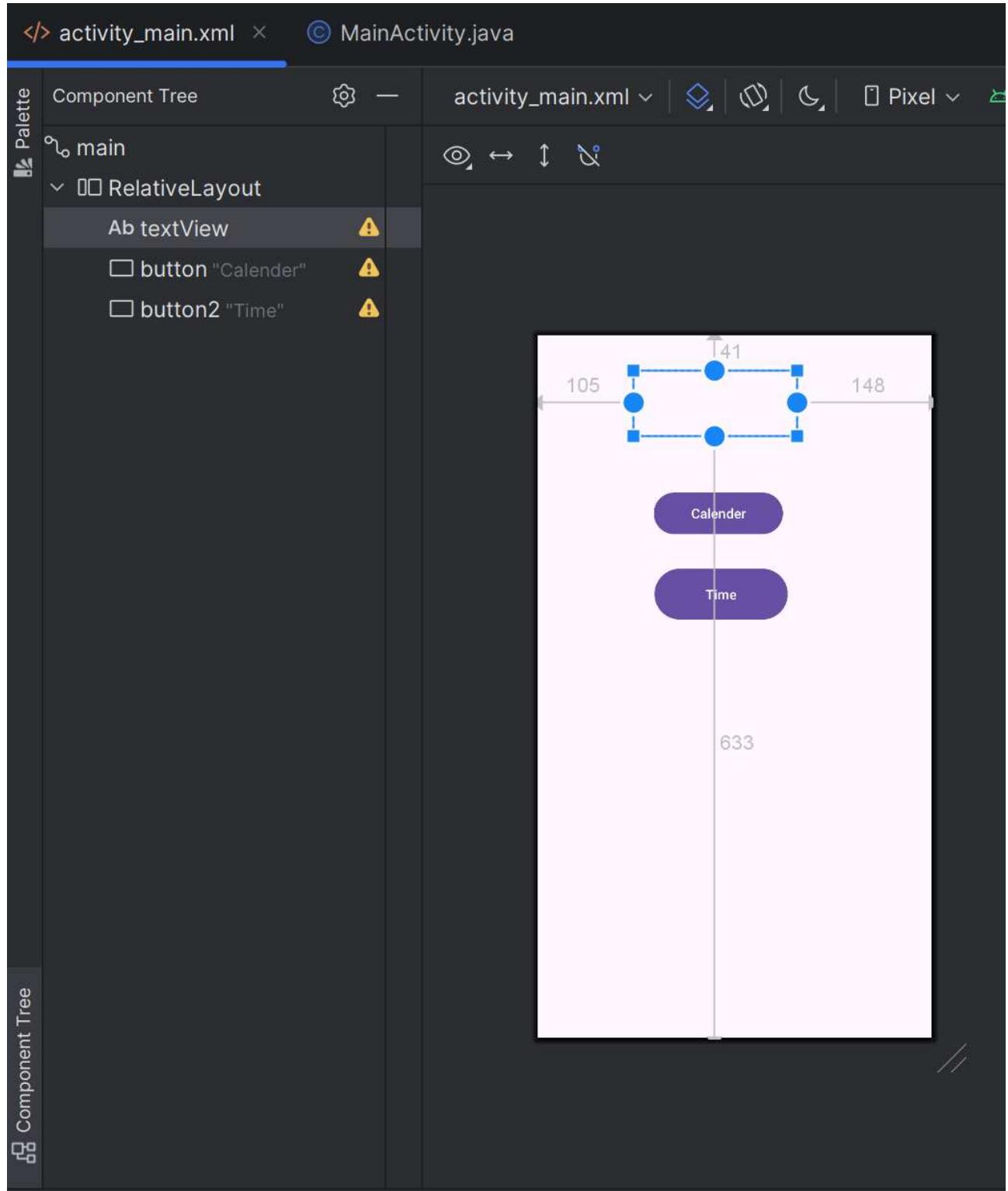


# Android Programming Assignment 3

SET A :-

**Q1) Create an Android Application that demonstrates DatePickerDialog and TimePickerDialog**

UI Design :



