

PART-A**Experiment-No: 1**

Design four checkboxes namely any four food items and one button. Find total amount of food items selected in Toast message after clicking the button.

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#F5F5F5"
    tools:context=".MainActivity">
```

```

<androidx.constraintlayout.widget.ConstraintLayout
    android:id="@+id/content_container"
    android:layout_width="277dp"
    android:layout_height="420dp"
    android:padding="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.498">
```

```

<TextView
    android:id="@+id/title"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="24dp"
    android:text="Menu Selection"
    android:textColor="#333333"
    android:textSize="26sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```

<CheckBox
```

```

android:id="@+id/dosa"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="48dp"
android:text="Dosa"
android:textColor="#000000"
android:textSize="18sp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/title" />

```

```

<TextView
    android:id="@+id/dosa_price"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="20dp"
    android:text="Rs.30"
    android:textColor="#FF5722"
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="@+id/dosa" />

```

```

<CheckBox
    android:id="@+id/vada"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="Vada"
    android:textColor="#000000"
    android:textSize="18sp"
    app:layout_constraintStart_toStartOf="@+id/dosa"
    app:layout_constraintTop_toBottomOf="@+id/dosa" />

```

```

<TextView
    android:id="@+id/vada_price"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="20dp"
    android:text="Rs.20"
    android:textColor="#FF5722"
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="@+id/vada" />

```

```
<CheckBox
    android:id="@+id/idli"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="Idli"
    android:textColor="#000000"
    android:textSize="18sp"
    app:layout_constraintStart_toStartOf="@+id/vada"
    app:layout_constraintTop_toBottomOf="@+id/vada" />
```

```
<TextView
    android:id="@+id/idli_price"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="20dp"
    android:text="Rs.10"
    android:textColor="#FF5722"
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="@+id/idli" />
```

```
<CheckBox
    android:id="@+id/palav"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:text="Palav"
    android:textColor="#000000"
    android:textSize="18sp"
    app:layout_constraintStart_toStartOf="@+id/idli"
    app:layout_constraintTop_toBottomOf="@+id/idli" />
```

```
<TextView
    android:id="@+id/palav_price"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="12dp"
    android:layout_marginEnd="20dp"
    android:text="Rs.40"
    android:textColor="#FF5722"
    android:textSize="16sp"
```

```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="@+id/palav" />

        <Button
            android:id="@+id/submit_button"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="4dp"
            android:backgroundTint="#4CAF50"
            android:text="Submit"
            android:textColor="#FFFFFF"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.493"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/palav" />
    </androidx.constraintlayout.widget.ConstraintLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.fooditems;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    CheckBox idli,vada,dosa,palav;
    Button button;
    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        idli=findViewById(R.id.idli);
        vada=findViewById(R.id.vada);
        dosa=findViewById(R.id.dosa);
    }
}

```

```
palav=findViewById(R.id.palav);
button=findViewById(R.id.submit_button);

int idliPrice=10;
int vadaPrice=20;
int dosaPrice=30;
int palavPrive=40;

button.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        StringBuilder stringBuilder=new StringBuilder();
        int totalPrice=0;
        if(idli.isChecked()){
            totalPrice+=idliPrice;
            stringBuilder.append("Idli,");
        }
        if(vada.isChecked()){
            totalPrice+=vadaPrice;
            stringBuilder.append("vada,");
        }
        if(dosa.isChecked()){
            totalPrice+=dosaPrice;
            stringBuilder.append("dosa,");
        }
        if(palav.isChecked()){
            totalPrice+=palavPrive;
            stringBuilder.append("palav,");
        }

        Toast.makeText(MainActivity.this, "Total amount "+totalPrice,
Toast.LENGTH_SHORT).show();
    }
});
}
```

Sample Output:

7:19 PM | 0.2KB/s 4G 57%

Menu Selection

<input checked="" type="checkbox"/> Dosa	Rs.30
<input type="checkbox"/> Vada	Rs.20
<input checked="" type="checkbox"/> Idli	Rs.10
<input type="checkbox"/> Palav	Rs.40

Submit

Total amount 40

7:19 PM | 0.1KB/s 4G 57%

Menu Selection

<input type="checkbox"/> Dosa	Rs.30
<input type="checkbox"/> Vada	Rs.20
<input type="checkbox"/> Idli	Rs.10
<input type="checkbox"/> Palav	Rs.40

Submit

Total amount 0

Experiment-No: 2

Design simple calculator application that performs basic arithmetic operations. Use ADD, SUB, MUL, DIV buttons to perform operations, CLEAR button to reset the fields, and edit text widgets for reading operands, displaying result value.

XML Code:

```
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#F5F5F5"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/num1"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="41dp"
        android:layout_marginTop="104dp"
        android:layout_marginEnd="41dp"
        android:background="@android:drawable/editbox_background"
        android:hint="Enter First Number"
        android:inputType="numberDecimal"
        android:padding="12dp"
        android:textAlignment="center"
        android:textColor="#9C27B0"
        android:textSize="18sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintWidth_percent="0.8" />

    <EditText
        android:id="@+id/num2"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="41dp"
        android:layout_marginTop="60dp"
        android:layout_marginEnd="41dp"
```

```

        android:background="@android:drawable/editbox_background"
        android:hint="Enter Second Number"
        android:inputType="numberDecimal"
        android:padding="12dp"
        android:textAlignment="center"
        android:textColor="#9C27B0"
        android:textSize="18sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/num1"
        app:layout_constraintWidth_percent="0.8" />

```

```

<TextView
    android:id="@+id/result"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="24dp"
    android:padding="12dp"
    android:text="Result"
    android:textAlignment="center"
    android:textColor="#4CAF50"
    android:textSize="22sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.503"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2" />

```

```

<Button
    android:id="@+id/c1r"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="48dp"
    android:layout_marginEnd="73dp"
    android:background="#F44336"
    android:padding="8dp"
    android:text="C"
    android:textColor="FFFFFF"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/mod"
    app:layout_constraintTop_toBottomOf="@+id/div" />

```



```
<Button
    android:id="@+id/mod"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="80dp"
    android:layout_marginTop="45dp"
    android:layout_marginEnd="88dp"
    android:background="#9C27B0"
    android:text=""
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/clr"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/mul"
    app:layout_constraintVertical_bias="0.026"
    app:layout_constraintWidth_percent="0.2" />
```

```
<Button
    android:id="@+id/mul"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="80dp"
    android:layout_marginTop="50dp"
    android:layout_marginEnd="87dp"
    android:background="#4CAF50"
    android:text="x"
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    app:layout_constraintEnd_toStartOf="@+id/div"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/add"
    app:layout_constraintWidth_percent="0.2" />
```

```
<Button
    android:id="@+id/sub"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginEnd="81dp"
    android:background="#FF9800"
    android:text="-"
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
```

```

app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toEndOf="@+id/add"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.543"
app:layout_constraintWidth_percent="0.2" />

```

<Button

```

    android:id="@+id/div"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="48dp"
    android:layout_marginEnd="80dp"
    android:background="#FF5722"
    android:text="÷"
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/mul"
    app:layout_constraintTop_toBottomOf="@+id/sub"
    app:layout_constraintWidth_percent="0.2" />

```

<Button

```

    android:id="@+id/add"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="80dp"
    android:layout_marginEnd="86dp"
    android:background="#03A9F4"
    android:text="+"
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/sub"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.543"
    app:layout_constraintWidth_percent="0.2" />

```

</androidx.constraintlayout.widget.ConstraintLayout>

Java Code:

```
package com.example.simplecalculator;

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.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText num1,num2;
    TextView result;
    Button add,sub,mul,div,mod,clr;
    double n1,n2,res;

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

        num1 = findViewById(R.id.num1);
        num2 = findViewById(R.id.num2);
        result = findViewById(R.id.result);
        add = findViewById(R.id.add);
        sub = findViewById(R.id.sub);
        mul = findViewById(R.id.mul);
        div = findViewById(R.id.div);
        mod = findViewById(R.id.mod);
        clr = findViewById(R.id.clr);

