LABCYCLE: 1

EXPERIMENT NO: 01 DATE:

AIM: Write a program to print Hello World!

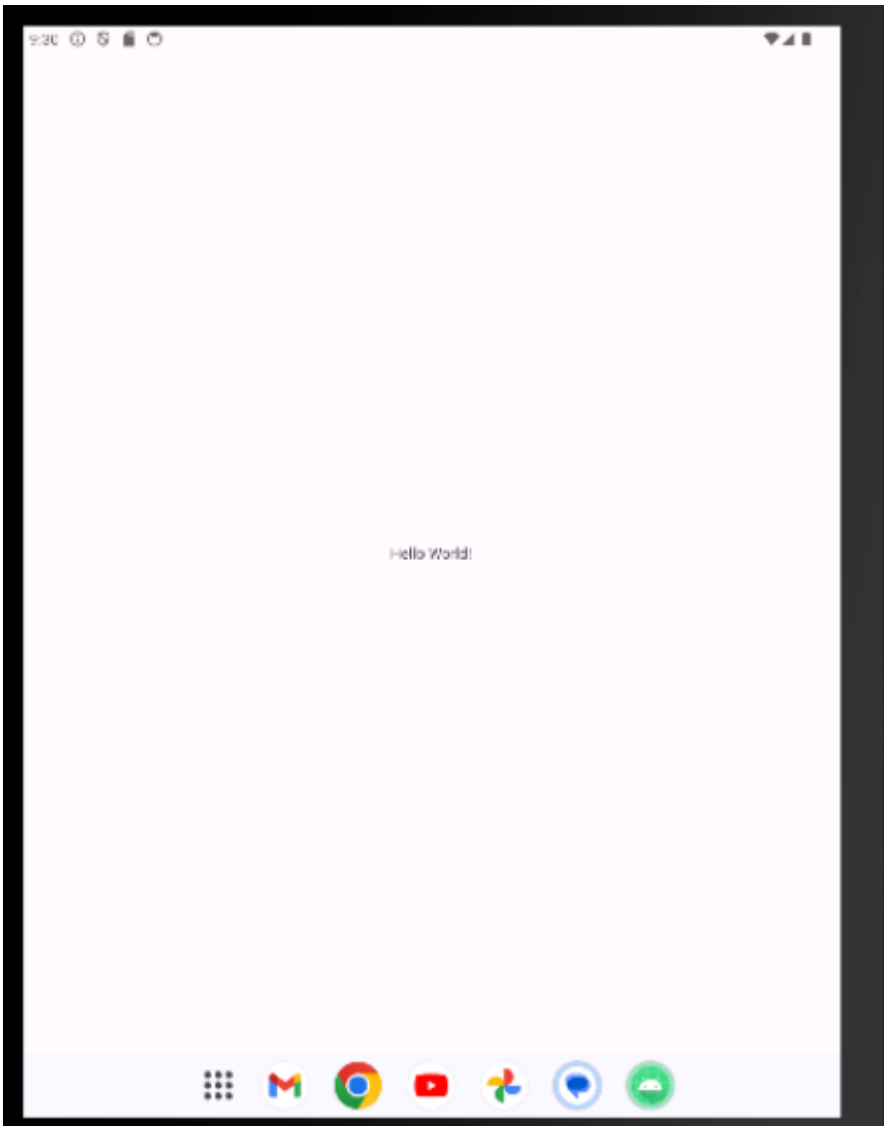
MainActivity.java

```
package com.example.app2;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
@Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

activity_main.xml

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

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

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

OUTPUT:



RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 02 **DATE:**

AIM: Design a Login form with username and password using LinearLayout and toast valid credentials.

MainActivity.java

```
package com.example.loginform;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      Button login_button = findViewById(R.id.buttonLogin);
      EditText username = findViewById(R.id.editTextUsername);
      EditText password = findViewById(R.id.editTextPassword);

      login_button.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {

            if(username.getText().toString().equals("admin") &&
password.getText().toString().equals("123")){


Toast.makeText(getApplicationContext(),"Successfull",Toast.LENGTH_LONG
).show();

            }else {
               Toast.makeText(getApplicationContext(),"Invalid Username or
password",Toast.LENGTH_LONG).show();
            }
```

```
        }
    });

  }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:gravity="center_vertical"
   android:orientation="vertical"
   android:padding="16dp">

   <EditText
      android:id="@+id/editTextUsername"
      android:layout_width="match_parent"
      android:layout_height="60dp"
      android:hint="Username"
      android:inputType="text" />

   <EditText
      android:id="@+id/editTextPassword"
      android:layout_width="match_parent"
      android:layout_height="60dp"
      android:hint="Password"
      android:inputType="textPassword" />

   <Button
      android:id="@+id/buttonLogin"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Login" />

</LinearLayout>
```

OUTPUT:

RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 03 **DATE:**

AIM: Write a program that demonstrates Activity Lifecycle.

MainActivity.java

```
package com.example.activitylifecycle;
import android.os.Bundle;
import android.util.Log;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("Activity_Lifecycle", "onCreate invoked");
        Toast.makeText(MainActivity.this, "Created",
Toast.LENGTH_SHORT).show();
    }

    protected void onStart() {
        super.onStart();
        Log.d("Activity_Lifecycle", "onStart invoked");
        Toast.makeText(MainActivity.this, "Start",
Toast.LENGTH_SHORT).show();
    }
```

```
    @Override
    protected void onResume() {
        super.onResume();
        Log.d("Activity_Lifecycle", "onResume invoked");
        Toast.makeText(MainActivity.this, "Resume",
Toast.LENGTH_SHORT).show();
    }
@Override
    protected void onPause() {
        super.onPause();
        Log.d("Activity_Lifecycle", "onPause invoked");
        Toast.makeText(MainActivity.this, "Pause",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStop() {
        super.onStop();
        Log.d("Activity_Lifecycle", "onStop invoked");
        Toast.makeText(MainActivity.this, "Stop",
Toast.LENGTH_SHORT).show();
    }
@Override
    protected void onRestart() {
        super.onRestart();
        Log.d("Activity_Lifecycle", "onRestart invoked");
        Toast.makeText(MainActivity.this, "Restart",
Toast.LENGTH_SHORT).show();
 }
```

```
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("Activity_Lifecycle", "onDestroy invoked");
        Toast.makeText(MainActivity.this, "Destroy",
Toast.LENGTH_SHORT).show();
    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
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:fitsSystemWindows="true"
    tools:context=".MainActivity">

    <LinearLayout
        android:id="@+id/linearLayout"
        android:layout_width="395dp"
        android:layout_height="715dp"
        android:orientation="vertical"
```

```
        tools:layout_editor_absoluteX="8dp"
        tools:layout_editor_absoluteY="8dp">

    </LinearLayout>

    <TextView
        android:paddingLeft="125dp"
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="34dp"
        android:text="Activity life cycle"
        app:layout_anchor="@+id/linearLayout"
        app:layout_anchorGravity="center" />


</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

OUTPUT:

RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 04 **DATE:**

AIM: Implementing basic arithmetic operations of a simple calculator.

MainActivity.java

```
package com.example.calculator;
import  android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.text.DecimalFormat;

public class MainActivity extends AppCompatActivity {

    private EditText num1EditText, num2EditText;
    private TextView resultTextView;
@Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        num1EditText = findViewById(R.id.num1EditText);
        num2EditText = findViewById(R.id.num2EditText);
```

```
resultTextView = findViewById(R.id.resultTextView);

Button addButton = findViewById(R.id.addButton);

addButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        performCalculation('+');
    }
});

Button subtractButton = findViewById(R.id.subtractButton);
subtractButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        performCalculation('-');
    }
});

Button multiplyButton = findViewById(R.id.multiplyButton);
multiplyButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        performCalculation('*');
    }
});
```

```
        Button divideButton = findViewById(R.id.divideButton);
        divideButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performCalculation('/');
            }
        });

        Button sqrtButton = findViewById(R.id.sqrtButton);
        sqrtButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateSquareRoot();
            }
        });
    }

    private void performCalculation(char operator) {
        // Get the values entered in the input fields
        String num1Str = num1EditText.getText().toString();
        String num2Str = num2EditText.getText().toString();

        // Check if either input field is empty
        if (num1Str.isEmpty() || num2Str.isEmpty()) {
            Toast.makeText(this, "Please enter both numbers",
Toast.LENGTH_SHORT).show();
            return; // Exit the method to prevent calculations with empty inputs
        }
```

```
        // Convert the input values to numeric format
        double num1 = Double.parseDouble(num1Str);
        double num2 = Double.parseDouble(num2Str);
        double result = 0;

        // Perform the selected calculation based on the operator
        switch (operator) {
            case '+':
                result = num1 + num2;
                break;
            case '-':
                result = num1 - num2;
                break;
            case '*':
                result = num1 * num2;
                break;
            case '/':
                if (num2 != 0) {
                    result = num1 / num2;
                } else {
                    Toast.makeText(this, "Cannot divide by zero",
Toast.LENGTH_SHORT).show();
                    return; // Exit the method if division by zero is attempted
                }
                break;
        }
```

```
        // Format and display the calculation result
        DecimalFormat df = new DecimalFormat("#.##");
        resultTextView.setText("Result: " + df.format(result));
    }
    private void calculateSquareRoot() {
        String num1Str = num1EditText.getText().toString();
        // Check if the input field is empty
        if (num1Str.isEmpty()) {
            Toast.makeText(this, "Please enter a number",
Toast.LENGTH_SHORT).show();
            return; // Exit the method to prevent calculations with empty inputs
        }

        double num = Double.parseDouble(num1Str);
        double sqrtResult = Math.sqrt(num);
        DecimalFormat df = new DecimalFormat("#.##");
        resultTextView.setText("Square Root: " + df.format(sqrtResult));
    }
}
```