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"
    android:orientation="vertical"
    tools:context=".MainActivity" >

    <RelativeLayout
        android:layout_width="422dp"
        android:layout_height="743dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <TextView
            android:id="@+id/textView"
            android:layout_width="169dp"
            android:layout_height="69dp"
            android:layout_alignParentStart="true"
            android:layout_alignParentTop="true"
            android:layout_alignParentEnd="true"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="105dp"
            android:layout_marginTop="41dp"
            android:layout_marginEnd="148dp"
            android:layout_marginBottom="633dp"
            android:text=""
            android:textSize="24dp" />

        <Button
            android:id="@+id/button"
            android:layout_width="135dp"
            android:layout_height="wrap_content"
            android:layout_alignParentStart="true"
            android:layout_alignParentTop="true"
            android:layout_alignParentEnd="true"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="126dp"
```

```
        android:layout_marginTop="165dp"
        android:layout_marginEnd="161dp"
        android:layout_marginBottom="527dp"
        android:text="Calender" />

<Button
    android:id="@+id/button2"
    android:layout_width="139dp"
    android:layout_height="61dp"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="127dp"
    android:layout_marginTop="244dp"
    android:layout_marginEnd="156dp"
    android:layout_marginBottom="438dp"
    android:text="Time" />
</RelativeLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Code :

```
package com.example.project1;

import android.app.DatePickerDialog; import android.app.TimePickerDialog;
import android.os.Bundle; import android.view.View;
import android.widget.Button; import android.widget.DatePicker;
import android.widget.TextView; import android.widget.TimePicker;
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; import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    TextView t1;
    Button b,b1;

    Calendar c;

    DatePickerDialog dp;

    TimePickerDialog tp;

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

        t1 = findViewById(R.id.textView);
        b = findViewById(R.id.button);
        b1 = findViewById(R.id.button2);
```

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

        c = Calendar.getInstance();
        int dd = c.get(Calendar.DAY_OF_MONTH);
        int mm = c.get(Calendar.MONTH);
        int yy = c.get(Calendar.YEAR);

        dp = new DatePickerDialog(MainActivity.this, new
DatePickerDialog.OnDateSetListener() {
            @Override
            public void onDateSet(DatePicker view, int year, int month, int
dayOfMonth) {
                t1.setText(year+"/"+(month+1)+"/"+dayOfMonth);

            }
        },yy,mm,dd);
        dp.show();

    }
});

