = radioButtonMale.isChecked() ?
"Male" : "Female";

        Intent intent = new Intent(MainActivity.this,
Activity_display.class);
        intent.putExtra("name", name);
        intent.putExtra("surname", surname);
        intent.putExtra("class", studentClass);
        intent.putExtra("hobbies", hobbies);
        intent.putExtra("marks", marks);
        intent.putExtra("gender", gender);
        startActivity(intent);
    }
    });
}
}

```

### **Activity\_display.java\_code:**

```

package com.example.myapplication_practical10;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.TableLayout;
import android.widget.TableRow;
import android.widget.TextView;

public class Activity_display extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_display);
        Bundle extras = getIntent().getExtras();
        if (extras != null) {
            String name = extras.getString("name");
            String surname = extras.getString("surname");
            String studentClass = extras.getString("class");
            String hobbies = extras.getString("hobbies");
            String marks = extras.getString("marks");
            String gender = extras.getString("gender");

            TextView textViewDetails =
findViewById(R.id.textViewDetails);
            textViewDetails.setText("Student Details:");

```

```

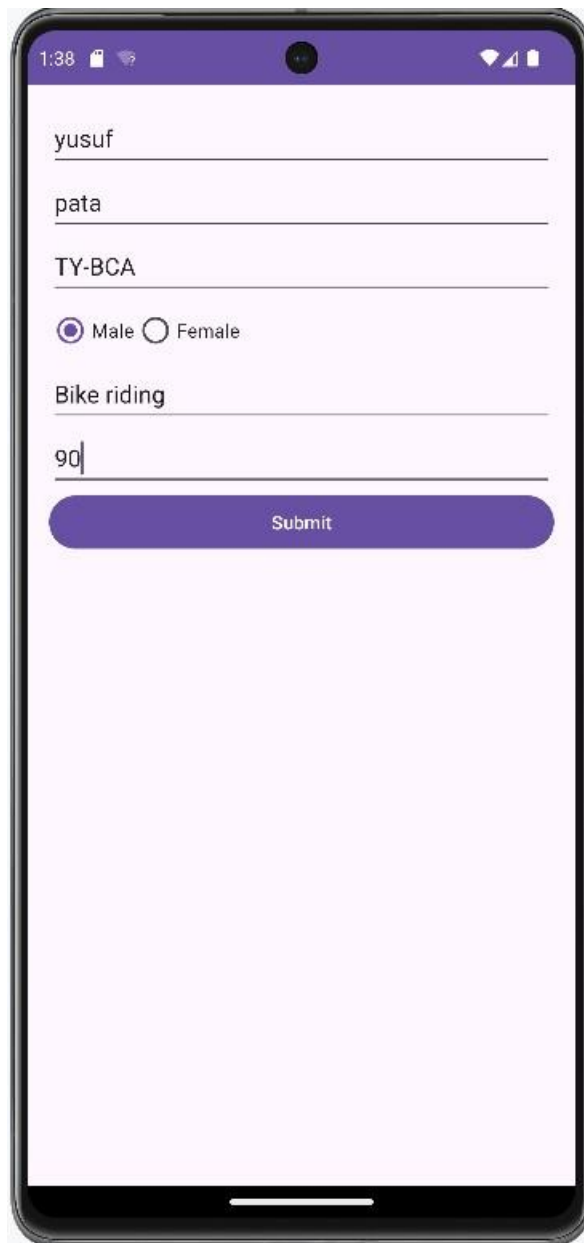
        TableLayout tableLayoutDetails =
findViewById(R.id.tableLayoutDetails);