activity_main.xml

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

```
android:layout_height="match_parent"
android:padding="16dp"
tools:context=".MainActivity">

<EditText
    android:id="@+id/num1EditText"
    android:layout_width="0dp"
    android:layout_height="48dp"
    android:layout_marginTop="44dp"
    android:hint="Enter number 1"
    android:inputType="numberDecimal"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<EditText
    android:id="@+id/num2EditText"
    android:layout_width="0dp"
    android:layout_height="48dp"
    android:layout_marginTop="12dp"
    android:hint="Enter number 2"
    android:inputType="numberDecimal"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.47"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num1EditText" />
```

```
<Button
    android:id="@+id/addButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="+"
    android:textSize="16sp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2EditText" />

<Button
    android:id="@+id/subtractButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="-"
    android:textSize="16sp"
    app:layout_constraintEnd_toStartOf="@+id/multiplyButton"
    app:layout_constraintStart_toEndOf="@+id/addButton"
    app:layout_constraintTop_toBottomOf="@+id/num2EditText" />

<Button
    android:id="@+id/multiplyButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="x"
```

```
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2EditText" />

<Button
    android:id="@+id/divideButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="/"
    android:textSize="16sp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/addButton" />

<Button
    android:id="@+id/sqrtButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="140dp"
    android:text="Sqrt"
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/subtractButton" />

<TextView
    android:id="@+id/resultTextView"
```

```
        android:layout_width="84dp"
        android:layout_height="41dp"
        android:layout_marginStart="4dp"
        android:layout_marginTop="40dp"
        android:text="Result: "
        android:textSize="18sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/divideButton" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

OUTPUT:

RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 05 **DATE:**

AIM: Implement validations on various UI controls.

MainActivity.java

```
package com.example.uicontrol;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText username, password, email, mobile;
    Button submit;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        username = findViewById(R.id.editTextUsername);
        password = findViewById(R.id.editTextPassword);
        email = findViewById(R.id.editTextEmail);
```

```
        mobile = findViewById(R.id.editTextMobile);
        submit = findViewById(R.id.buttonLogin);
        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (!validateLogin()) {
                    Toast.makeText(getApplicationContext(), "Invalid Credentials",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }

    public boolean validateLogin() {

        if (username.getText().toString().length() == 0) {
            username.setError("This Field Required");
            return false;
        }

        if (!username.getText().toString().matches("[a-zA-Z]+")) {
            username.setError("Characters only");
            return false;
        }

        if (email.getText().toString().length() == 0) {
            email.setError("Email is required");
            return false;
```

```
        }

        String pattern1 = "[a-zA-z0-9._-]+@[a-z]+\\.+[a-z]+";

        if (!email.getText().toString().matches(pattern1)) {
            email.setError("Invalid email id");
            return false;
        }

        if (password.getText().toString().length() < 8) {
            password.setError("Password must have at least 8 characters");
            return false;
        }

        if (!password.getText().toString().matches(".*[a-z].*")) {
            password.setError("Password must contain at least one lowercase
character");
            return false;
        }

        if (!password.getText().toString().matches(".*[A-Z].*")) {
            password.setError("Password must contain at least one uppercase
character");
            return false;
        }

        if (!password.getText().toString().matches(".*[@#$%^&+=].*")) {
```

```
            password.setError("Password must contain at least one special
character");
            return false;
        }

        if (mobile.getText().toString().length() != 10) {
            mobile.setError("Invalid mobile number");
            return false;
        }
        if (!mobile.getText().toString().matches(".*[0-9].*")) {
            mobile.setError("This field contains only digits");
            return false;
        }
        return true;
    }
}
```

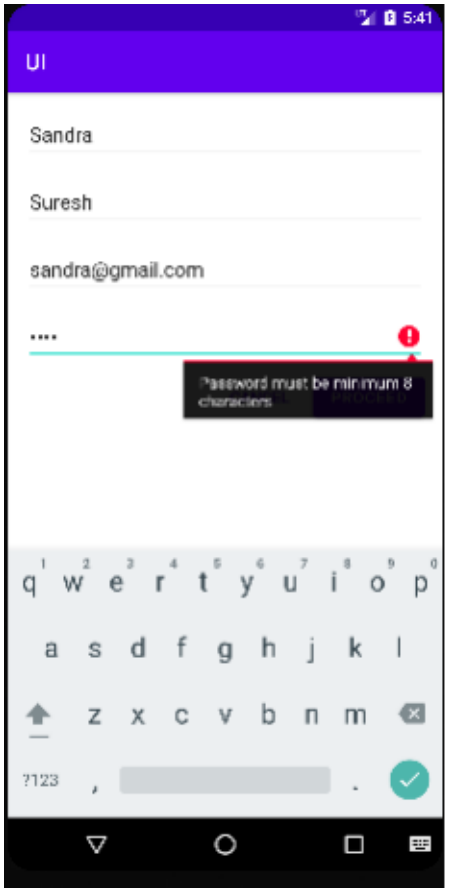
activity_main.xml

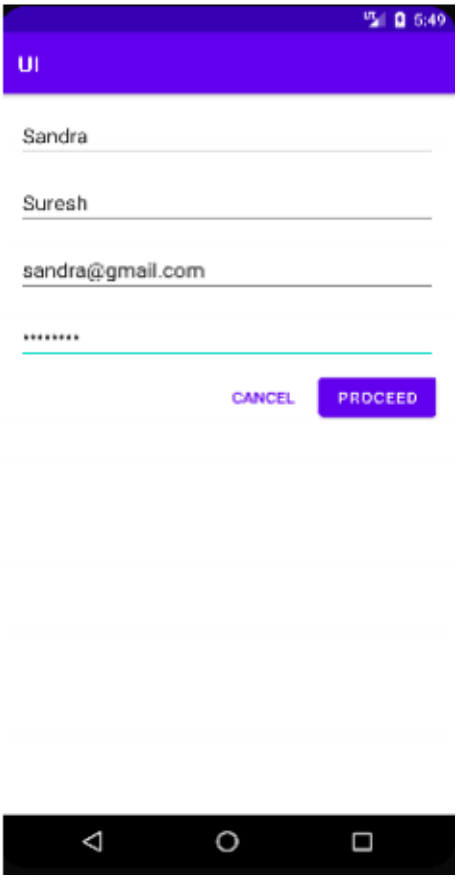
```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center_vertical"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:id="@+id/textView"
        android:layout_width="223dp"
```

```
    android:layout_height="78dp"
    android:text="Form validation"
    android:textSize="30dp" />

<EditText
    android:id="@+id/editTextUsername"
    android:layout_width="match_parent"
    android:layout_height="60dp"
    android:hint="Username"
    android:inputType="text" />

<EditText
    android:id="@+id/editTextPassword"
    android:layout_width="match_parent"
    android:layout_height="60dp"
    android:hint="Password"
    android:inputType="textPassword" />

<EditText
    android:id="@+id/editTextEmail"
    android:layout_width="match_parent"
    android:layout_height="60dp"
    android:ems="10"
    android:hint="Email"
    android:inputType="textEmailAddress"
  />
```

```
    <EditText
        android:id="@+id/editTextMobile"
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:ems="10"
        android:hint="Mobile"
        android:inputType="phone"
        />