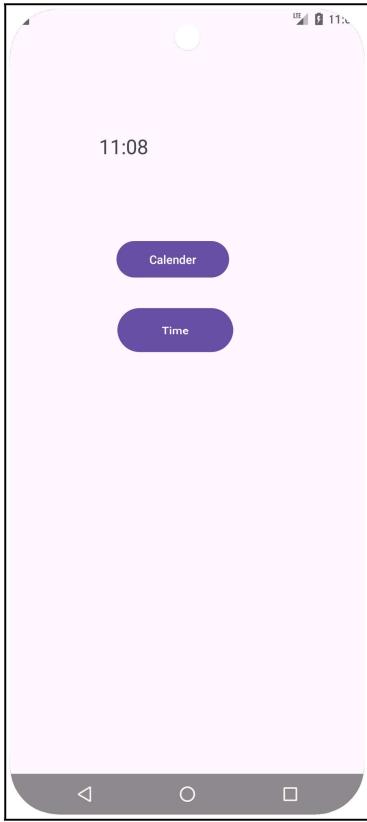
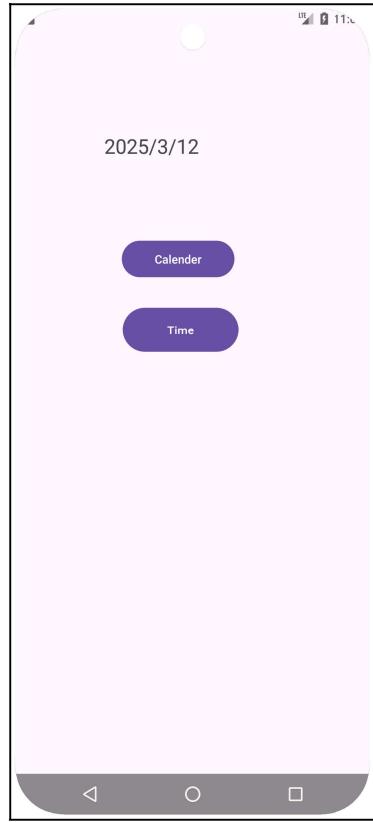
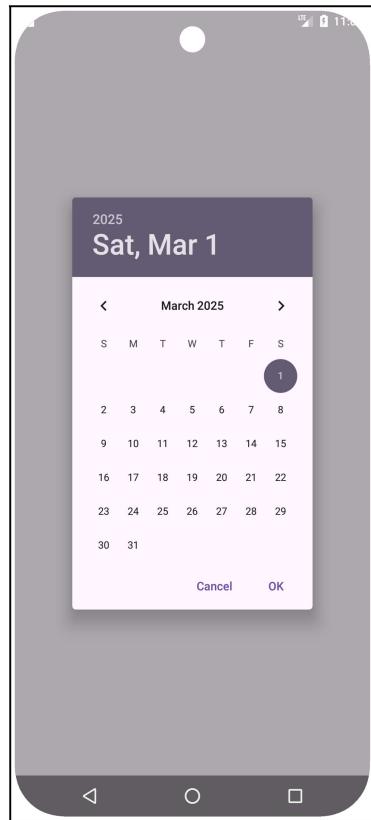
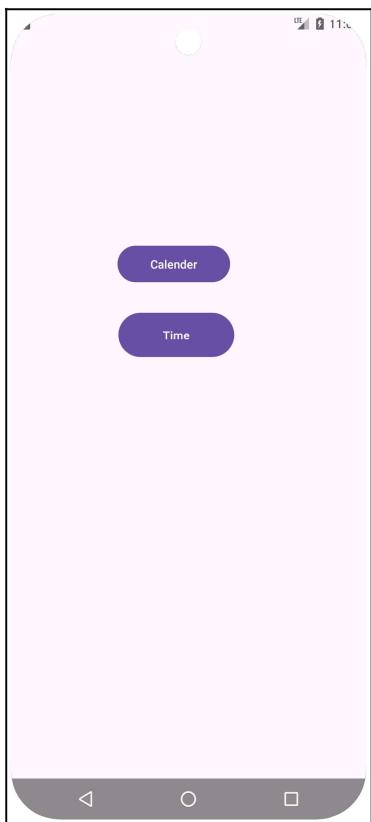
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        c = Calendar.getInstance();
        int hh = c.get(Calendar.HOUR);
        int mi = c.get(Calendar.MINUTE);
        int ss = c.get(Calendar.SECOND);

        tp = new TimePickerDialog(MainActivity.this, new
TimePickerDialog.OnTimeSetListener() {
            @Override
            public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
                t1.setText(String.format("%02d:%02d",hourOfDay,minute,ss));
            }
        },hh,mi,true);
        tp.show();

    }
});