        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (validateInputs()) {
                    n1 = Double.parseDouble(num1.getText().toString());
                    n2 = Double.parseDouble(num2.getText().toString());
                    res = n1 + n2;
                    result.setText(String.valueOf(res));
                }
            }
        });
    }
}
```

```
sub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (validateInputs()) {
            n1 = Double.parseDouble(num1.getText().toString());
            n2 = Double.parseDouble(num2.getText().toString());
            res = n1 - n2;
            result.setText(String.valueOf(res));
        }
    }
});

mul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (validateInputs()) {
            n1 = Double.parseDouble(num1.getText().toString());
            n2 = Double.parseDouble(num2.getText().toString());
            res = n1 * n2;
            result.setText(String.valueOf(res));
        }
    }
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (validateInputs()) {
            n1 = Double.parseDouble(num1.getText().toString());
            n2 = Double.parseDouble(num2.getText().toString());
            // Handle division by zero
            if (n2 == 0) {
                Toast.makeText(MainActivity.this, "Cannot divide by zero",
Toast.LENGTH_SHORT).show();
            } else {
                res = n1 / n2;
                result.setText(String.valueOf(res));
            }
        }
    }
});

mod.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (validateInputs()) {
            n1 = Double.parseDouble(num1.getText().toString());
```

```

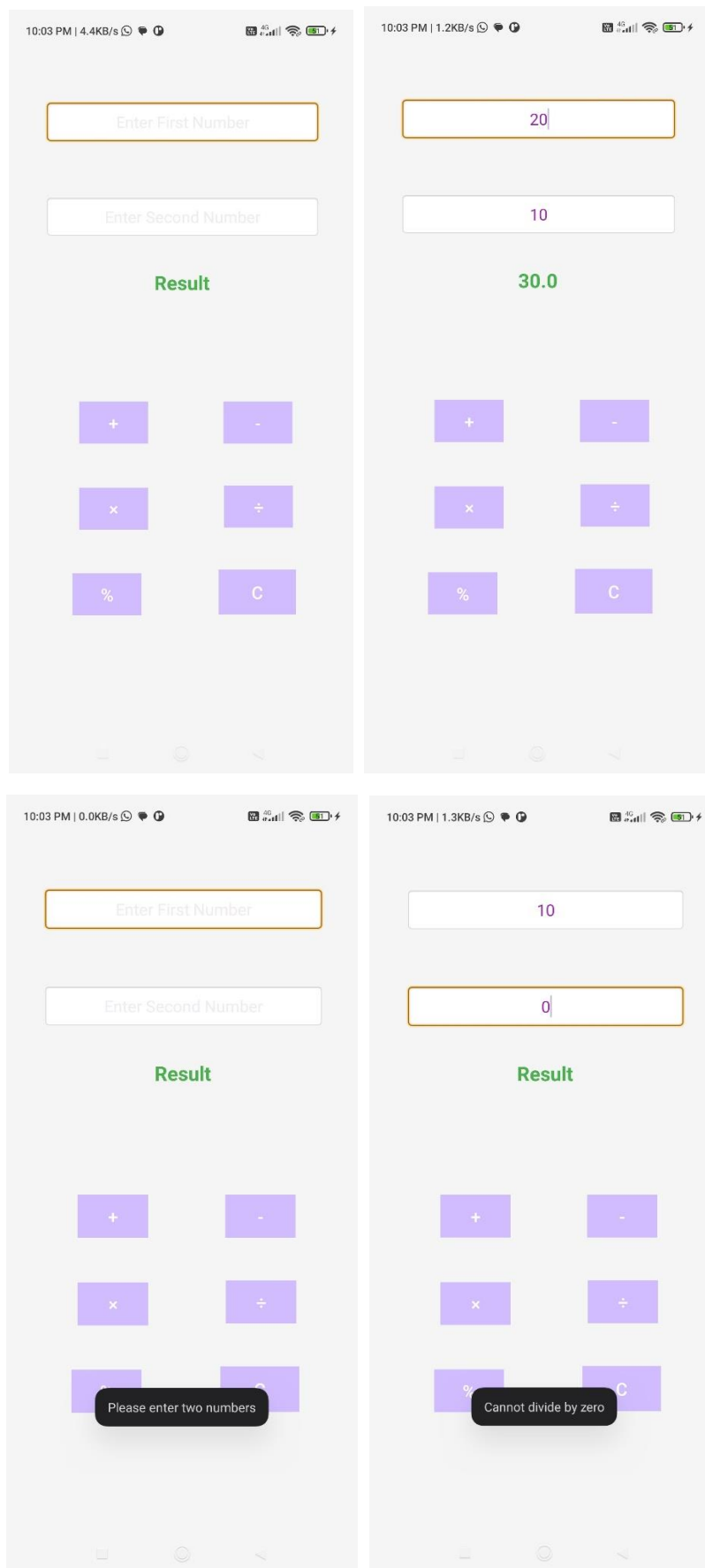
        n2 = Double.parseDouble(num2.getText().toString());
        // Handle modulus by zero
        if (n2 == 0) {
            Toast.makeText(MainActivity.this, "Cannot mod by zero",
Toast.LENGTH_SHORT).show();
        } else {
            res = n1 % n2;
            result.setText(String.valueOf(res));
        }
    }
}
});

clr.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        num1.setText("");
        num2.setText("");
        result.setText("Result");
    }
});

}
// Method to validate inputs
private boolean validateInputs() {
    if (num1.getText().toString().isEmpty() || num2.getText().toString().isEmpty()) {
        Toast.makeText(MainActivity.this, "Please enter two numbers",
Toast.LENGTH_SHORT).show();
        return false;
    }
    return true;
}
}

```

Sample Output:



Experiment-No: 3

Create an application which generates a random color on each click.

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/magic"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Magic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

Java Code:

```
package com.example.randomcolor;

import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;
import java.util.Random;

public class MainActivity extends AppCompatActivity {
    ConstraintLayout main;
    TextView rgb;
    Button magic;
```

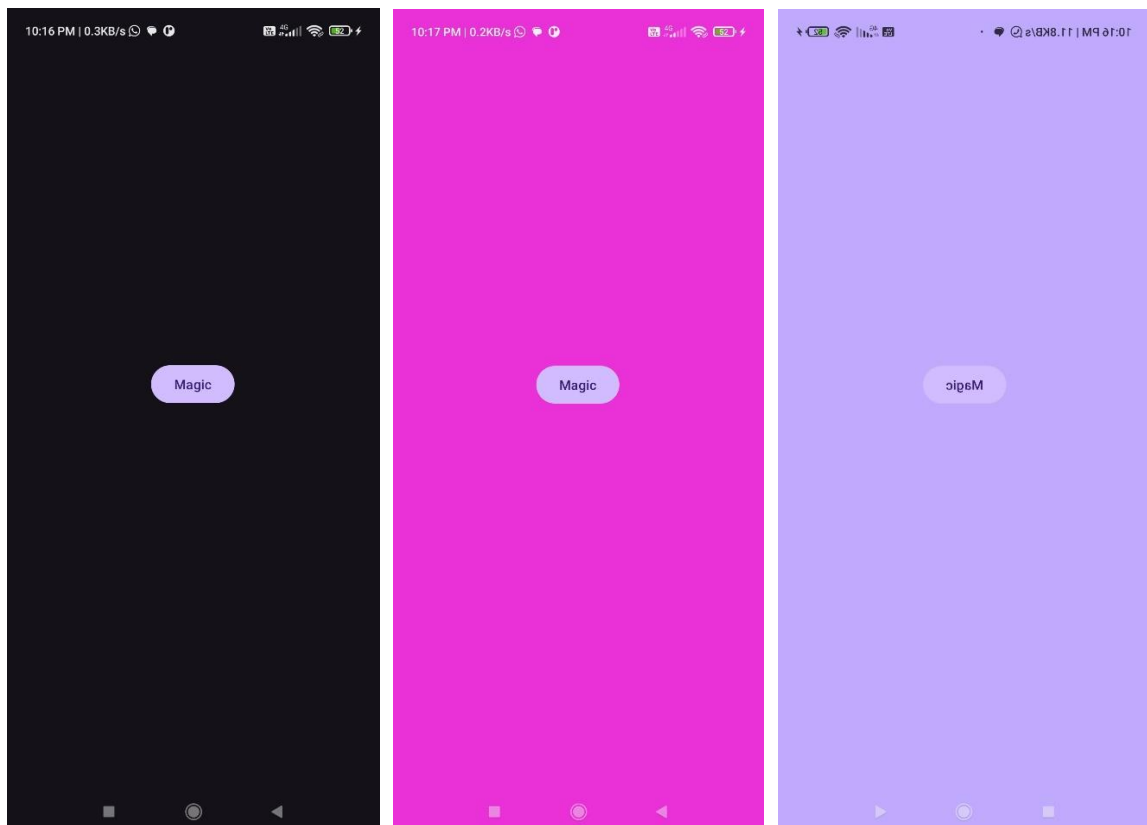
```