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

</LinearLayout>
```

OUTPUT:





RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 06 **DATE:**

AIM: Find sum of two numbers and display the values on toast.

MainActivity.java

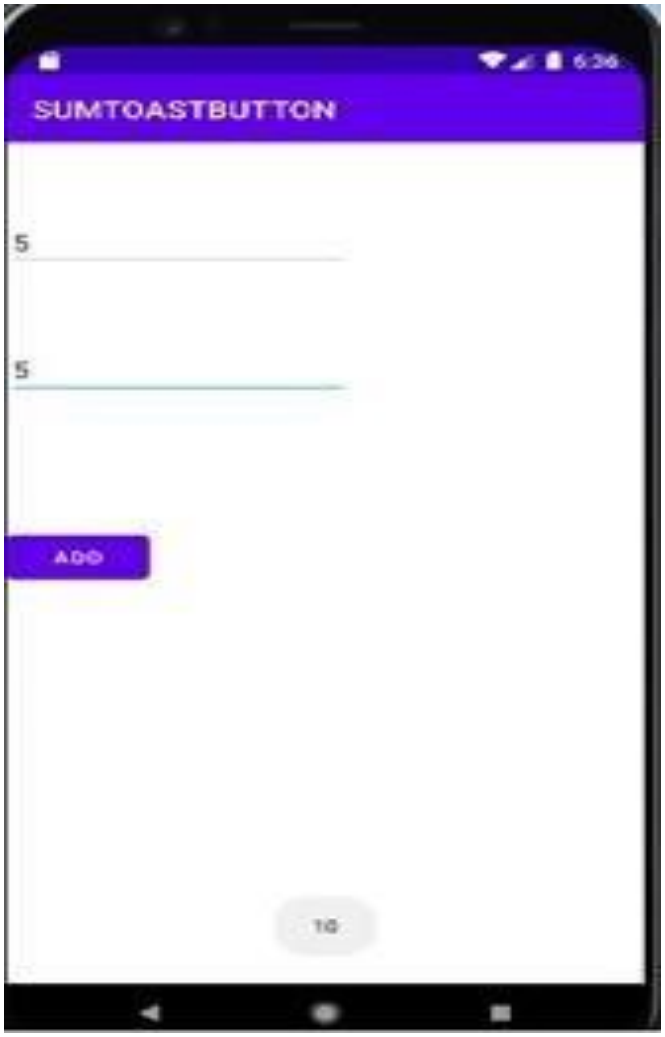
```
package com.example.sum;
import android.os.Bundle;;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
{
private EditText
value1,value2;
private Button
sum;

 @Override
  protected void onCreate(Bundle savedInstanceState)
  {
        super.onCreate(savedInstance
        State);
        setContentView(R.layout.activ
        ity_main);
        addListenerOnButton();
   }
public void addListenerOnButton(
{
```

```
        value1=(EditText)findViewByI
        d(R.id.entry1);
        value2=(EditText)findViewByI
        d(R.id.entry2);
        sum=(Button)findViewById(R.i
        d.button);

sum.setOnClickListener(new View.OnClickListener()
 {
        @Override
        public void onClick(View v) {
           String
           e1=value1.getText().toSt
           ring();          String
           e2=value2.getText().toSt
           ring();                int
           a=Integer.parseInt(e1);
           int sum=a+b;
Toast.makeText(getApplicationContext(),String.valueOf(sum),Toast.LENGTH_LONG).show(
);
}
});
 }
}
```

activity main.xml

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"    android:orientation=”vertical”
    xmlns:android=http://schemas.android.com/apk/res/android>
    <EditTextandroid:layout_width="wrap_content"
    android:layout_height="wrap_content" android:id="@+id/entry1"/>
    <EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:id="@+id/entry2"/>
    <Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:id="@+id/button"
    android:text="Add"/>
</LinearLayout>
```

OUTPUT



RESULT: The program was implemented and output obtained successfully.

LABCYCLE: 2

EXPERIMENT NO: 07 **DATE:**

AIM: Android to demonstrate the use of Implicit Intent.

MainActivity.java

```
package com.example.intent1;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import  android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity { @Override
protected void onCreate(Bundle savedInstanceState) {
EditTexteditText; Buttonbutton;
super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);
button = findViewById(R.id.btn);
editText = (EditText) findViewById(R.id.editText);
button.setOnClickListener(new View.OnClickListener() { @Override
public void onClick(View view) {
String url=editText.getText().toString();
Intent intent = new Intent(Intent.ACTION_VIEW,

                        startActivity(intent);
}}
```

activity_main.xml

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

    android:id="@+id/editText" android:layout_width="match_parent"

    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
    <Button

    android:id="@+id/btn" android:text="Search" android:onClick="search"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editText" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

OUTPUT

RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 08 **DATE:**

AIM: Android to demonstrate the use of Explicit Intent.

MainActivity.java

```
package com.example.intent;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
importandroid.content.Intent;
import android.view.View;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
    }

    public void newsScreen(View view) {
        Intent i = new Intent(getApplicationContext(),
MainActivity2.class); startActivity(i);
    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
    <androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Welcome to Home Screen"
        android:textAlignment="center" android:textSize="28sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <Button
        android:id="@+id/btn1" android:text="Go to News
        Screen" android:onClick="newsScreen"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText"
        />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Main Activity2.java

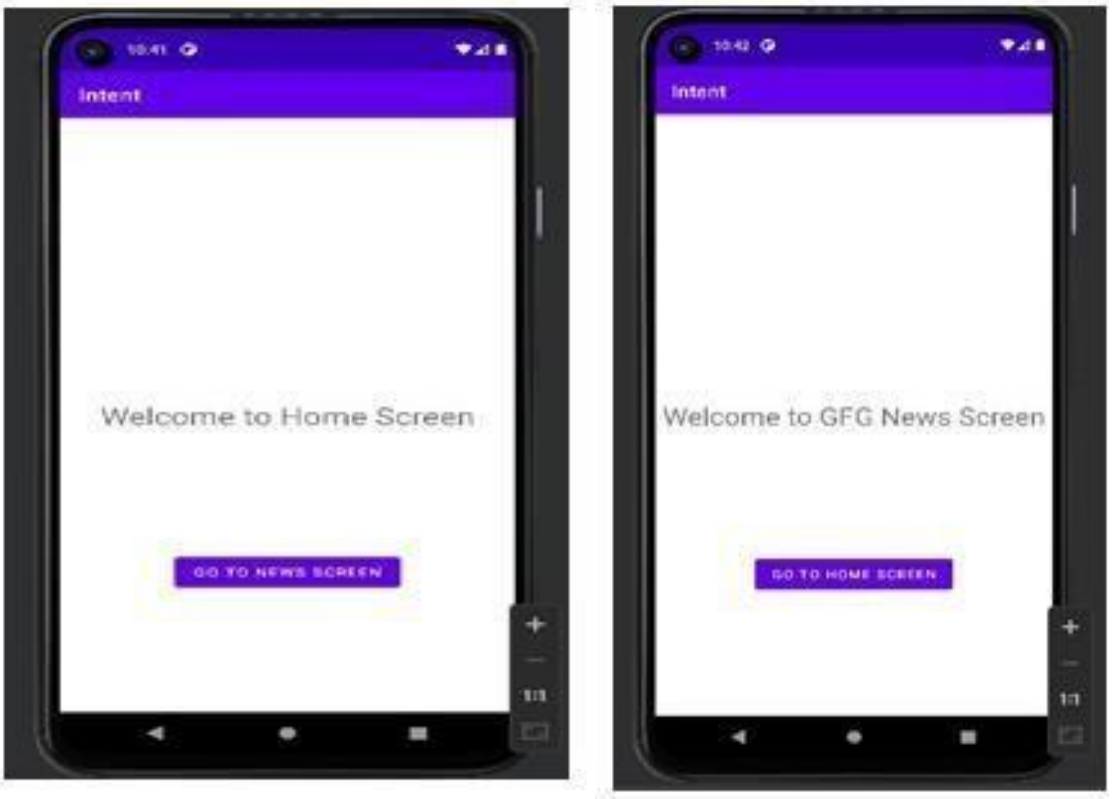
```
package com.example.intent;


import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
public class MainActivity2 extends AppCompatActivity {
@Override
        protected void onCreate(Bundle savedInstanceState) {
                super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main2);
        }


        public void homeScreen(View view) {
                Intent i = new Intent(getApplicationContext(), MainActivity.class);
startActivity(i);
        }
}
```

activity_main2.xml

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

```
        android:layout_height="match_parent"
        tools:context=".MainActivity2">


        <TextView android:id="@+id/editText"

            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Welcome to GFG News Screen"
            android:textAlignment="center"

            android:textSize="28sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.0"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent" />