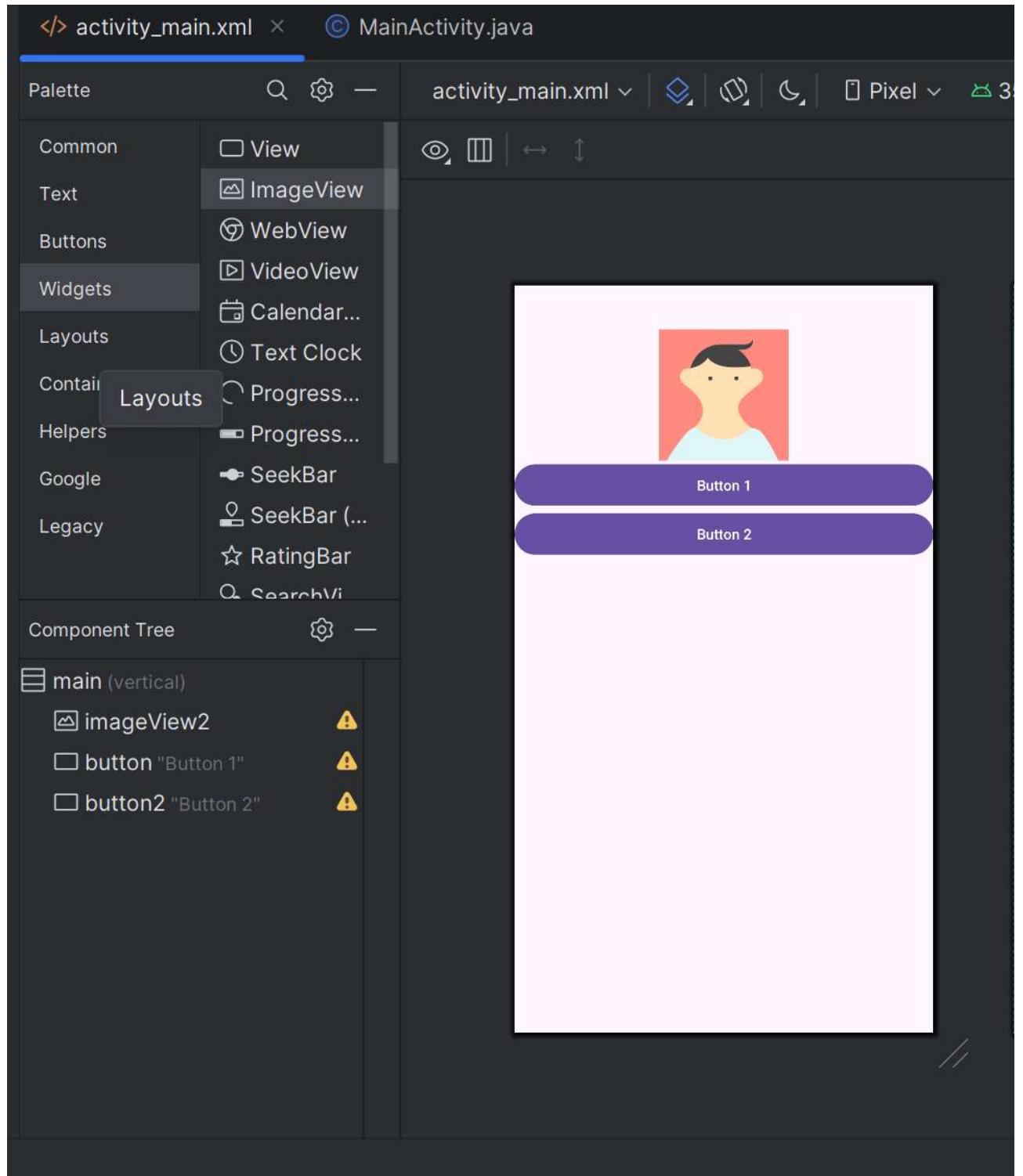
}
```

## Output :



## Q2) Create an Android Application to change the image on the Screen

UI Design :



XML :

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingTop="43dp"
    android:orientation="vertical"
    tools:context=".MainActivity" >

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        tools:srcCompat="@tools:sample/avatars" />

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button 1" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button 2" />
</LinearLayout>
```

