

CERTIFICATE

This is to certified that, Mr./Ms. _____

Examination Seat No. _____ a student of **BCA / MCA** Semester :
_____ has satisfactorily performed the practical assignments in the
course of _____ during
the academic year 2023-24.

Date : / /

Subject Teacher

Head of Dept.

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INDEX

Course Name: Lab on BCA-CC-15

Course Code: BCA-L11

Seat Number:

Sr. No.	Title	Date	Sign
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 Android virtual device.	8/1/2024	
2	Create a "Hello World" application. That will display "Hello World" in the middle of the screen using the Text View Widget in the red color.	16/1/2024	
3	Create a registration page to demonstrate of Basic widgets available in Android.	22/1/2024	
4	Create a sample application with a login module. (Check username and password) On successful login, Change TextView "Login Successful". And on failing login, an alert user using the Toast "Login fail".	30/1/2024	
5	Create an application for demonstration of Scroll view in Android.	6/2/2024	
6	Create a login application where you will have to validate usernames and passwords Till the username and password is not validated, the login button should remain disabled.	20/2/2024	
7	Create an Android Application that will change the color of the College Name on click of the Push Button and change the font size, and font style of the text view using XML.	4/3/2024	
8	Create a Simple Application That demonstrates the Life Cycle of Activity.	5/3/2024	
9	Create a Simple Application, that reads a positive number from the user and displays its factorial value in another activity.	11/3/2024	
10	Create an Android app that reads the Student's Details (Name, Surname, Class, Gender, Hobbies, Marks) and displays the all information in another activity in table format on click of the Submit button.	12/3/2024	
11	Create an Android Application that Demonstrates a Radio Button.	18/3/2024	
12	Design Following Screens Using Radio Buttons & Checkboxes. Display the selected text using Toast.	19/3/2024	

Lab In Charge

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

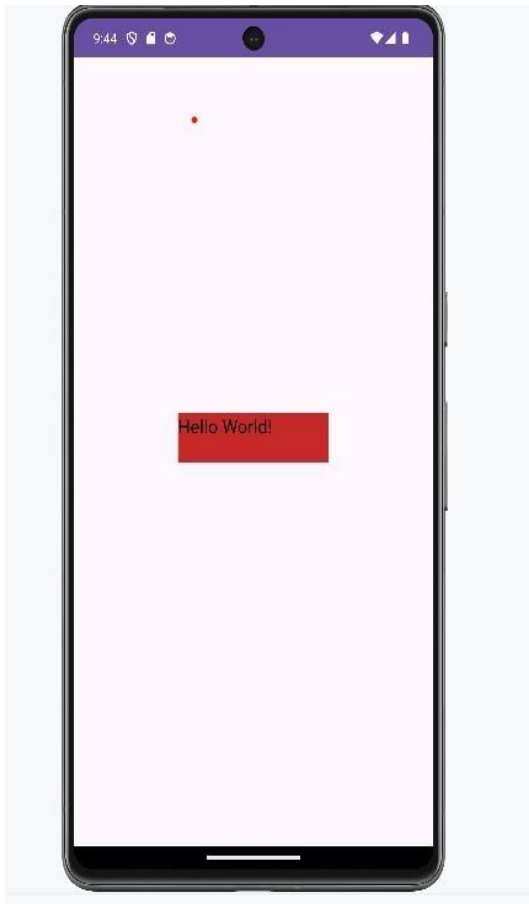
android.os.Bundle;

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_conten
        t"
        android:layout_marginStart="8dp"
        android:layout_marginTop="68dp"
        android:text="Re Password:"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintStart_toStart
        Of="parent"
        app:layout_constraintTop_toBottomO
        f="@+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/editTextTextEmailAd
d ress" />


```

<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/editTextTextPasswor
d " />

<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/editTextText
Password 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>