        <Button

            android:id="@+id/btn2" android:text="Go to Home Screen"
            android:onClick="homeScreen"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/editText" />

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

OUTPUT



RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 09 **DATE:**

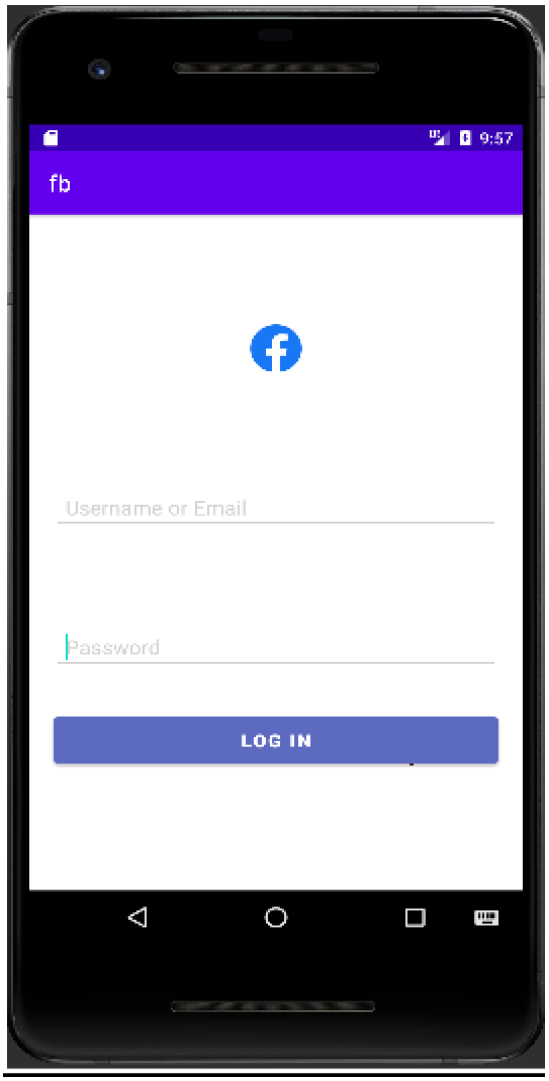
AIM: Create a Facebook Page using RelativeLayout set properties using xml.

activity_main.xml

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

    <ImageView

        android:layout_width="80dp" android:layout_height="80dp"
        android:layout_gravity="center"
        android:layout_marginTop="80dp"
        android:src="@drawable/fb_logo"/>

    <EditText

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="80dp"
        android:layout_marginRight="20dp"
        android:backgroundTint="#d3d3d3" android:hint="Username or
        Email" android:inputType="textEmailAddress"
        android:maxLines="1" android:padding="10dp"
        android:textColor="#ffffff" android:textColorHint="#d3d3d3"/>

    <EditText

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="80dp"
        android:layout_marginRight="20dp"
        android:backgroundTint="#d3d3d3" android:hint="Password"
        android:inputType="textPassword" android:maxLines="1"
        android:padding="10dp

        android:textColor="#ffffff" android:textColorHint="#d3d3d3"/>
```

```
<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/btnlogin" android:layout_marginLeft="20dp"
    android:layout_marginTop="35dp"
    android:layout_marginRight="20dp"
    android:backgroundTint="#5c6bc0" android:padding="10dp"
    android:text="Log In" android:textColor="#ffffff"
    android:textSize="16sp" android:textStyle="bold"/>
<RelativeLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
    <LinearLayout android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_alignParentBottom="true"
    android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/txtSignUp"
        android:gravity="center_horizontal" android:text="Sign up
        for facebook" android:textColor="#ffffff"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/txtForgotPassword"
        android:layout_gravity="center_horizontal"
        android:layout_marginTop="15dp"
        android:layout_marginBottom="15dp" android:text="Forgot
        Password" android:textColor="#ffffff"/>
</LinearLayout>
</RelativeLayout>
```

OUTPUT



RESULT: The program was implemented and output obtained successfully.

LABCYCLE: 3

EXPERIMENT NO: 10 **DATE:**

AIM: Develop an android application to implement options menu.

MainActivity.java

```
package com.example.menu;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem; import android.view.View;
import android.widget.EditText;
import android.widget.PopupMenu;
import android.widget.Toast;
import java.util.zip.Inflater;

public class MainActivity extends AppCompatActivity {
Menu myMenu;
EditText selectItem;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);
}
```

```
//This function is to create option menu @Override
public boolean onCreateOptionsMenu(Menu menu)
MenuInflater inflater = getMenuInflater();
inflater.inflate(R.menu.main_menu, menu);
selectItem = (EditText)findViewById(R.id.popupmenu);
return true;
}
//This function is for making the option menu clickable @Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
if (item.getItemId() == R.id.item1)
{
Toast.makeText(this, "Home Selected", Toast.LENGTH_SHORT).show();
}
if (item.getItemId() == R.id.item2)
{
Toast.makeText(this, "About Selected", Toast.LENGTH_SHORT).show();
}
if (item.getItemId() == R.id.item3)
{
Toast.makeText(this, "Contact Selected", Toast.LENGTH_SHORT).show();
}
return true;
}
//This is for option menu, this function will trigger once the gadget against this
//function is clicked.
public void btnPopup(View view) {
PopupMenu popup = new PopupMenu(this, view);
```

```
popup.getMenuInflater().inflate(R.menu.main_menu, popup.getMenu());
popup.show();
//This function is to make the popup menu clickable
popup.setOnMenuItemClickListener(new
PopupMenu.OnMenuItemClickListener() {
@Override
public boolean onMenuItemClick(MenuItem menuItem) {
if (menuItem.getItemId() ==
R.id.item1)
{
selectItem.setText("Home");
Toast.makeText(MainActivity.this, "Home Selected",
Toast.LENGTH_SHORT).show();
}
if (menuItem.getItemId() == R.id.item2)
{
selectItem.setText("About"); Toast.makeText(MainActivity.this, "About
Selected",
Toast.LENGTH_SHORT).show();
}
if (menuItem.getItemId() == R.id.item3)
{
selectItem.setText("Contact");
Toast.makeText(MainActivity.this, "Contact Selected",
Toast.LENGTH_SHORT).show();
}
return true;
}
```

```
});
}
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
    <androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent" tools:context=".MainActivity">
    <EditText
        android:id="@+id/popupmenu"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="btnPopup" android:hint="Select Item"
        android:editable="false" android:gravity="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Colors.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
   <color name="colorPrimary">#6200EE</color>
   <color name="colorPrimaryDark">#3700B3</color>
   <color name="colorAccent">#03DAC5</color>
</resources>
```

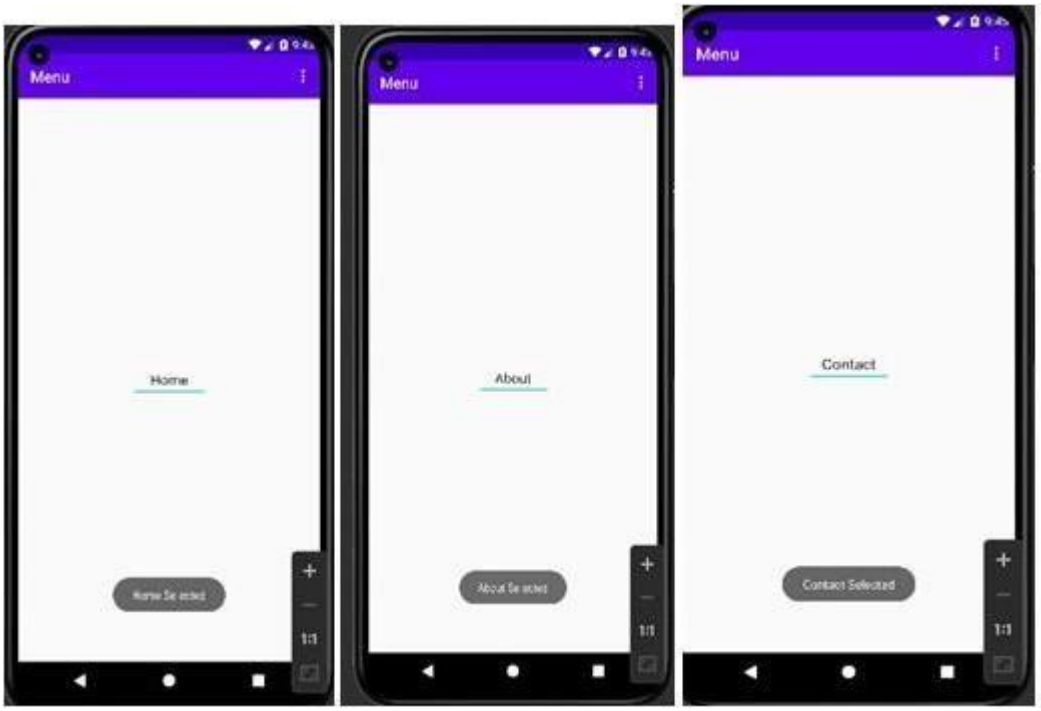
String.xml

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

Style.xml