Code :

```
package com.example.projectas;

import android.os.Bundle; import android.view.View;
import android.widget.Button; import android.widget.ImageView;
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 {

    ImageView im;
    Button b1,b2;

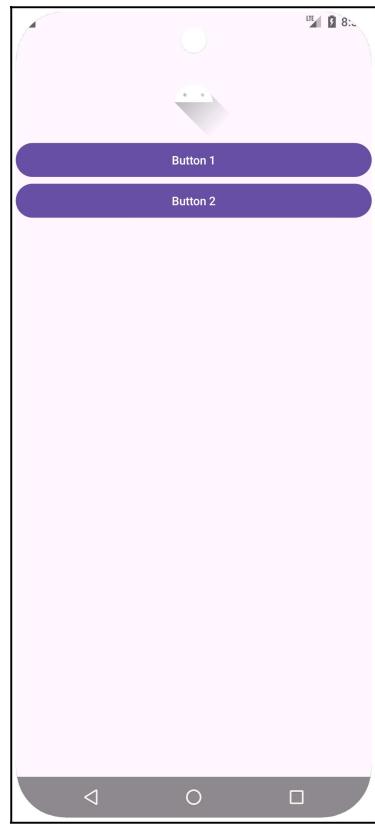
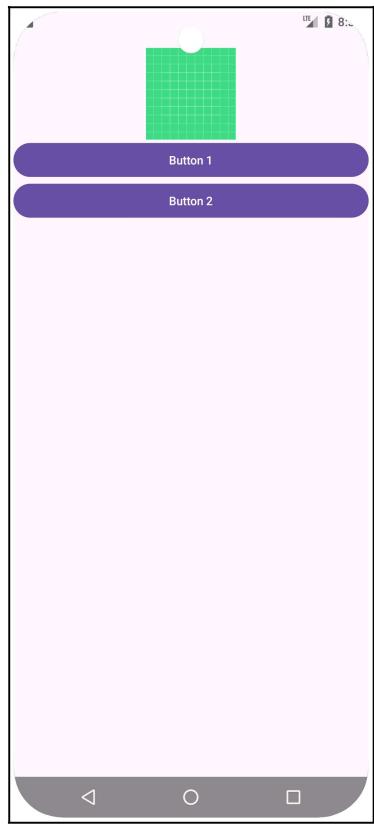
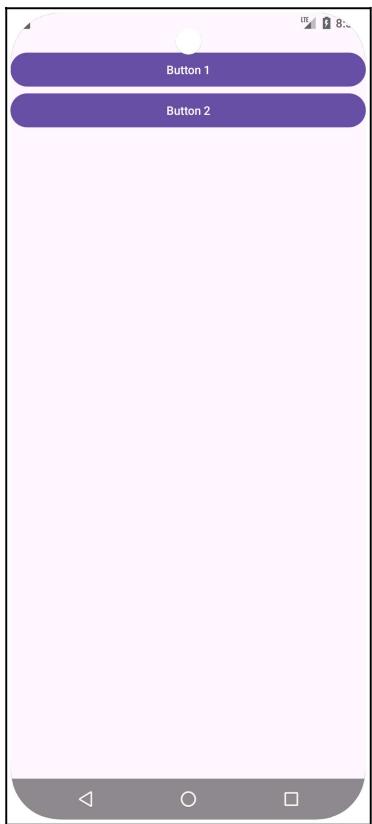
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        im = findViewById(R.id.imageView2);