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    EdgeToEdge.enable(this);
    setContentView(R.layout.activity_main);
    main=findViewById(R.id.main);
    magic=findViewById(R.id.magic);

    magic.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Random random=new Random();
            int red=random.nextInt(256);
            int blue=random.nextInt(256);
            int green=random.nextInt(256);
            int color=Color.rgb(255,red,green,blue);
            main.setBackgroundColor(color);
        }
    });
}

```

Sample Output:



Experiment-No: 4

Implement the options menu concept in the application to choose between two activities (Give appropriate titles to activities).

XML Code:

```
<!--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:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<androidx.appcompat.widget.Toolbar
    android:id="@+id/toolbar"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:background="?attr/colorPrimary"
    android:minHeight="?attr/actionBarSize"
    android:theme="?attr/actionBarTheme"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

<!--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:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity2">

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Activity 2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```

        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

<!--activity_main3.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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity3">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity 3"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

<!-- mymenu.xml -->
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
<item
    android:title="Activity2"
    android:id="@+id/activity2"/>
<item
    android:title="Activity3"
    android:id="@+id/activity3"/>
</menu>

```

Java Code:

```

package com.example.optionsmenu;

import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;

```

```
import androidx.annotation.NonNull;
import androidx.appcompat.widget.Toolbar;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    Toolbar toolbar;

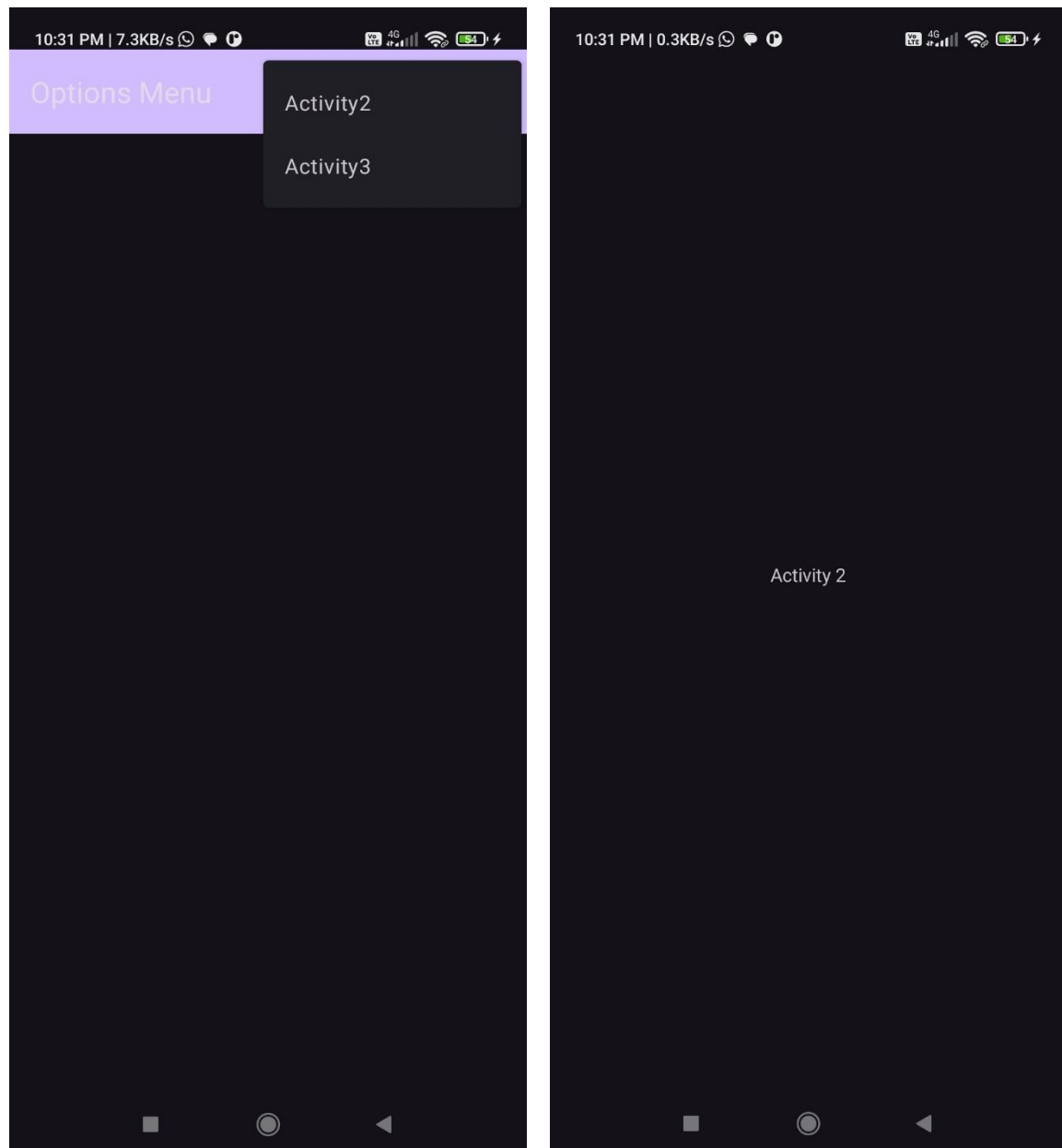
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        toolbar=findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater inflater=new MenuInflater(this);
        inflater.inflate(R.menu.mymenu,menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        Intent intent;
        int myItem= item.getItemId();
        if(myItem==R.id.activity2){
            intent=new Intent(this, MainActivity2.class);
            startActivity(intent);
        }
        if(myItem==R.id.activity3){
            intent=new Intent(this, MainActivity3.class);
            startActivity(intent);
        }
        return true;
    }
}
```

Sample Output:



Experiment-No: 5

Implement context menu concept in application to change the background color.

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:id="@+id/layout"
    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:text="Long press to change color"
        android:textSize="18sp"
        android:padding="16dp"
        android:textAlignment="center"
        android:background="@android:drawable/dialog_holo_light_frame"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

Java Code:

```
package com.example.contextmenu;