```
<resources>
<!-- Base application theme. -->
        <style name="AppTheme"
        parent="Theme.AppCompat.Light.DarkActionBar">        <!-- Customize
        your theme here. -->
                <item name="colorPrimary">@color/colorPrimary</item>
                <item
                name="colorPrimaryDark">@color/colorPrimaryDark</item>
                <item name="colorAccent">@color/colorAccent</item>
        </style>
</resources>
```

OUTPUT



RESULT: The program was implemented and output obtained successfully.

LABCYCLE: 4

EXPERIMENT NO: 11 **DATE:**

AIM: Android program to demonstrate the working of alert box.

MainActivity.java

```
package com.example.alertbox;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity{
@Override
public void onClick(View v)
{
AlertDialog.Builder builder=new
AlertDialog.Builder(MainActivity.this); builder.setTitle("Login
Alert").setMessage("Are you sure, you want to continue ?")
.setCancelable(false)
.setPositiveButton("Yes", new DialogInterface.OnClickListener()
{
@Override
```

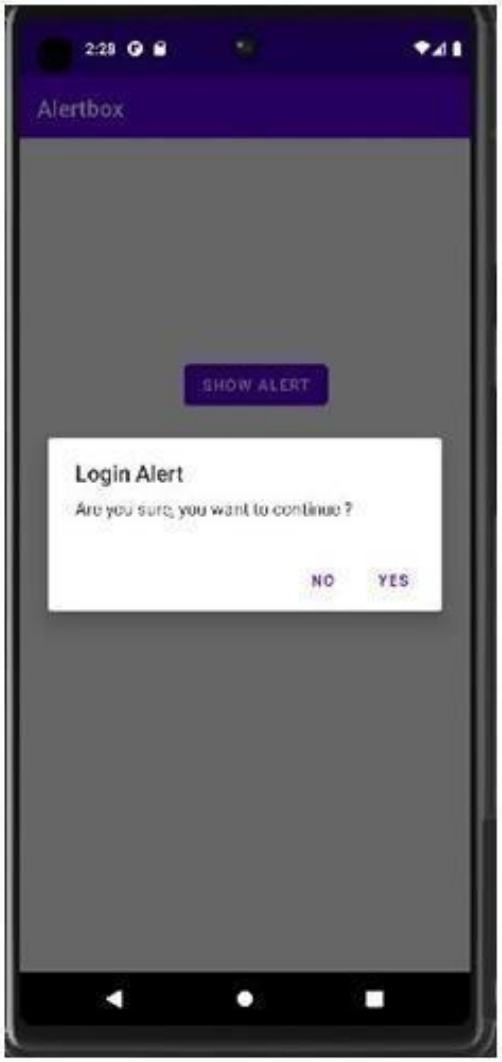
```
public void onClick(DialogInterface dialog, int which)
{
Toast.makeText(MainActivity.this,"Selected Option:
YES",Toast.LENGTH_SHORT).show();
}
})
.setNegativeButton("No",new DialogInterface.OnClickListener()
{
@Override
public void onClick(DialogInterface dialog, int which)
{
Toast.makeText(MainActivity.this,"Selected Option:
No",Toast.LENGTH_SHORT).show();
}
});
AlertDialog dialog=builder.create(); dialog.show();
}
});
}
```

activitymain.xml

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

```
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Show Alert" android:id="@+id/getBtn"
android:layout_marginLeft="150dp"
android:layout_marginTop="200dp" />
</RelativeLayout>
```

OUTPUT



RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 12 **DATE:**

AIM: Android program to implement Spinner.

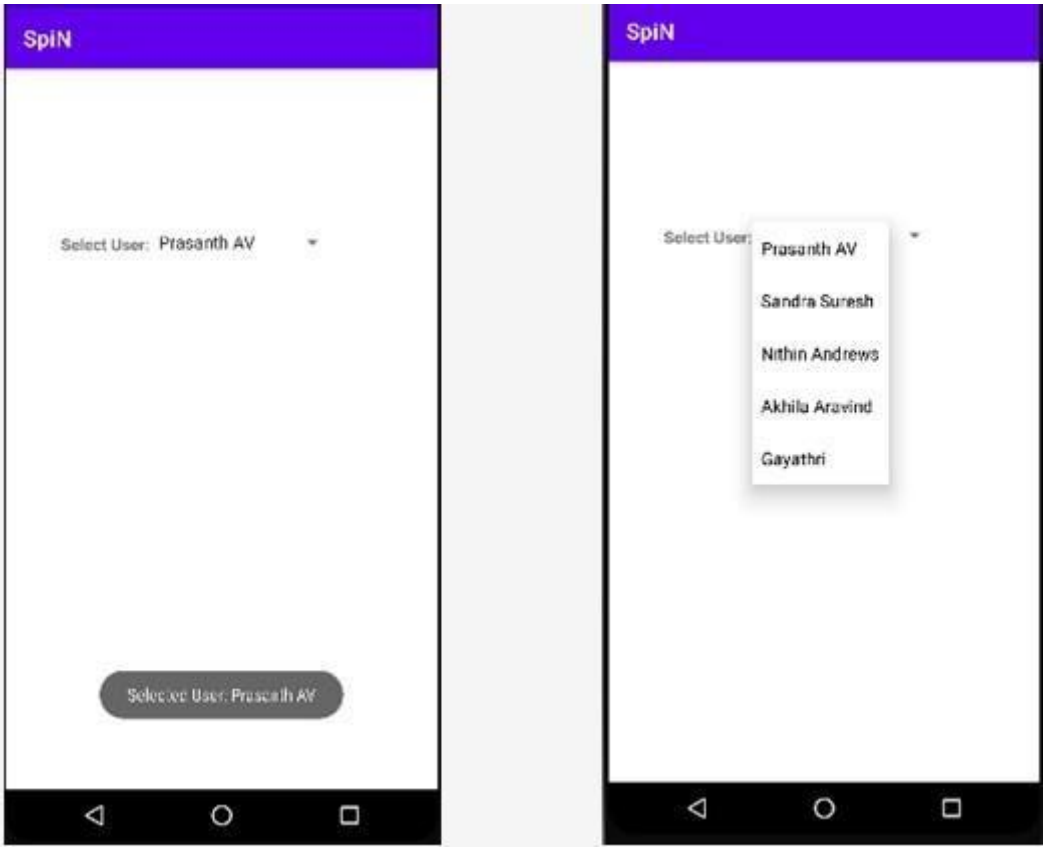
MainActivity.java

```
package com.example.spin;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener {
        String[] users = { "Prasanth AV", "Sandra Suresh", "Nithin Andrews",
        "Akhila Aravind", "Gayathri" };
           @Override
         protected void onCreate(Bundle savedInstanceState) {
                Toast.makeText(getApplicationContext(), "Selected User:
                "+users[position]
                ,Toast.LENGTH_LONG).show();
           }
        @Override
           public void onNothingSelected(AdapterView<?> arg0) {
                // TODO - Custom Code
           }
}
```

activity_main.xml