        b1 = findViewById(R.id.button);
        b2 = findViewById(R.id.button2);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                im.setImageResource(R.drawable.ic_launcher_background);
            }
        });

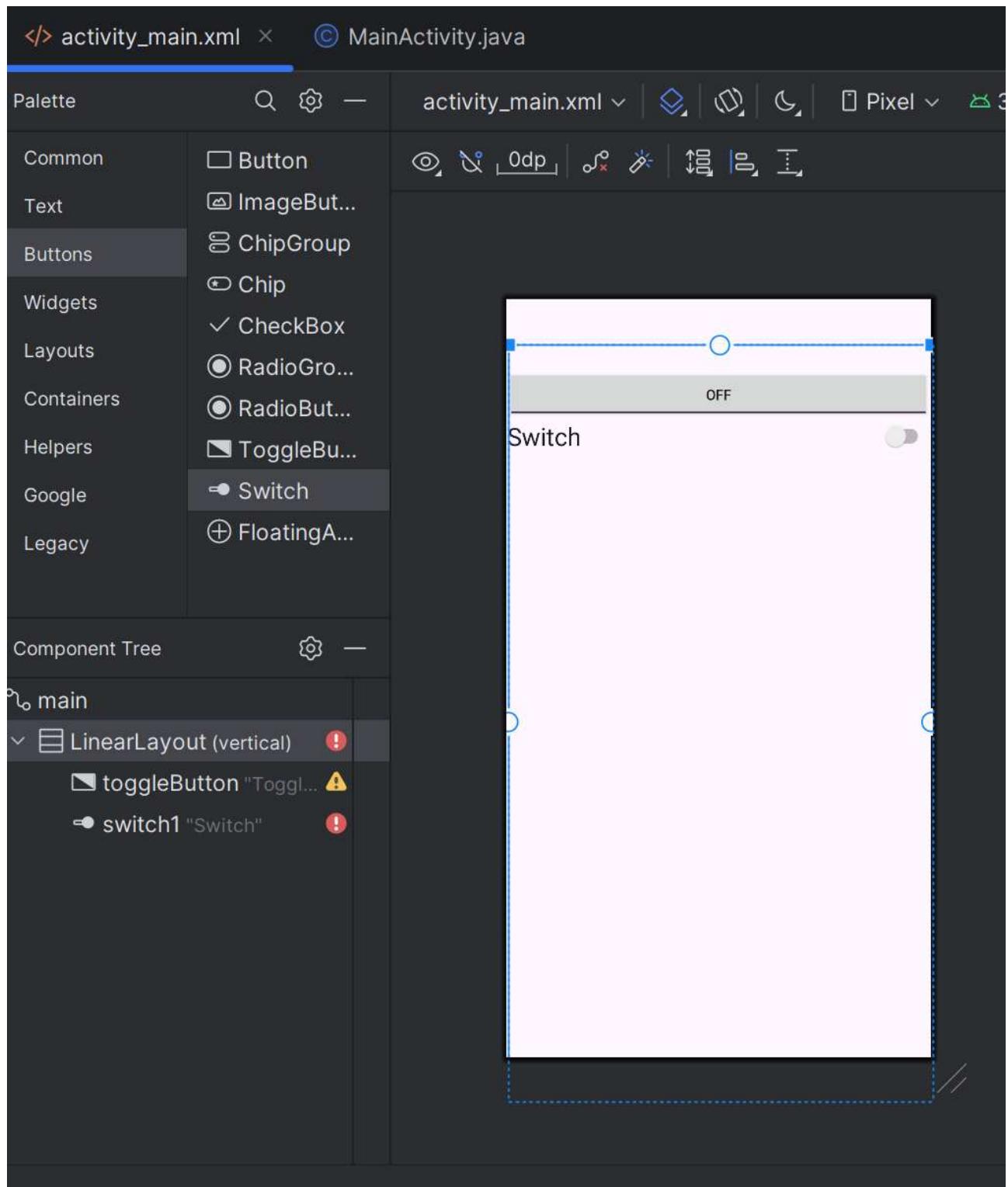
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                im.setImageResource(R.drawable.ic_launcher_foreground);
            }
        });
    }
}
```