```

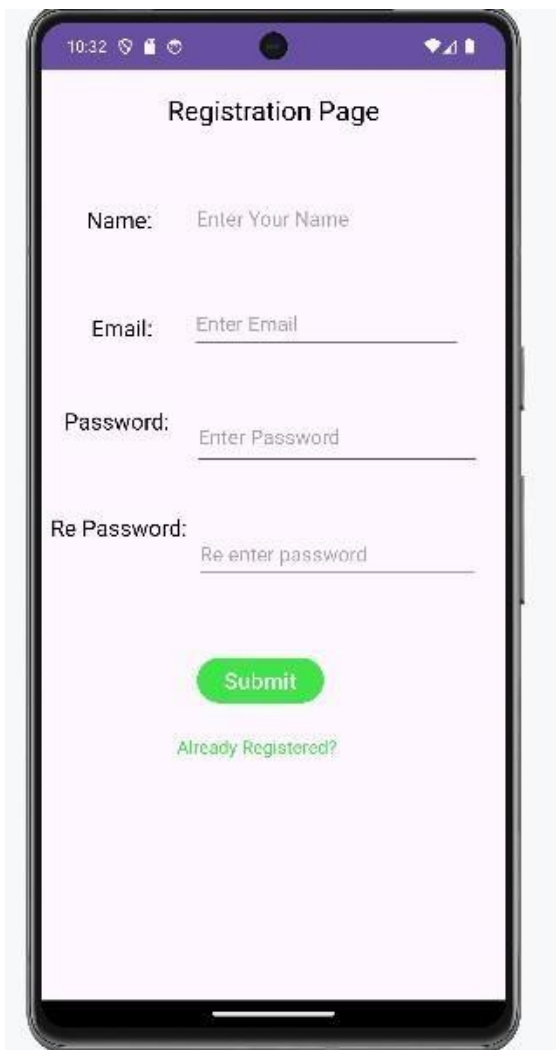
Java Code:

```
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="pa
    rent"
    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;

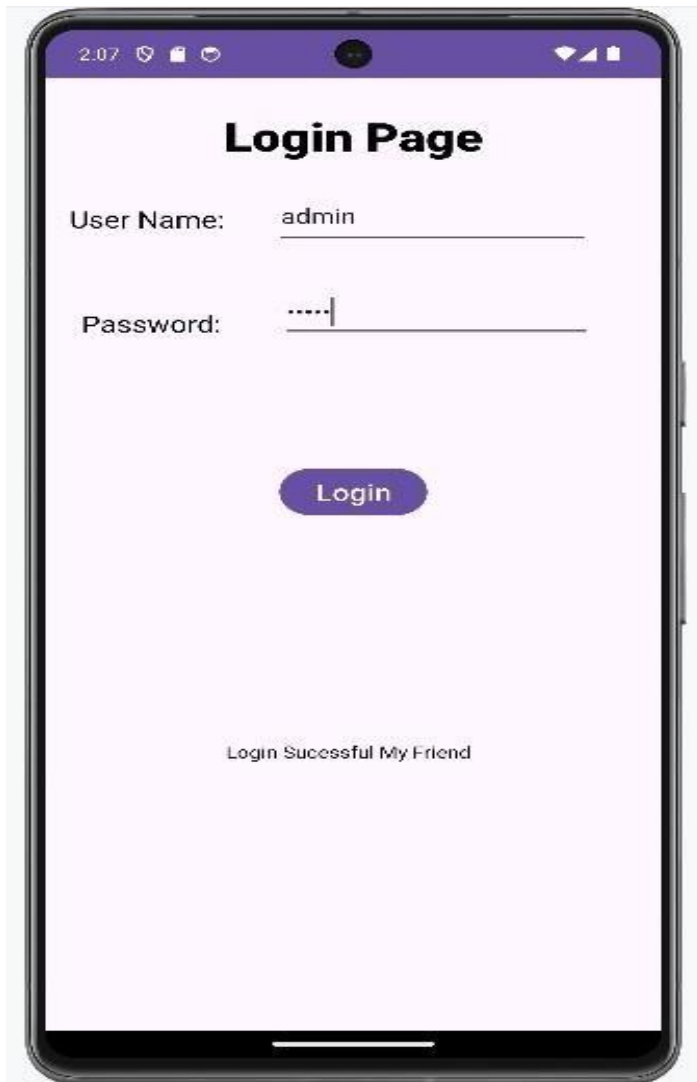
import androidx.appcompat.app.AppCompatActivity;

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.textEditable; 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:



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");
    }
}