```
<?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/txtVw"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="150dp"
        android:text="Select User:"
        android:textStyle="bold"
        android:textSize="15dp" />
   <Spinner
        android:id="@+id/spinner1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/txtVw"
        android:layout_toRightOf="@+id/txtVw" />
</RelativeLayout>
```

OUTPUT



RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 13 **DATE:**

AIM: Android program to apply themes via code and manifest file.

Themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
  <!-- Base application theme. -->

  <style name="Theme.Theme"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
    <!-- Primary brand color. -->

    <item
    name="colorPrimary">@color/design_default_color_primary</item>
    <item
name="colorPrimaryVariant">@color/design_default_color_primary_dark<
/item>
    <item name="colorOnPrimary">@color/white</item>
  </style>
    <!-- Secondary brand color. -->

  <style name="TextviewStyle"
  parent="@android:style/Widget.TextView">
   <item name="android:layout_width">wrap_content</item>
    <item name="android:layout_height">wrap_content</item>
    <item name="android:layout_marginLeft">100dp</item>
    <item name="android:layout_marginTop">10dp</item>
    <item name="android:textColor">#86AD33</item>
    <item name="android:textStyle">bold</item>
    <item name="android:textSize">20dp</item>
  </style>
  <style name="ButtonStyle" parent="@android:style/Widget.Button">
    <item name="android:layout_width">200dp</item>
    <item name="android:layout_height">wrap_content</item>
    <item name="android:layout_marginLeft">100dp</item>
    <item name="android:layout_marginTop">10dp</item>
    <item name="android:textColor">#FFFFFF</item>
    <item name="android:background">#F1511B</item>
    <item name="android:textStyle">bold</item>
    <item name="android:textSize">15dp</item>
```

```
    </style>
    <string name="wlcmsg">welcome to Tutlane</string>
  </resources>
```

activity main.xml

```
<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        xmlns:android="http://schemas.android.com/apk/res/android" >
        <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:id="@+id/TextView1"
                android:layout_marginLeft="100dp"
                android:layout_marginTop="200dp"
                android:textColor="#00ADEF"
                android:textSize="15dp"
                android:text="@string/wlcmsg">
        </TextView>
        <TextView
                android:id="@+id/TextView2"
                style="@style/TextviewStyle"
                android:text="Welcome to Tutlane"/>
        <Button
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:id="@+id/btnShow"
```

```
            android:text="Click on Button"
            style="@style/ButtonStyle"/>
</LinearLayout>
```

OUTPUT

RESULT: The program was implemented and output obtained successfully.

EXPERIMENT NO: 14 **DATE:**

AIM: Create an android application performs CRUD operations in android SQLite.

File:java

```
package com.androapp.data;
import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends Activity implements OnClickListener
{
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Rollno=(EditText)findViewById(R.id.Rollno);
Name=(EditText)findViewById(R.id.Name);
Marks=(EditText)findViewById(R.id.Marks);
Insert=(Button)findViewById(R.id.Insert);
Delete=(Button)findViewById(R.id.Delete);
Update=(Button)findViewById(R.id.Update);
View=(Button)findViewById(R.id.View);
```

```
ViewAll=(Button)findViewById(R.id.ViewAll);
Insert.setOnClickListener(this);
Delete.setOnClickListener(this);
Update.setOnClickListener(this);
View.setOnClickListener(this);
ViewAll.setOnClickListener(this);
db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno
VARCHAR,name VARCHAR,marks VARCHAR);");
}
public void onClick(View view)
{
if(view==Insert)
{
if(Rollno.getText().toString().trim().length()==0||
Name.getText().toString().trim().length()==0||
Marks.getText().toString().trim().length()==0)
{
showMessage("Error", "Please enter all values");
return;
}
db.execSQL("INSERT INTO student
VALUES('"+Rollno.getText()+"','"+Name.getText()+"','"+Marks.getText()+"');"
); showMessage("Success", "Record added"); clearText();
}
if(view==Delete)
{
if(Rollno.getText().toString().trim().length()==0)
{
```

```
showMessage("Error", "Please enter Rollno");
return;
}
Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
if(c.moveToFirst())
{
db.execSQL("DELETE FROM student WHERE
rollno='"+Rollno.getText()+"'");
showMessage("Success", "Record Deleted");
}
else
{
showMessage("Error", "Invalid Rollno");
}
clearText();
}
if(view==Update)
{
if(Rollno.getText().toString().trim().length()==0)
{
showMessage("Error", "Please enter Rollno");
return;
}
Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
if(c.moveToFirst()) {
```

```
db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" +
Marks.getText() +"' WHERE rollno='"+Rollno.getText()+"'");
showMessage("Success", "Record Modified");
}
else {
showMessage("Error", "Invalid Rollno");
}
clearText();
}
if(view==View)
{
if(Rollno.getText().toString().trim().length()==0)
{
showMessage("Error", "Please enter Rollno"); return;
}
Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
if(c.moveToFirst())
{
Name.setText(c.getString(1));
Marks.setText(c.getString(2));
}
else
{
showMessage("Error", "Invalid Rollno"); clearText();
}
}
if(view==ViewAll)
```

```
{
Cursor c=db.rawQuery("SELECT * FROM student", null);
if(c.getCount()==0)
{
showMessage("Error", "No records found");
return;
}
StringBuffer buffer=new StringBuffer();
while(c.moveToNext())
{
buffer.append("Rollno: "+c.getString(0)+"\n");
buffer.append("Name: "+c.getString(1)+"\n");
buffer.append("Marks: "+c.getString(2)+"\n\n");
}
showMessage("Student Details", buffer.toString());
}
}
public void showMessage(String title,String message)
{
Builder builder=new Builder(this);
builder.setCancelable(true);
builder.setTitle(title); builder.setMessage(message);
builder.show();
}
public void clearText()
{
Rollno.setText("");
```

```
Name.setText("");
Marks.setText("");
Rollno.requestFocus();

}
}
```

File.xml

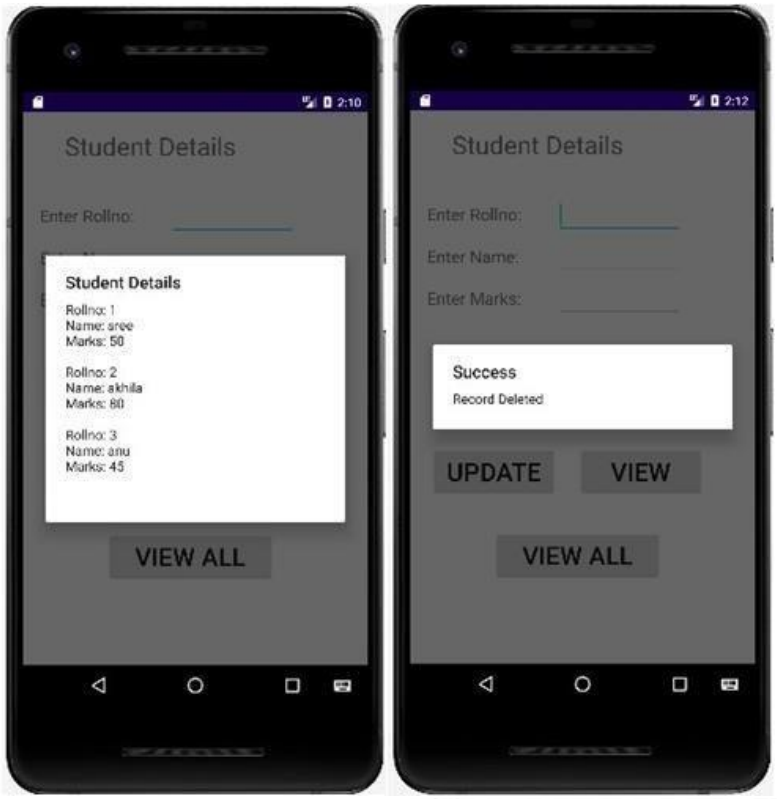
```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="50dp" android:layout_y="20dp"
        android:text="Student Details"
        android:textSize="30sp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="110dp"
        android:text="Enter Rollno:"
        android:textSize="20sp" />
    <EditText
        android:id="@+id/Rollno"
        android:layout_width="150dp"
```

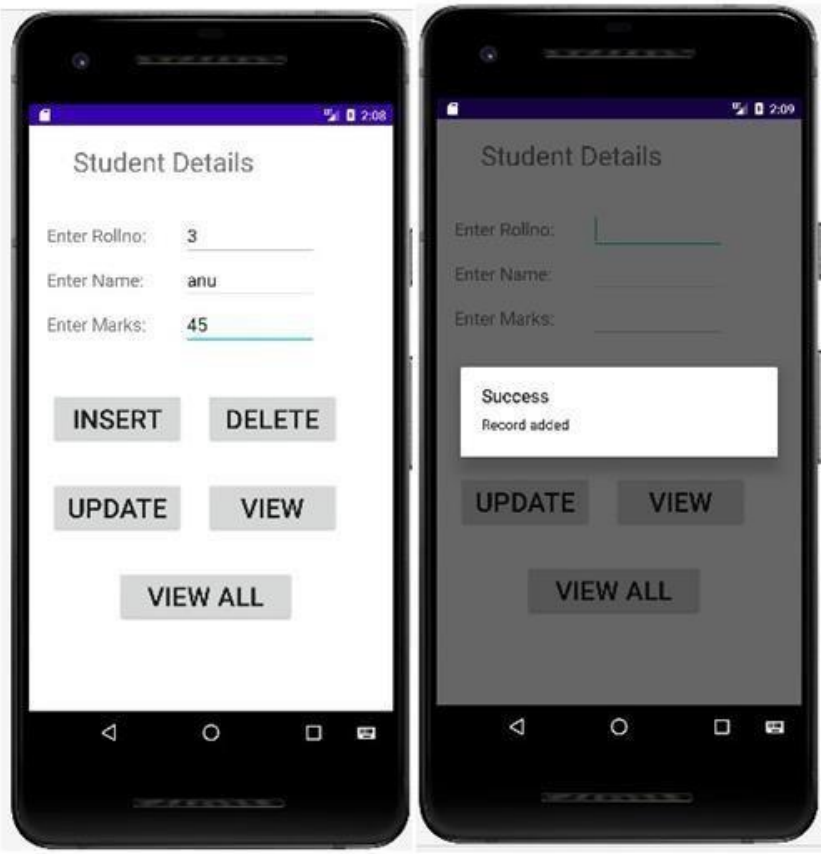
```
        android:layout_height="wrap_content"
        android:layout_x="175dp"
        android:layout_y="100dp"
        android:inputType="number"
        android:textSize="20sp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="160dp"
        android:text="Enter Name:"
        android:textSize="20sp" />
        <EditText android:id="@+id/Name"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="175dp"
        android:layout_y="150dp"
        android:inputType="text"
        android:textSize="20sp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="210dp"
        android:text="Enter Marks:"
        android:textSize="20sp" />
    <EditText
```