        addRowToTable(tableLayoutDetails, "Name", name);
        addRowToTable(tableLayoutDetails, "Surname",
surname);
        addRowToTable(tableLayoutDetails, "Class",
studentClass);
        addRowToTable(tableLayoutDetails, "Gender",
gender);
        addRowToTable(tableLayoutDetails, "Hobbies",
hobbies);
        addRowToTable(tableLayoutDetails, "Marks", marks);
    }
}
private void addRowToTable(TableLayout tableLayout, String
label, String value) {
    TableRow tableRow = new TableRow(this);
    TextView textViewLabel = new TextView(this);
    textViewLabel.setText(label);
    TextView textViewValue = new TextView(this);
    textViewValue.setText(value);
    tableRow.addView(textViewLabel);
    tableRow.addView(textViewValue);
    tableLayout.addView(tableRow);
}
}

```



## Output:



1:38

yusuf

pata

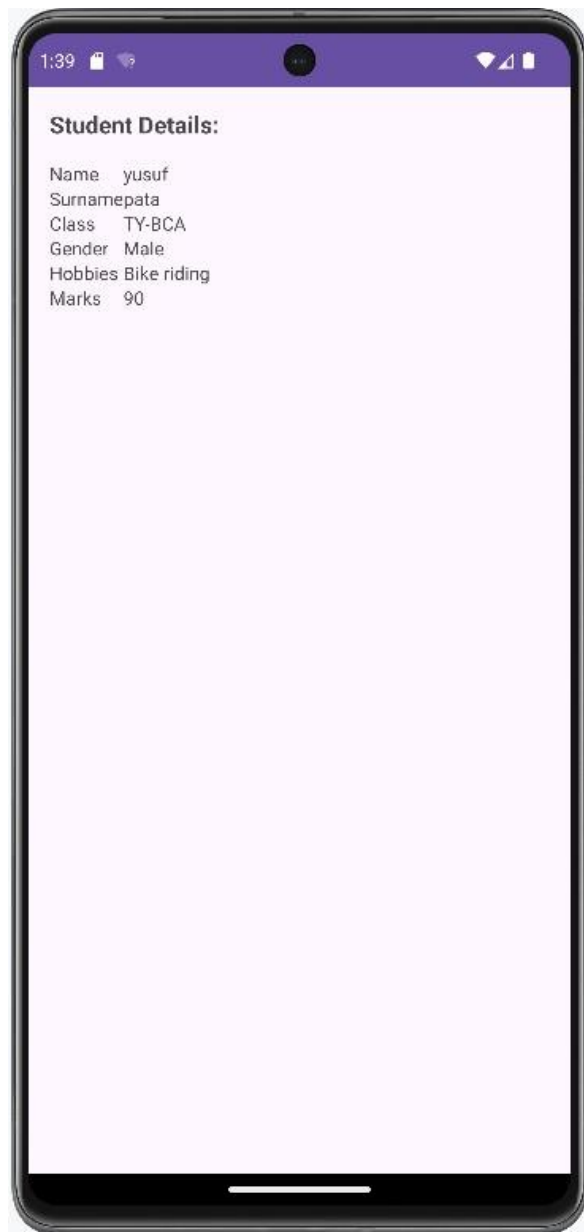
TY-BCA

☒ Male ☐ Female

Bike riding

90

Submit



1:39

**Student Details:**

Name yusuf  
Surname pata  
Class TY-BCA  
Gender Male  
Hobbies Bike riding  
Marks 90

## Practical No: 11

### Create an Android Application that Demonstrate Radio Button.

#### Xml Code:

```
<?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=".MainActivity">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:gravity="center_horizontal"
        android:textSize="22dp"
        android:text="Single Radio Buttons" />

    <RadioButton
        android:id="@+id/radioButton1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="Radio Button 1"
        android:layout_marginTop="20dp"
        android:textSize="20dp"
    />

    <RadioButton
        android:id="@+id/radioButton2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Radio Button 2"
        android:layout_marginTop="10dp"
        android:textSize="20dp" />

    <View
        android:layout_width="fill_parent"
        android:layout_height="1dp"
        android:layout_marginTop="20dp"
        android:background="#B8B894" />

    <TextView android:id="@+id/textView2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:gravity="center_horizontal"
        android:textSize="22dp" android:text="Radio
button inside RadioGroup" />
```

```

<RadioGroup
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/radioGroup">
    <RadioButton
        android:id="@+id/radioMale"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text=" Male"
        android:layout_marginTop="10dp"
        android:checked="false"
        android:textSize="20dp" />
    <RadioButton
        android:id="@+id/radioFemale"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text=" Female"
        android:layout_marginTop="20dp"
        android:checked="false"
        android:textSize="20dp" />
</RadioGroup> <Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Show Selected"
    android:id="@+id/button"
    android:onClick="onclickbuttonMethod"
    android:layout_gravity="center_horizontal" />
</LinearLayout>

```

## Java Code:

```

package com.example.myapplication_practical11;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.graphics.Color;
import android.graphics.Typeface;
import android.view.View;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button button;
    RadioButton genderradioButton;
    RadioGroup radioGroup;
}

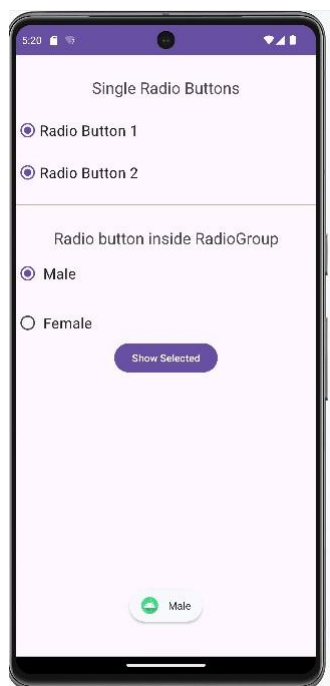
```

```

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    radioButton=(RadioGroup) findViewById(R.id.radioButton);
}
public void onclickbuttonMethod(View v) {
    int selectedId =
        radioButton.getCheckedRadioButtonId();
    genderradioButton =
        (RadioButton) findViewById(selectedId);
    if (selectedId == -1)
    {
        Toast.makeText(MainActivity.this, "Nothing
selected",
                        Toast.LENGTH_SHORT).show();
    }
    else
    {
        Toast.makeText(MainActivity.this,
genderradioButton.getText(),
                        Toast.LENGTH_SHORT).show();
    }
}
}

```

**output:**



## Practical No: 12

**Design Following Screens Using Radio Buttons & Checkboxes. Display the selected text using Toast.**

### XmlCode:

```
<?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">
    <TextView android:id="@+id/tvRg"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:gravity="center"
        android:text="Rate This Lesson"

        android:textAppearance="?android:attr/textAppearanceMedium" />
    <RadioGroup
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/tvRg"
        android:layout_centerHorizontal="true"
        android:orientation="horizontal"
        android:showDividers="beginning|middle|end"
        android:layout_marginTop="10dp"
        android:id="@+id/radioGroup" >
        <RadioButton
            android:id="@+id/rb1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="EXCELLENT" android:checked="false"
            />
        <RadioButton
            android:id="@+id/rb2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="GOOD"
            android:checked="true" />
        <RadioButton
            android:id="@+id/rb3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="OKAY"
            android:checked="false" />
```

```

        <RadioButton
            android:id="@+id/rb4"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="POOR"
            android:checked="false" />
    </RadioGroup> <TextView android:id="@+id/tvCb"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/radioGroup"
        android:gravity="center" android:text="Give Your
Suggestions
Here." android:layout_marginTop="65dp"

        android:textAppearance="?android:attr/textAppearanceMedium"/>
    <CheckBox
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text=" I really enjoy this lesson."
        android:id="@+id/cb1"
        android:layout_below="@+id/tvCb"
        android:layout_centerHorizontal="true"
        android:checked="false"/>
    <CheckBox android:layout_width="match_parent"
        android:layout_height="wrap_content" android:text="I
will prefer this lesson over any other."
        android:id="@+id/cb2"
        android:layout_below="@+id/cb1"
        android:layout_centerHorizontal="true"
        android:checked="false"/>
    <CheckBox
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="I would like to hear more from you."
        android:id="@+id/cb3"
        android:layout_below="@+id/cb2"
        android:layout_centerHorizontal="true"
        android:checked="false"/>

    <CheckBox
        android:layout_width="match_parent"
        android:layout_height="wrap_content" android:text="I
am satisfied
with the content and full description." android:id="@+id/cb4"
        android:layout_below="@+id/cb3"
        android:layout_centerHorizontal="true"
        android:checked="false"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```

        android:text="SUBMIT"
        android:id="@+id/btnSubmit"
        android:layout_below="@+id/cb4"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>
</RelativeLayout>

```

## JavaCode :

```

package com.example.myapplication_practical12;
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.graphics.Typeface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    RadioGroup radioGroup;
    RadioButton selectedRadioButton;
    Button buttonSubmit;
    CheckBox cb1, cb2, cb3, cb4;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        buttonSubmit =
            (Button) findViewById(R.id.btnSubmit);
        radioGroup =
            (RadioGroup) findViewById(R.id.radioGroup);
        cb1 =
            (CheckBox) findViewById(R.id.cb1); cb2 =
            (CheckBox)
                findViewById(R.id.cb2); cb3 = (CheckBox)
                findViewById(R.id.cb3); cb4 = (CheckBox)
                findViewById(R.id.cb4);
        buttonSubmit.setOnClickListener(new
            View.OnClickListener()
            { @Override public void
            onClick(View view)
            {
                selectedRadioButton =
                (RadioButton) findViewById(radioGroup.getCheckedRadioButtonId()
                );
            }
        });
    }
}

```

```

        String yourVote =
selectedRadioButton.getText().toString();
        Toast.makeText(MainActivity.this, "Selected Radio
Button is:" + yourVote , Toast.LENGTH_LONG).show();
        selectedRadioButton = (RadioButton)
findViewById(radioGroup.getCheckedRadioButtonId());
        String checkBoxChoices = "";
        if
        (cb1.isChecked())
        {
            checkBoxChoices += cb1.getText().toString() +
"\tYES";
        }
        else
        {
            checkBoxChoices += cb1.getText().toString() +
"\tNO";
        }

        if (cb2.isChecked())
        {
            checkBoxChoices += cb2.getText().toString() +
"\tYES";
        }
        else{
            checkBoxChoices += cb2.getText().toString() +
"\tNO";
        }

        if (cb3.isChecked())
        {
            checkBoxChoices += cb3.getText().toString() +
"\tYES";
        }
        else
        {
            checkBoxChoices += cb3.getText().toString() +
"\tNO";
        }

        if (cb4.isChecked())
        {
            checkBoxChoices += cb4.getText().toString() +
"\tYES";
        }
        else
        {
            checkBoxChoices += cb4.getText().toString() +
"\tNO";
        }

        Toast.makeText(MainActivity.this, "Selected Radio
Button is:" +
            yourVote + "\n CheckBox Choices:
\n " + checkBoxChoices ,

```



```

        Toast.LENGTH_LONG).show();
    }
}

```

**Output:**