```

```

    }

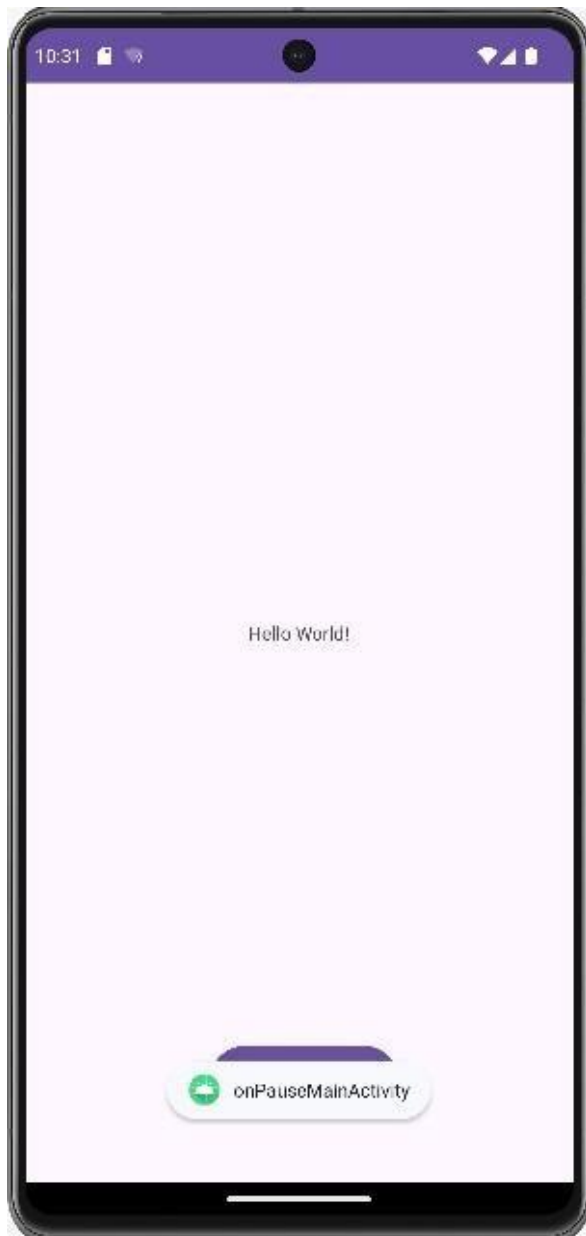
    @Override
    protected void onDestroy() {
        super.onDestroy(); notify("onDestroy");
    }

    @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;

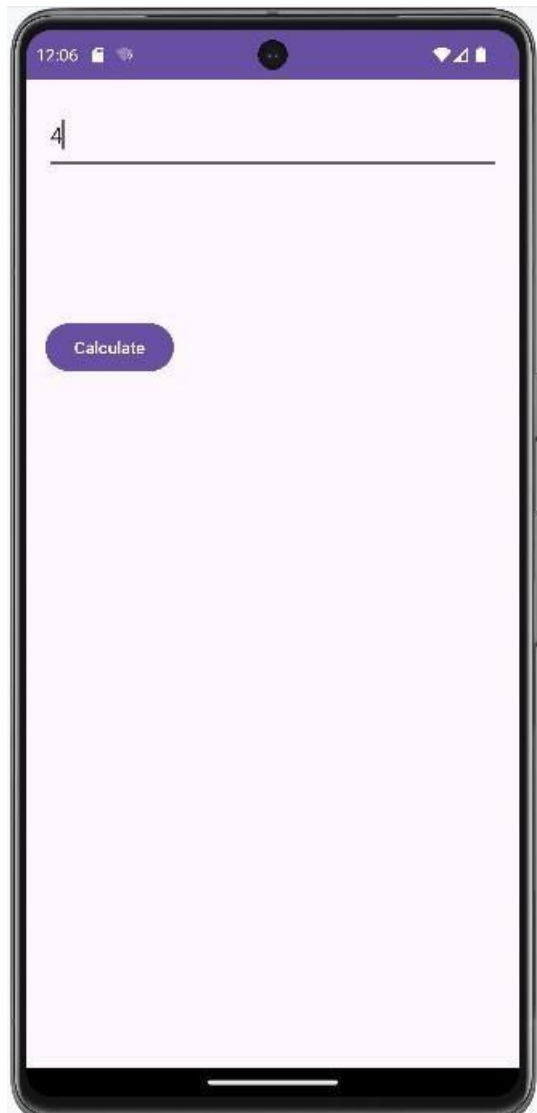
import          android.os.Bundle;          import
android.widget.TextView; public class activity_result
extends AppCompatActivity {

    @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 {

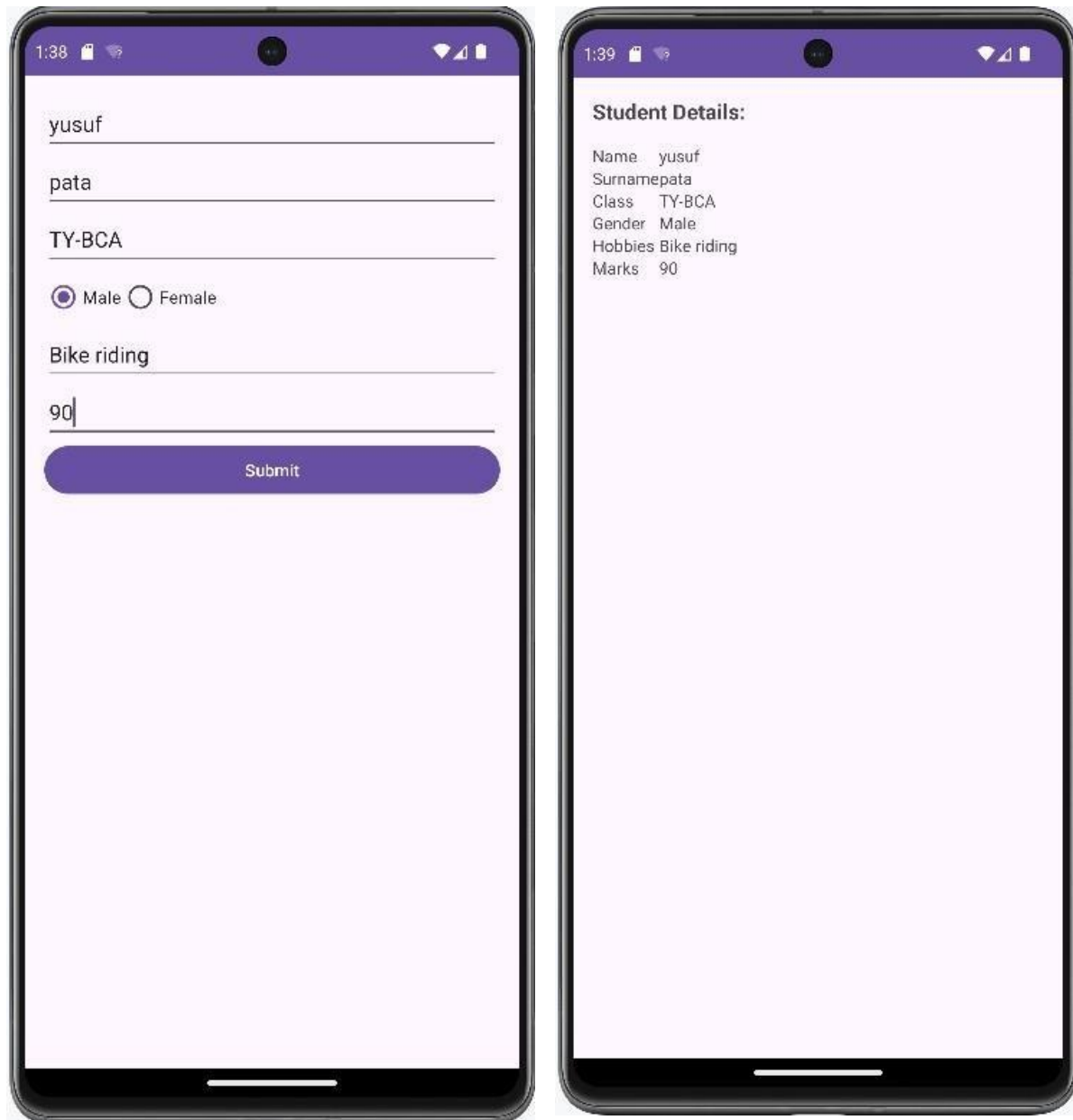
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_display);
        Bundle extras = getIntent().getExtras(); if
        (extras != null) {
            String name = extras.getString("name");
       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



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);
        radioGroup=(RadioGroup) findViewById(R.id.radioGroup);
    }
    public void onclickbuttonMethod(View v) { int
        selectedId =
        radioGroup.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:

5:33

Rate This Lesson

☒ EXCELLENT

☐ GOOD

☐ OKAY

☐ POOR

Give Your Suggestions Here.

☒ I really enjoy this lesson.

☒ I will prefer this lesson over any other.

☒ I would like to hear more from you.

☒ I am satisfied with the content and full description.

SUBMIT

Selected Radio Button is:EXCELLENT