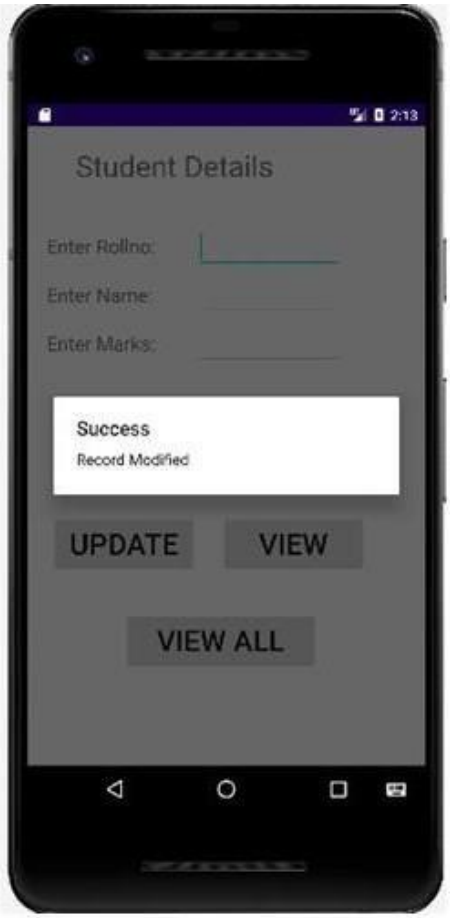
```
        android:id="@+id/Marks"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="175dp"
        android:layout_y="200dp"
        android:inputType="number"
        android:textSize="20sp" />
    <Button
        android:id="@+id/Insert"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="25dp"
        android:layout_y="300dp"
        android:text="Insert"
        android:textSize="30dp" />
    <Button
        android:id="@+id/Delete"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="200dp"
        android:layout_y="300dp"
        android:text="Delete"
        android:textSize="30dp" />
    <Button
        android:id="@+id/Update"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
```

```
            android:layout_x="25dp"
            ndroid:layout_y="400dp"
            android:text="Update"
            android:textSize="30dp" />
        <Button
            android:id="@+id/View"
            android:layout_width="150dp"
            android:layout_height="wrap_content"
            android:layout_x="200dp"
            android:layout_y="400dp"
            android:text="View"
            android:textSize="30dp" />


        <Button
            android:id="@+id/ViewAll"
            android:layout_width="200dp"
            android:layout_height="wrap_content"
            android:layout_x="100dp"
            android:layout_y="500dp"
            android:text="View All"
            android:textSize="30dp" />
</AbsoluteLayout>
```

OUTPUT:


2:10
Student Details
Enter Rollno:
Student Details
Rollno: 1
Name: sree
Marks: 50
Rollno: 2
Name: akhila
Marks: 80
Rollno: 3
Name: anu
Marks: 45
VIEW ALL
2:12
Student Details
Enter Rollno:
Enter Name:
Enter Marks:
Success
Record Deleted
UPDATE
VIEW
VIEW ALL


2:08
Student Details
Enter Rollno: 3
Enter Name: anu
Enter Marks: 45
INSERT
DELETE
UPDATE
VIEW
VIEW ALL
2:09
Student Details
Enter Rollno:
Enter Name:
Enter Marks:
Success
Record added
UPDATE
VIEW
VIEW ALL



RESULT: The program was implemented and output obtained successfully.

LABCYCLE: 5

EXPERIMENT NO: 15 **DATE:**

AIM: Develop an application as a Micro project which uses SQLite database as an assignment.

Entry.java

```
package com.pandanadroversapplications.student;


import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
public class Entry extends Activity implements OnClickListener
{
    EditText Rollno,Name,Marks;
    Button Insert,Delete,Update,View,ViewAll;
    SQLiteDatabase db;

    /** Called when the activity is first created. */ @Override
    public void onCreate(Bundle savedInstanceState)
    {
```

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_entry);

Rollno=(EditText)findViewById(R.id.Rollno);
Name=(EditText)findViewById(R.id.Name);
Marks=(EditText)findViewById(R.id.Marks);
Insert=(Button)findViewById(R.id.Insert);
Delete=(Button)findViewById(R.id.Delete);
Update=(Button)findViewById(R.id.Update);
View=(Button)findViewById(R.id.View);
ViewAll=(Button)findViewById(R.id.ViewAll);
Insert.setOnClickListener(this);
Delete.setOnClickListener(this);
Update.setOnClickListener(this);
View.setOnClickListener(this);
ViewAll.setOnClickListener(this);

// Creating database and table
db=openOrCreateDatabase("StudentDB",  Context.MODE_PRIVATE,
null); db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno
VARCHAR,name
VARCHAR,marks VARCHAR);");
}
public void onClick(View view)
{
// Inserting a record to the Student table if(view==Insert)
{
// Checking for empty fields
if(Rollno.getText().toString().trim().length()==0||
```

```
Name.getText().toString().trim().length()==0||
Marks.getText().toString().trim().length()==0)

{

showMessage("Error", "Please enter all values");

return;

}

db.execSQL("INSERT INTO student
VALUES('"+Rollno.getText()+"','"+Name.getText()+

"','"+Marks.getText()+"');"); showMessage("Success", "Record added");

clearText();

}

// Deleting a record from the Student table if(view==Delete)

{

// Checking for empty roll number
if(Rollno.getText().toString().trim().length()==0)

{

showMessage("Error", "Please enter Rollno");

return;

}

Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);


if(c.moveToFirst())

{

db.execSQL("DELETE FROM student WHERE
rollno='"+Rollno.getText()+"'");

showMessage("Success", "Record Deleted");

}

else
```

```
{
showMessage("Error", "Invalid Rollno");
}
clearText();
}
// Updating a record in the Student table if(view==Update)
{
// Checking for empty roll number
if(Rollno.getText().toString().trim().length()==0)
{
showMessage("Error", "Please enter Rollno");
return;
}
Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno="'+Rollno.getText()+"'", null);
if(c.moveToFirst()) {
db.execSQL("UPDATE student SET name='" + Name.getText() +
"',marks='" + Marks.getText() +
"' WHERE rollno="'+Rollno.getText()+"'"); showMessage("Success",
"Record
Modified");
}
else {
showMessage("Error", "Invalid Rollno");
}
clearText();
}
// Display a record from the Student table if(view==View)
{
```

```
// Checking for empty roll number
if(Rollno.getText().toString().trim().length()==0)
{
showMessage("Error", "Please enter Rollno");
return;
}
Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
if(c.moveToFirst())
{
Name.setText(c.getString(1));
Marks.setText(c.getString(2));
}
else
{
showMessage("Error", "Invalid Rollno");
clearText();
}
}
// Displaying all the records if(view==ViewAll)
{
Cursor c=db.rawQuery("SELECT * FROM student", null);
if(c.getCount()==0)
{
showMessage("Error", "No records found");
return;
}
StringBuffer buffer=new StringBuffer();
```