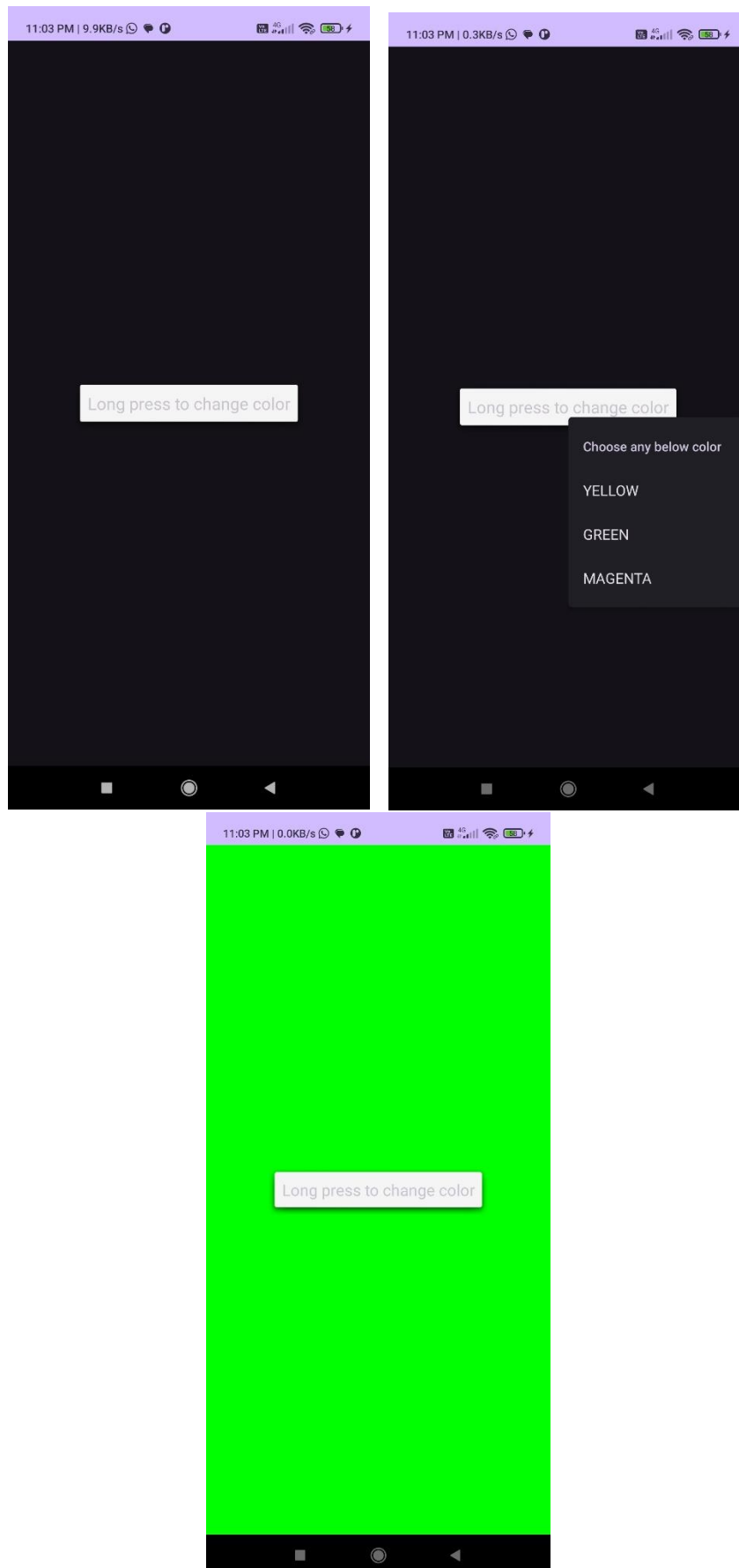
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;
import android.graphics.Color;
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.TextView;
```

```
public class MainActivity extends AppCompatActivity {
    TextView mytextView;
    ConstraintLayout mylayout;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mylayout=findViewById(R.id.layout);
        mytextView=findViewById(R.id.textView);
        registerForContextMenu(mytextView);
    }

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
    ContextMenu.ContextMenuInfo menuInfo) {
        menu.setHeaderTitle("Choose any below color");
        menu.add("YELLOW");
        menu.add("GREEN");
        menu.add("MAGENTA");
        super.onCreateContextMenu(menu, v, menuInfo);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if (item.getTitle()=="YELLOW")
            mylayout.setBackgroundColor(Color.YELLOW);
        if (item.getTitle()=="GREEN")
            mylayout.setBackgroundColor(Color.GREEN);
        if (item.getTitle()=="MAGENTA")
            mylayout.setBackgroundColor(Color.MAGENTA);
        return true;
    }
}
```

Sample Output:



Experiment-No: 6

Design an application to send SMS using Intent class.

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:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<EditText
    android:id="@+id/phone"
    android:layout_width="263dp"
    android:layout_height="60dp"
    android:layout_margin="16dp"
    android:hint="Enter phone number"
    android:inputType="phone"
    app:layout_constraintBottom_toTopOf="@+id/msg"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<EditText
    android:id="@+id/msg"
    android:layout_width="263dp"
    android:layout_height="60dp"
    android:layout_margin="16dp"
    android:hint="Enter your message"
    android:inputType="text"
    app:layout_constraintBottom_toTopOf="@+id/button"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/phone" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Send"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```



```
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/msg" />
```

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

Java Code:

```
package com.example.sms;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

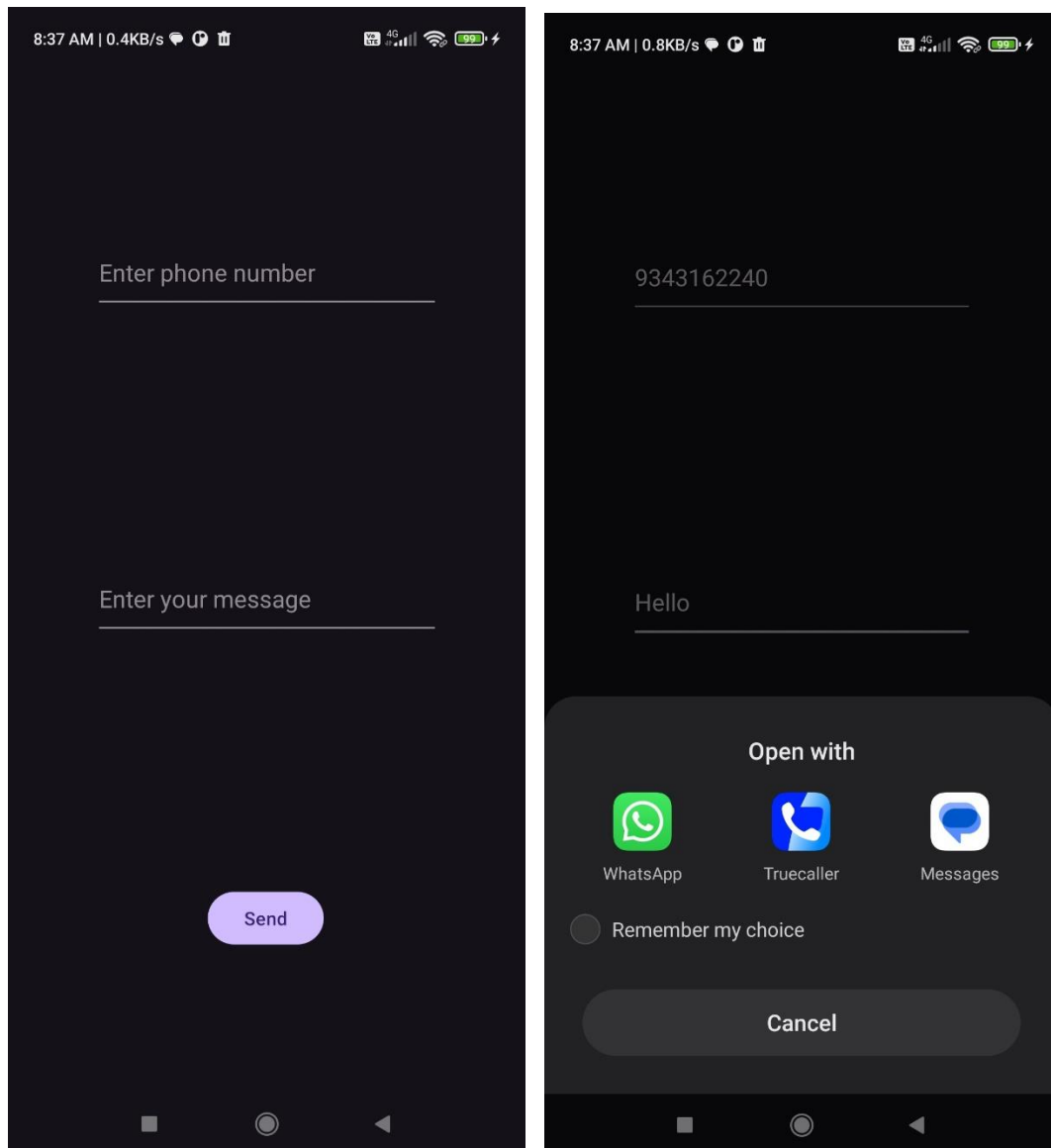
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    EditText phone, msg;
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        phone=findViewById(R.id.phone);
        msg=findViewById(R.id.msg);
        btn=findViewById(R.id.button);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new
Intent(Intent.ACTION_VIEW,Uri.fromParts("sms",phone.getText().toString(),null));
                intent.putExtra("sms_body",msg.getText().toString());
                startActivity(intent);
            }
        });
    }
}
```

Sample Output:



Experiment-No: 7

Design a phone call application that takes a phone number from the user.

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/phone"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:hint="Phone Number"
        android:inputType="phone"
        android:textAlignment="center"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintBottom_toTopOf="@+id/call" />

    <ImageButton
        android:id="@+id/call"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:layout_marginBottom="16dp"
        android:contentDescription="Call button"
        app:layout_constraintTop_toBottomOf="@+id/phone"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:srcCompat="@android:drawable/sym_action_call" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```
package com.example.phonecall;
import android.content.Intent;
import android.net.Uri;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageButton;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

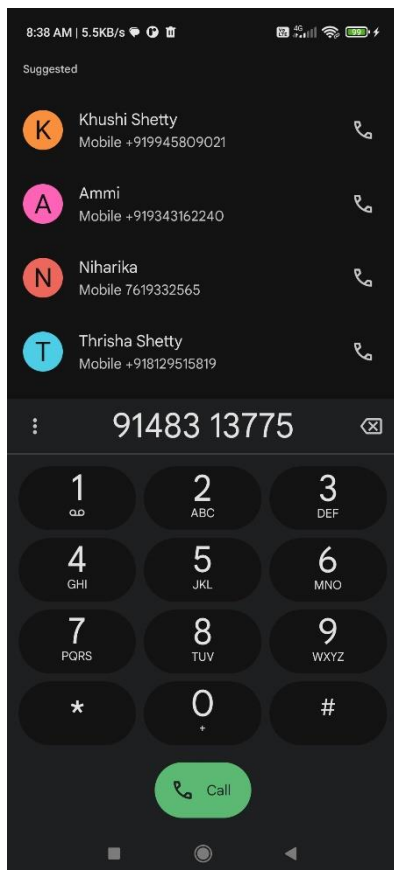
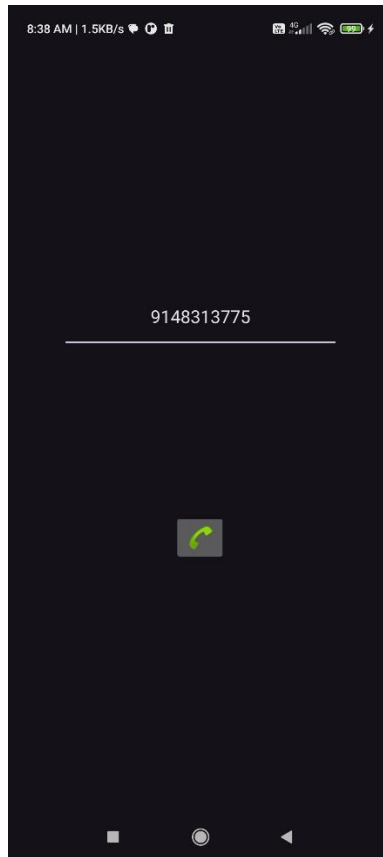
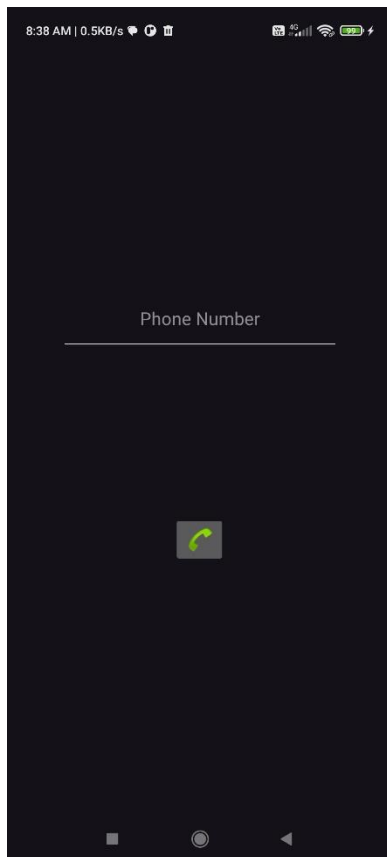
    EditText phone_no;
    ImageButton btn;

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

        phone_no = findViewById(R.id.phone);
        btn = findViewById(R.id.call);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(Intent.ACTION_DIAL, Uri.parse("tel:" +
phone_no.getText().toString()));
                startActivity(intent);
            }
        });
    }
}
```

Sample Output:



Experiment-No: 8

Write an application to toast your joining date and course selected for engineering using a Date picker and List view/Spinner.

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:id="@+id/ConstraintLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/EditTextDate"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="28dp"
        android:layout_marginTop="50dp"
        android:layout_marginBottom="24dp"
        android:ems="10"
        android:inputType="date"
        app:layout_constraintBottom_toTopOf="@+id/CalendarView"
        app:layout_constraintStart_toStartOf="@+id/CalendarView"
        app:layout_constraintTop_toTopOf="parent" />
    <CalendarView
        android:id="@+id/CalendarView"
        android:layout_width="256dp"
        android:layout_height="259dp"
        android:layout_marginStart="70dp"
        android:layout_marginEnd="70dp"
        android:layout_marginBottom="80dp"
        app:layout_constraintBottom_toTopOf="@+id/Spinner"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/EditTextDate" />
    <Button
        android:id="@+id/Button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="152dp"
        android:text="Button"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/Spinner" />
<Spinner
    android:id="@+id/Spinner"
    android:layout_width="165dp"
    android:layout_height="19dp"
    android:layout_marginStart="27dp"
    android:layout_marginEnd="27dp"
    android:layout_marginBottom="62dp"
    android:entries="@array/branches"
    app:layout_constraintBottom_toTopOf="@+id/Button"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/CalendarView" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Strings.xml:

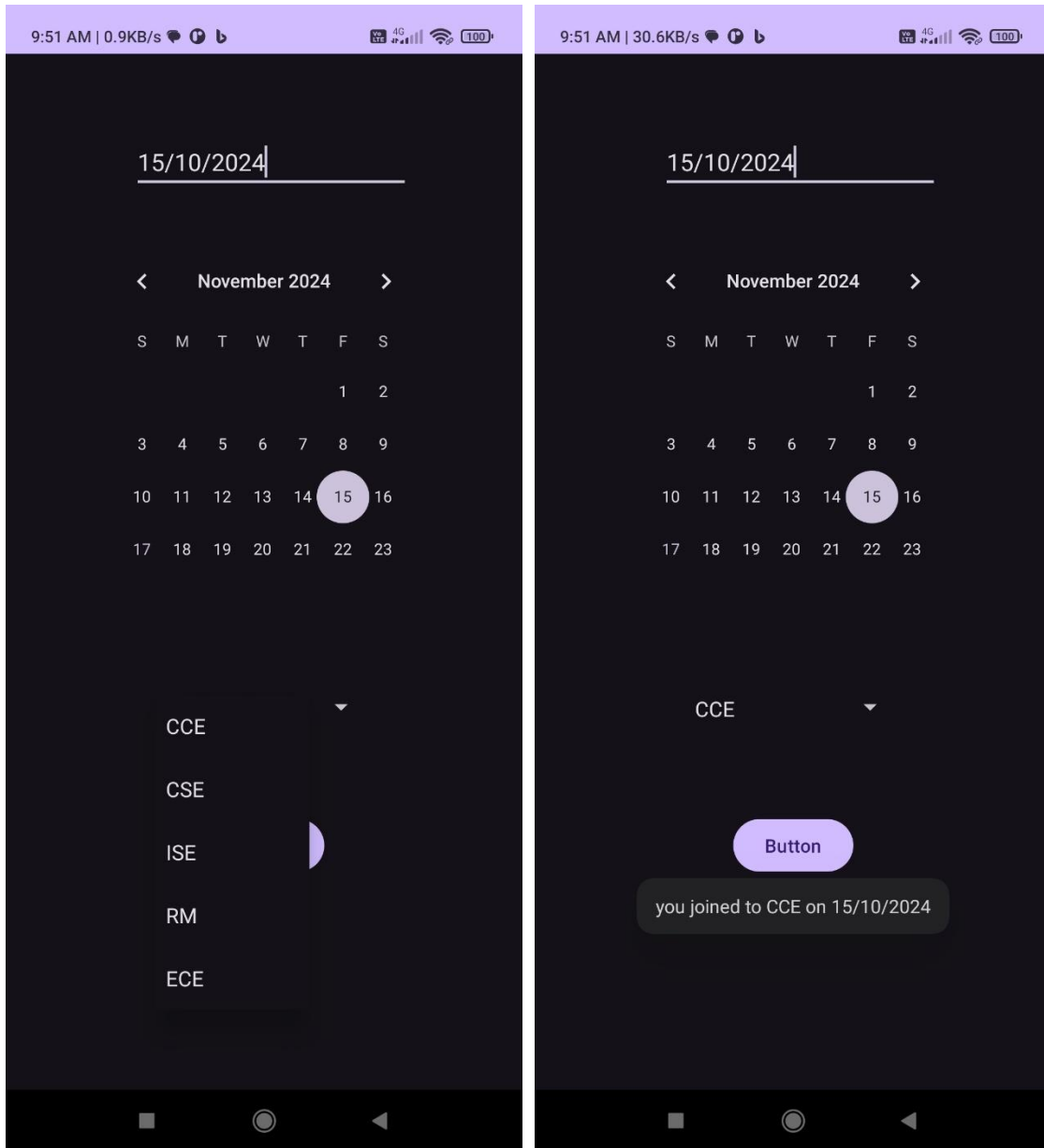
```
<resources>
    <string name="app_name">spinner</string>
    <string-array name="branches">
        <item>CCE</item>
        <item>CSE</item>
        <item>ISE</item>
        <item>RM</item>
        <item>ECE</item>
    </string-array>
</resources>
```

Java Code:

```
package com.example.spinner;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CalendarView;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    Spinner sp;
    EditText joindate;
    CalendarView cal;
    Button btn;
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    sp=findViewById(R.id.Spinner);
    joindate=findViewById(R.id.EditTextDate);
    cal=findViewById(R.id.CalendarView);
    btn=findViewById(R.id.Button);
    cal.setVisibility(View.INVISIBLE);
    joindate.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            cal.setVisibility(View.VISIBLE);
            cal.setOnDateChangeListener(new CalendarView.OnDateChangeListener() {
                @Override
                public void onSelectedDayChange(@NonNull CalendarView view, int year, int
                    month, int dayOfMonth) {
                    String date=dayOfMonth+"/"+month+"/"+year;
                    joindate.setText(date);
                    cal.setVisibility(view.INVISIBLE);
                }
            });
        }
    });
    btn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String branch=sp.getSelectedItem().toString();
            String doj=joindate.getText().toString();
            Toast.makeText(MainActivity.this,"you joined to "+branch+" on
"+doj,Toast.LENGTH_SHORT).show();
        }
    });
}
```


Sample Output:



Experiment-No: 9

Write an application to make a dialogue box to confirm the change of background color or image.

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:id="@+id/main"
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:text="Change the Background Color"
    android:textSize="24sp"
    android:textColor="@android:color/black"
    android:padding="16dp"
    android:gravity="center"
    android:background="@android:color/white"
    android:elevation="4dp"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    tools:ignore="MissingConstraints" />

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

Java Code:

```
package com.example.dialoguebox;

import android.content.DialogInterface;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

import androidx.activity.EdgeToEdge;
```

```
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;
import java.util.Random;

public class MainActivity extends AppCompatActivity {

    ConstraintLayout layout;
    TextView tv;

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

        layout = findViewById(R.id.main);
        tv = findViewById(R.id.textView);
        AlertDialog.Builder alert = new AlertDialog.Builder(MainActivity.this);

        alert.setMessage("Do you really want to change the background color?");
        alert.setTitle("Alert Box");

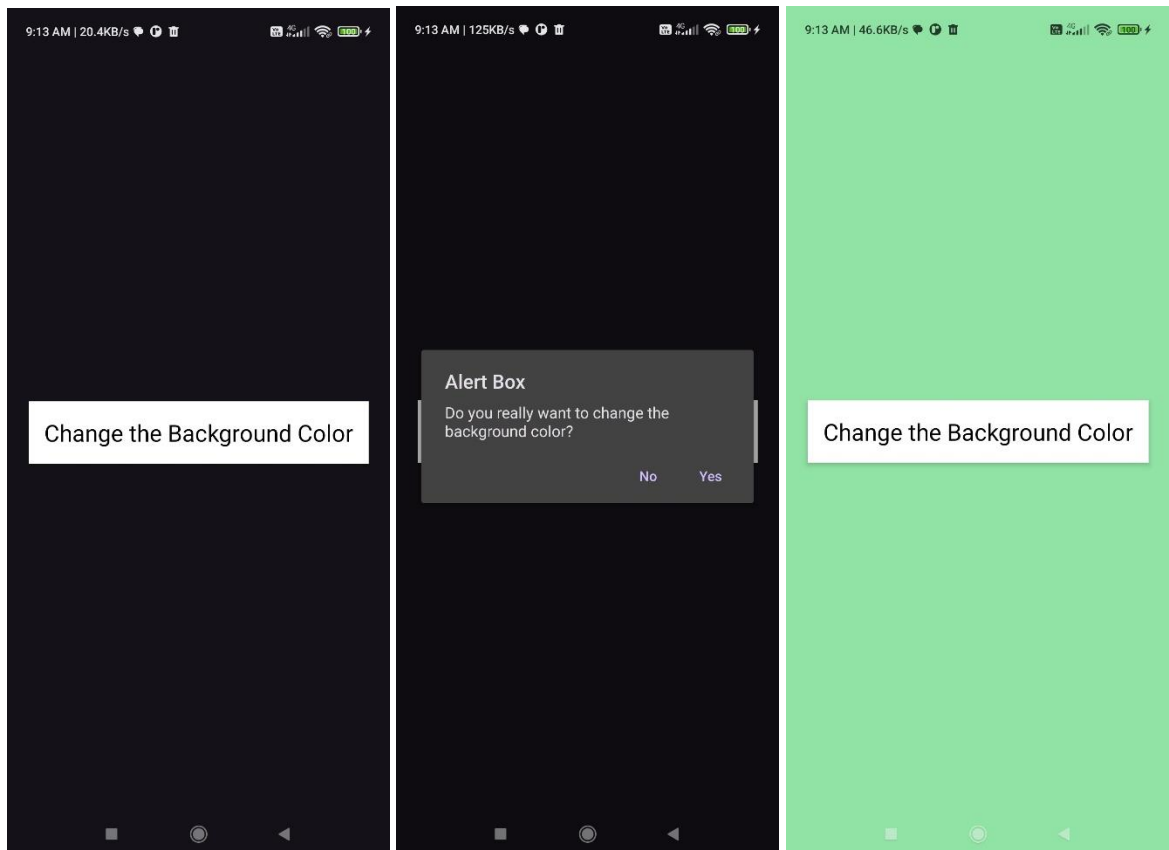
        alert.setPositiveButton("Yes", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Random random = new Random();
                int color =
Color.argb(255,random.nextInt(256),random.nextInt(256),random.nextInt(256));
                layout.setBackgroundColor(color);
            }
        });

        alert.setNegativeButton("No", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                alert.setCancelable(true);
            }
        });

        tv.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                AlertDialog myAlertDialogBox = alert.create();
```

```
        myAlertDialogBox.show();  
    }  
});  
}  
}
```

Sample Output:



Experiment-No: 10

Design an application that captures the image using a camera and set the captured image as the background for your application.