```
        while(c.moveToNext())
        {
        buffer.append("Rollno: "+c.getString(0)+"\n");
        buffer.append("Name: "+c.getString(1)+"\n");
        buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details",
        buffer.toString());
        }
        }
        public void showMessage(String title,String message)
        {
        Builder builder=new Builder(this);

        builder.setCancelable(true);
        builder.setTitle(title);
        builder.setMessage(message);
        builder.show();
        }
        public void clearText()
        {
        Rollno.setText("");
        Name.setText("");
        Marks.setText("");
        Rollno.requestFocus();
        }
}
```

Entry.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="@drawable/img2">
  <TextView android:layout_width="wrap_content"
    android:layout_height="wrap_content"android:layout_x="50dp"
    android:layout_y="20dp" android:text="Student Details"
    android:textSize="30sp" />

  <TextView android:layout_width="wrap_content"
    android:layout_height="wrap_content"
     android:layout_x="20dp" android:layout_y="110dp"
     android:text="Enter Rollno:"android:textSize="20sp" />

  <EditText android:id="@+id/Rollno"
    android:layout_width="150dp"
    android:layout_height="wrap_content"android:layout_x="175dp"
    android:layout_y="100dp" android:inputType="number"
    android:textSize="20sp" />

  <TextView android:layout_width="wrap_content"
    android:layout_height="wrap_content"android:layout_x="20dp"
    android:layout_y="160dp" android:text="Enter Name:"
```

```
   android:textSize="20sp" />

<EditText android:id="@+id/Name" android:layout_width="150dp"
   android:layout_height="wrap_content"android:layout_x="175dp"
   android:layout_y="150dp" android:inputType="text"
   android:textSize="20sp" />

<TextView android:layout_width="wrap_content"
   android:layout_height="wrap_content"android:layout_x="20dp"
   android:layout_y="210dp" android:text="Enter Marks:"
   android:textSize="20sp" />

<EditText android:id="@+id/Marks"
   android:layout_width="150dp"
   android:layout_height="wrap_content"android:layout_x="175dp"
   android:layout_y="200dp" android:inputType="number"
   android:textSize="20sp" />

<Button
   android:id="@+id/Insert" android:layout_width="150dp"
   android:layout_height="wrap_content"android:layout_x="25dp"
   android:layout_y="300dp" android:text="Insert"
   android:textSize="30dp" />

<Button
   android:id="@+id/Delete" android:layout_width="150dp"
   android:layout_height="wrap_content"android:layout_x="200dp"
   android:layout_y="300dp" android:text="Delete"
   android:textSize="30dp" />
```

```
    <Button
      android:id="@+id/Update" android:layout_width="150dp"
      android:layout_height="wrap_content"android:layout_x="25dp"
      android:layout_y="400dp" android:text="Update"
      android:textSize="30dp" />

    <Button
      android:id="@+id/View" android:layout_width="150dp"
      android:layout_height="wrap_content"android:layout_x="200dp"
      android:layout_y="400dp" android:text="View"
      android:textSize="30dp" />

    <Button
      android:id="@+id/ViewAll" android:layout_width="200dp"
      android:layout_height="wrap_content"android:layout_x="100dp"
      android:layout_y="500dp"
      android:text="View All" android:textSize="30dp" />

  </AbsoluteLayout>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
  xmlns:android="http://schemas.android.com/apk/res/andro
  id"xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="@drawable/img1"
```

```
    tools:context=".MainActivity">
    <TextView android:id="@+id/textView" android:layout_width="346dp"
      android:layout_height="wrap_content"
      android:layout_alignParentStart="true"
      android:layout_alignParentEnd="true"
      android:layout_alignParentBottom="true"
      android:layout_marginStart="53dp"
      android:layout_marginEnd="11dp"
      android:layout_marginBottom="445dp"
      android:text="Student Details"
      android:textColor="#4A4444"
      android:textSize="40sp" android:textStyle="bold" />
  </RelativeLayout>
```

Ic_launcher_background.xml

```
<?xml version="1.0" encoding="utf-8"?>
  <vector
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:width="108dp"
    android:height="108dp" android:viewportWidth="108"
    android:viewportHeight="108">

    <path
      android:fillColor="#3DDC84"
      android:pathData="M0,0h108v108h-108z" />
```

```
<path
    android:fillColor="#00000000"
    android:pathData="M9,0L9,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M19,0L19,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M29,0L29,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M39,0L39,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M49,0L49,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
```

```
<path
    android:fillColor="#00000000"
    android:pathData="M59,0L59,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M69,0L69,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M79,0L79,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M89,0L89,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M99,0L99,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
```

```
<path
   android:fillColor="#00000000"
   android:pathData="M0,9L108,9"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,19L108,19"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,29L108,29"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,39L108,39"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,49L108,49"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />
```

```
<path
   android:fillColor="#00000000"
   android:pathData="M0,59L108,59"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,69L108,6
   9" android:strokeWidth="0.8"
   android:strokeColor="#33FFFFF
   F" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,79L108,79
   " android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF
   " />

<path
   android:fillColor="#00000000"
   android:pathData="M0,89L108,89"
   android:strokeWidth="0.8"
   android:strokeColor="#33FFFFFF" />

<path
   android:fillColor="#00000000"
   android:pathData="M0,99L108,99"
```

```
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M19,29L89,29"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M19,39L89,39"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M19,49L89,49"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M19,59L89,59"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
```

```
    android:fillColor="#00000000"
    android:pathData="M19,69L89,69"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M19,79L89,79"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M29,19L29,89"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M39,19L39,89"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
    android:fillColor="#00000000"
    android:pathData="M49,19L49,89"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />

<path
```

```
        android:fillColor="#00000000"
        android:pathData="M59,19L59,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />

    <path
        android:fillColor="#00000000"
        android:pathData="M69,19L69,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />




    <path
        android:fillColor="#00000000"
        android:pathData="M79,19L79,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />

</vector>
```

MainActivity.java

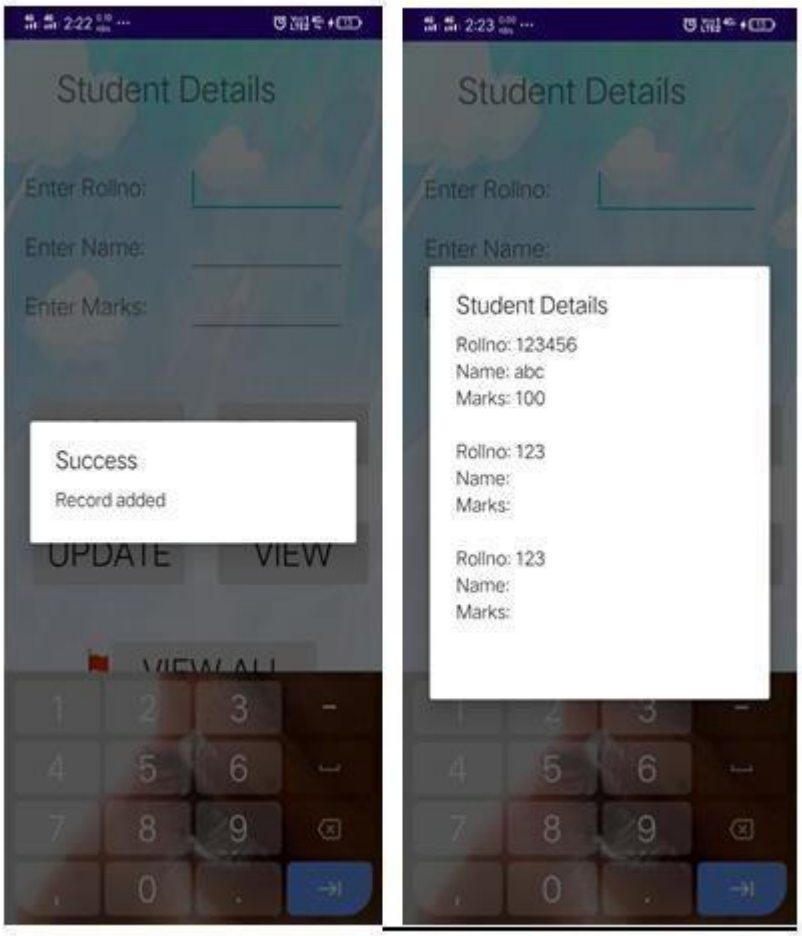
```
package com.pandanadroversapplications.student; import
androidx.appcompat.app.AppCompatActivity;import
android.content.Intent;
import android.os.Bundle; import android.os.Handler;import
java.util.Objects;
public class MainActivity extends AppCompatActivity {
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Objects.requireNonNull(getSupportActionBar()).hide(); new
Handler().postDelayed(() -> {
startActivity(new Intent(MainActivity.this,Entry.class)); finish();
}, 2000);

}
}
```

OUTPUT:


Student Details
Enter Rollno:
Enter Name:
Enter Marks:
INSERT
DELETE
UPDATE
VIEW
VIEW ALL


Student Details



RESULT: The program was implemented and output obtained successfully.