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:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<ImageView
    android:id="@+id/imageView"
    android:layout_width="0dp"
    android:layout_height="0dp"
    android:layout_margin="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintDimensionRatio="1:1"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.937"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.144"
    tools:srcCompat="@tools:sample/avatars" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="16dp"
    android:text="Capture"
    android:textSize="17sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.673" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```
package com.example.camera;

import android.content.Intent;
import android.graphics.Bitmap;
import android.os.Bundle;
import android.provider.MediaStore;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    ImageView myImage;
    Button btn;
    static int capturedImage = 123;

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

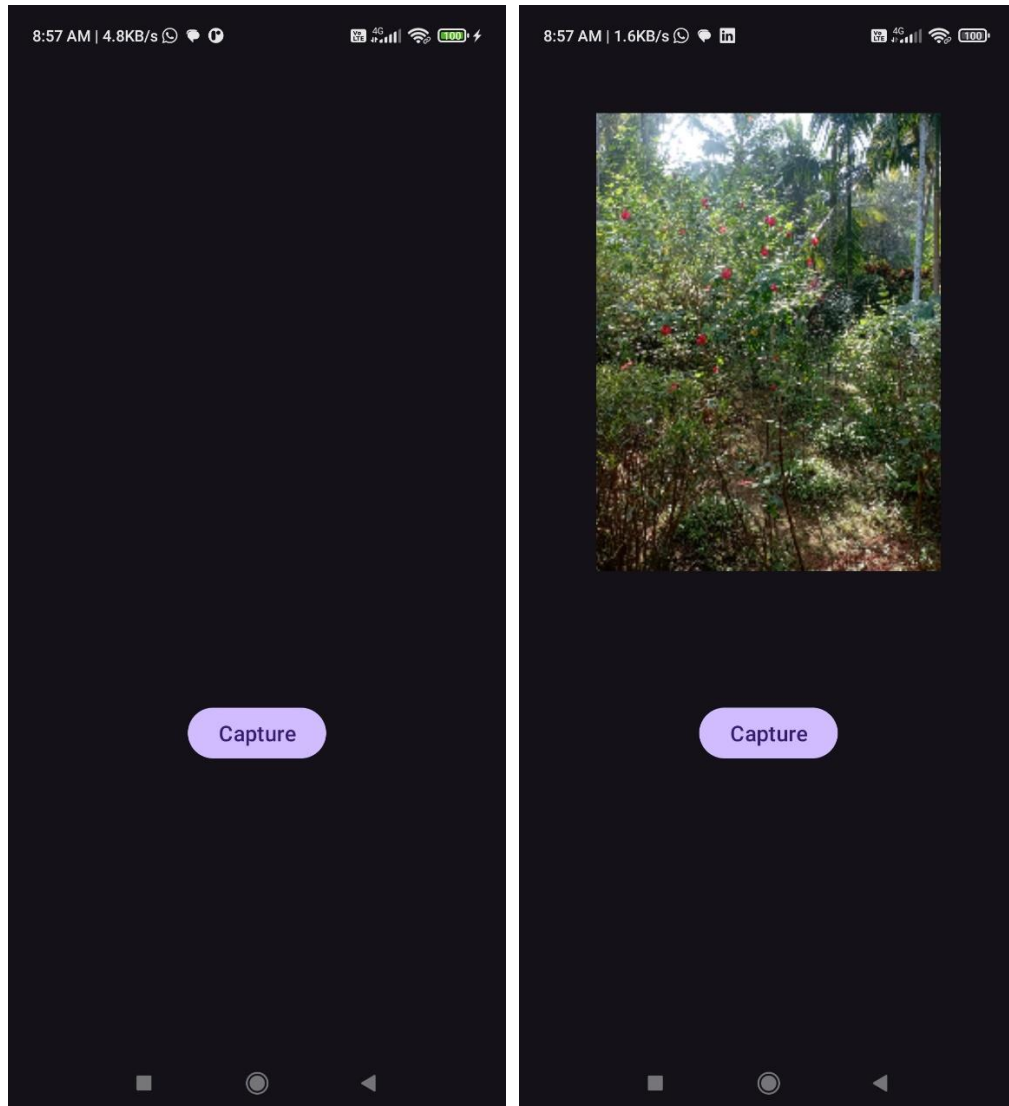
        myImage = findViewById(R.id.imageview);
        btn = findViewById(R.id.button);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(MediaStore.ACTION_IMAGE_CAPTURE);
                startActivityForResult(intent, capturedImage);
            }
        });
    }

    @Override
    protected void onActivityResult(int requestCode, int resultCode, Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        if(requestCode == capturedImage){
            Bitmap img = (Bitmap) data.getExtras().get("data");
```

```
        myImage.setImageBitmap(img);  
    }  
}  
}
```

Sample Output:



PART-B**Experiment-No: 1**

Implement broadcast receiver to carry out the of following:

Read battery charge of your mobile, display it using progress bar and change the background color.

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:id="@+id/main"
    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:background="@android:color/white"
        android:elevation="4dp"
        android:gravity="center"
        android:hint="Battery Level"
        android:padding="16dp"
        android:textColor="@color/black"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

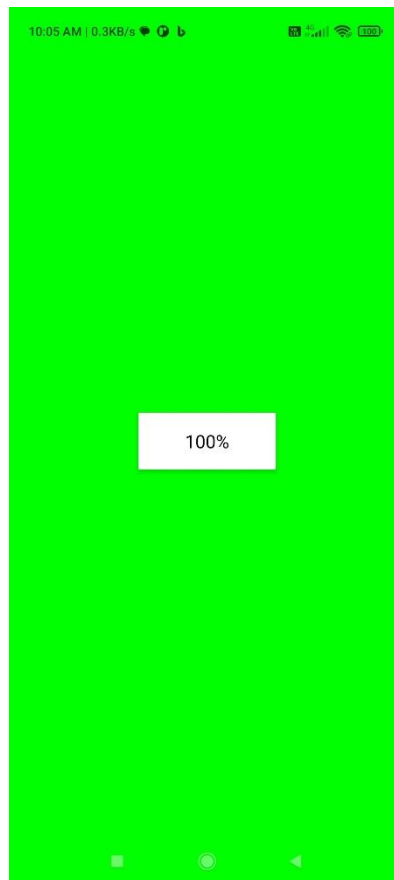
Java Code:

```
package com.example.broadcastreciever;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.graphics.Color;
import android.os.BatteryManager;
import android.os.Bundle;
```



```
import android.widget.TextView;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
    TextView tv;
    ConstraintLayout layout;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) ->
        {
            Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
                systemBars.bottom);
            return insets;
        });
        tv=findViewById(R.id.textview);
        layout=findViewById(R.id.main);
        this.registerReceiver(this.broadcaster,new
            IntentFilter(Intent.ACTION_BATTERY_CHANGED));
    }
    BroadcastReceiver broadcaster=new BroadcastReceiver() {
        @Override
        public void onReceive(Context context, Intent intent) {
            int level= intent.getIntExtra(BatteryManager.EXTRA_LEVEL,0);
            tv.setText(String.valueOf(level)+"%");
            if(level>70){
                layout.setBackgroundColor(Color.GREEN);
            } else if (level<70 && level>=30) {
                layout.setBackgroundColor(Color.YELLOW);
            }
            else{
                layout.setBackgroundColor(Color.RED);
            }
        }
    };
}
```

Sample Output:



Experiment-No: 2

Write an application to insert the data entered by a user into a database and display all the values in database.

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"
xmlns:tools2="http://schemas.android.com/tools"
android:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:padding="16dp"
tools:context=".MainActivity">

<TextView
    android:id="@+id/textView"
    android:layout_width="379dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="64dp"
    android:text="Enter Student Details"
    android:textAlignment="center"
    android:textColor="#8BC34A"
    android:textSize="28sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<EditText
    android:id="@+id/name"
    android:layout_width="379dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="176dp"
    android:background="@android:drawable/editbox_background"
    android:hint="Name"
    android:inputType="textPersonName"
    android:padding="12dp"
    android:textSize="18sp"
    android:textColor="@android:color/black"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

```
<EditText
    android:id="@+id/usn"
    android:layout_width="379dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="18dp"
    android:background="@android:drawable/editbox_background"
    android:hint="USN"
    android:inputType="text"
    android:padding="12dp"
    android:textSize="18sp"
    android:textColor="@android:color/black"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/name" />
```

```
<EditText
    android:id="@+id/sem"
    android:layout_width="379dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="18dp"
    android:background="@android:drawable/editbox_background"
    android:hint="Semester"
    android:inputType="text"
    android:padding="12dp"
    android:textSize="18sp"
    android:textColor="@android:color/black"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/usn" />
```

```
<EditText
    android:id="@+id/branch"
    android:layout_width="379dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="24dp"
    android:background="@android:drawable/editbox_background"
    android:hint="Branch"
    android:inputType="text"
    android:padding="12dp"
    android:textSize="18sp"
    android:textColor="@android:color/black"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
```

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

```
<EditText
    android:id="@+id/phone"
    android:layout_width="379dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="23dp"
    android:background="@android:drawable/editbox_background"
    android:hint="Phone Number"
    android:inputType="phone"
    android:padding="12dp"
    android:textSize="18sp"
    android:textColor="@android:color/black"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/branch" />
```

```
<Button
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="57dp"
    android:backgroundTint="#8BC34A"
    android:padding="12dp"
    android:text="Submit"
    android:textColor="@android:color/white"
    android:textSize="18sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/phone" />
```

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

Java Code:

MainActivity.java

```
package com.example.database;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
```

```

import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
    EditText name,usn,sem,branch,ph_no;
    Button btn;
    MyDatabaseOperations myDatabaseOperations;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) ->
        {
            Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
                systemBars.bottom);
            return insets;
        });
        name = findViewById(R.id.name);
        usn = findViewById(R.id.usn);
        sem = findViewById(R.id.sem);
        branch = findViewById(R.id.branch);
        ph_no = findViewById(R.id.phone);
        btn = findViewById(R.id.submit);
        myDatabaseOperations = new MyDatabaseOperations(this,"MyDatabase.db",null,1);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                boolean submission = false;
                String st_name = name.getText().toString();
                String st_usn = usn.getText().toString();
                int st_sem = Integer.parseInt(sem.getText().toString());
                String st_branch = branch.getText().toString();
                String st_ph_no = ph_no.getText().toString();
                submission =

myDatabaseOperations.dataInsert(st_name,st_usn,st_sem,st_branch,st_ph_no);
                if(submission){
                    Toast.makeText(MainActivity.this, "Data Entry Successful",
                        Toast.LENGTH_SHORT).show();
                }
                else{

```

```

        Toast.makeText(MainActivity.this, "Data Entry Failed",
            Toast.LENGTH_SHORT).show();
    }
}
});
}
}

```

MyDatabaseOperations.java

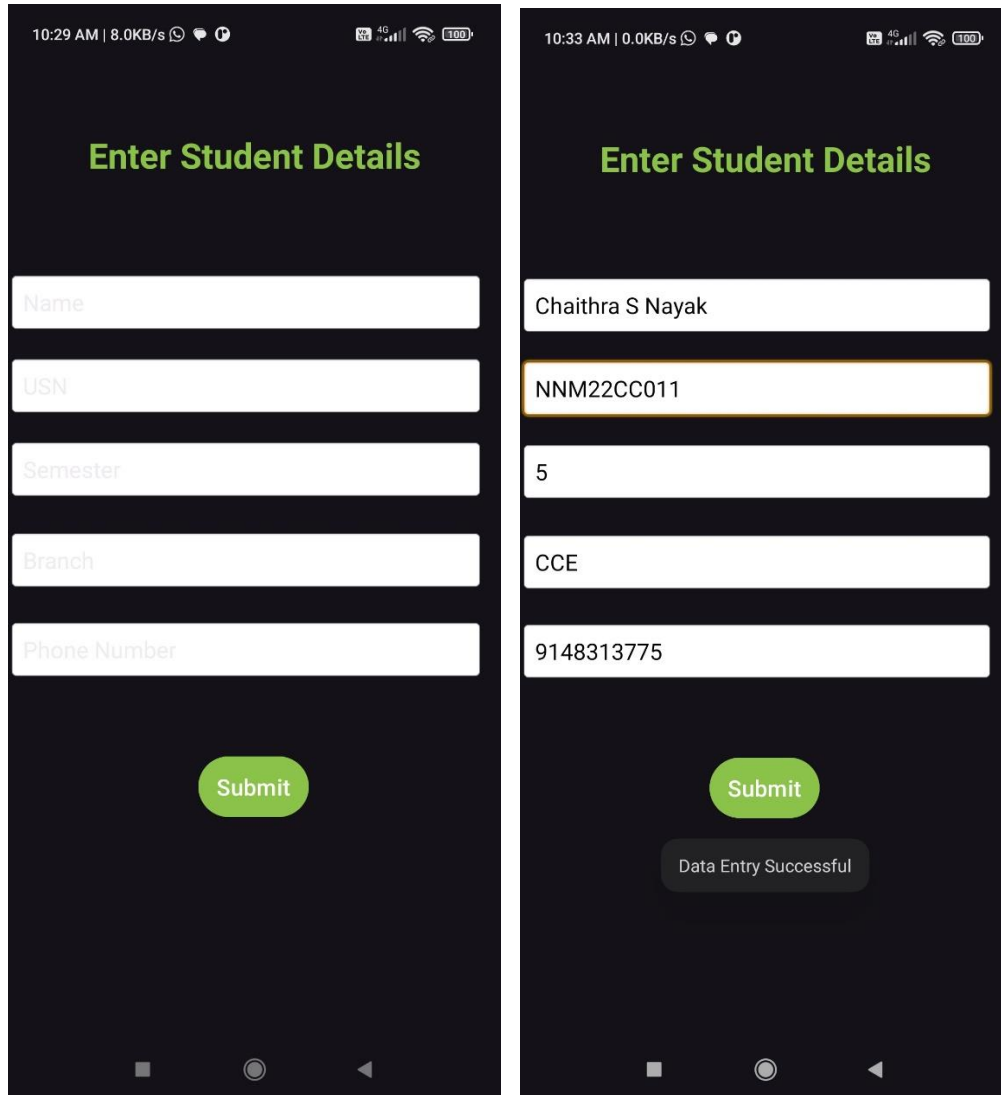
```

package com.example.database;
import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.widget.EditText;
import androidx.annotation.Nullable;
public class MyDatabaseOperations extends SQLiteOpenHelper {
    public MyDatabaseOperations(@Nullable Context context, @Nullable String name,
        @Nullable SQLiteDatabase.CursorFactory factory, int version) {
        super(context, name, factory, version);
    }
    @Override
    public void onCreate(SQLiteDatabase sqLiteDatabase) {
        sqLiteDatabase.execSQL("CREATE TABLE StudentInformation(NAME TEXT,USN TEXT
PRIMARY KEY,Sem INTEGER,Branch TEXT,PhoneNumber TEXT)");
    }
    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {
    }
    public boolean dataInsert(String s_name,String s_usn,int s_sem, String s_branch,String
s_ph_no){
        SQLiteDatabase myDb = getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put("NAME",s_name);
        cv.put("USN",s_usn);
        cv.put("Sem",s_sem);
        cv.put("Branch",s_branch);
        cv.put("PhoneNumber",s_ph_no);
        long result = myDb.insert("StudentInformation",null,cv);
        if(result == -1)
            return false;
        else
            return true;
    }
}

```

```
}  
}
```

Sample Output:



App Inspection

Xiaomi 21061119BI > com.example.database

Database Inspector Network Inspector Background Task Inspector

Databases

MyDatabase.db

StudentInformation

	NAME	USN	Sem	Branch	PhoneNumber
1	Chaithra S Nayak	NNM22CC011	5	CCE	9148313775