## Output



### Q3) Create an Android Application that demonstrate Switch and Toggle Button

UI Design :



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"
    android:orientation="vertical"
    android:paddingTop="43dp"
    tools:context=".MainActivity" >

    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="729dp"
        android:orientation="vertical"
        android:paddingTop="24dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <ToggleButton
            android:id="@+id/toggleButton"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="ToggleButton" />

        <Switch
            android:id="@+id/switch1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textSize="24dp"
            android:text="Switch" />

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

Code :

```
package com.example.projectas;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.Toast;
import android.widget.ToggleButton;

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 {

    Switch s;
    ToggleButton t;

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

        s = findViewById(R.id.switch1);
        t = findViewById(R.id.toggleButton);

        s.setOnCheckedChangeListener(new
        CompoundButton.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton buttonView, boolean
            isChecked) {

                if (isChecked){
                    Toast.makeText(MainActivity.this, "Wifi is On",
                    Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

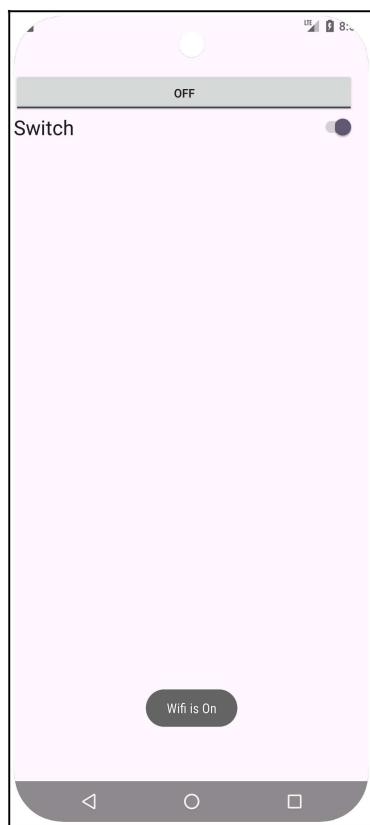
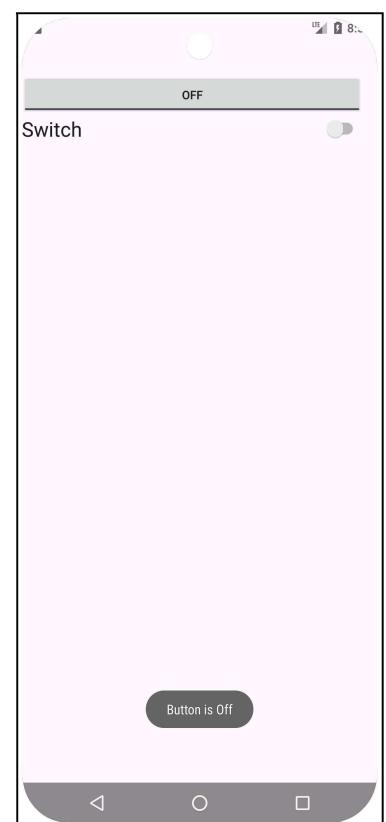
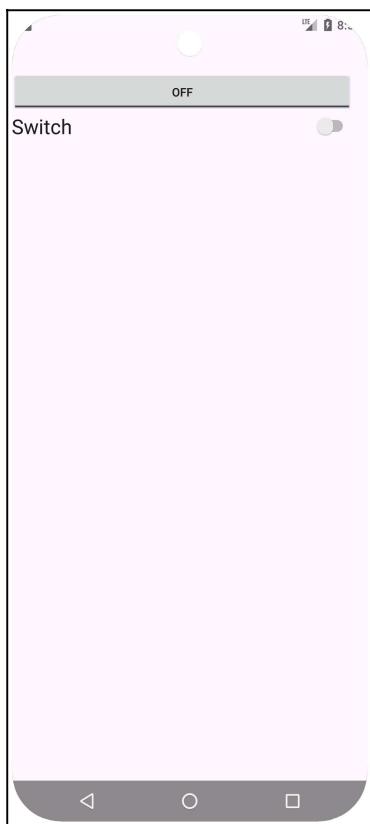
```
        else {
            Toast.makeText(MainActivity.this, "Wifi is Off",
Toast.LENGTH_SHORT).show();
        }

    });

t.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton buttonView, boolean
isChecked) {
        if (isChecked){
            Toast.makeText(MainActivity.this, "Button is On ",
Toast.LENGTH_SHORT).show();
        }
        else {
            Toast.makeText(MainActivity.this, "Button is Off",
Toast.LENGTH_SHORT).show();
        }
    }

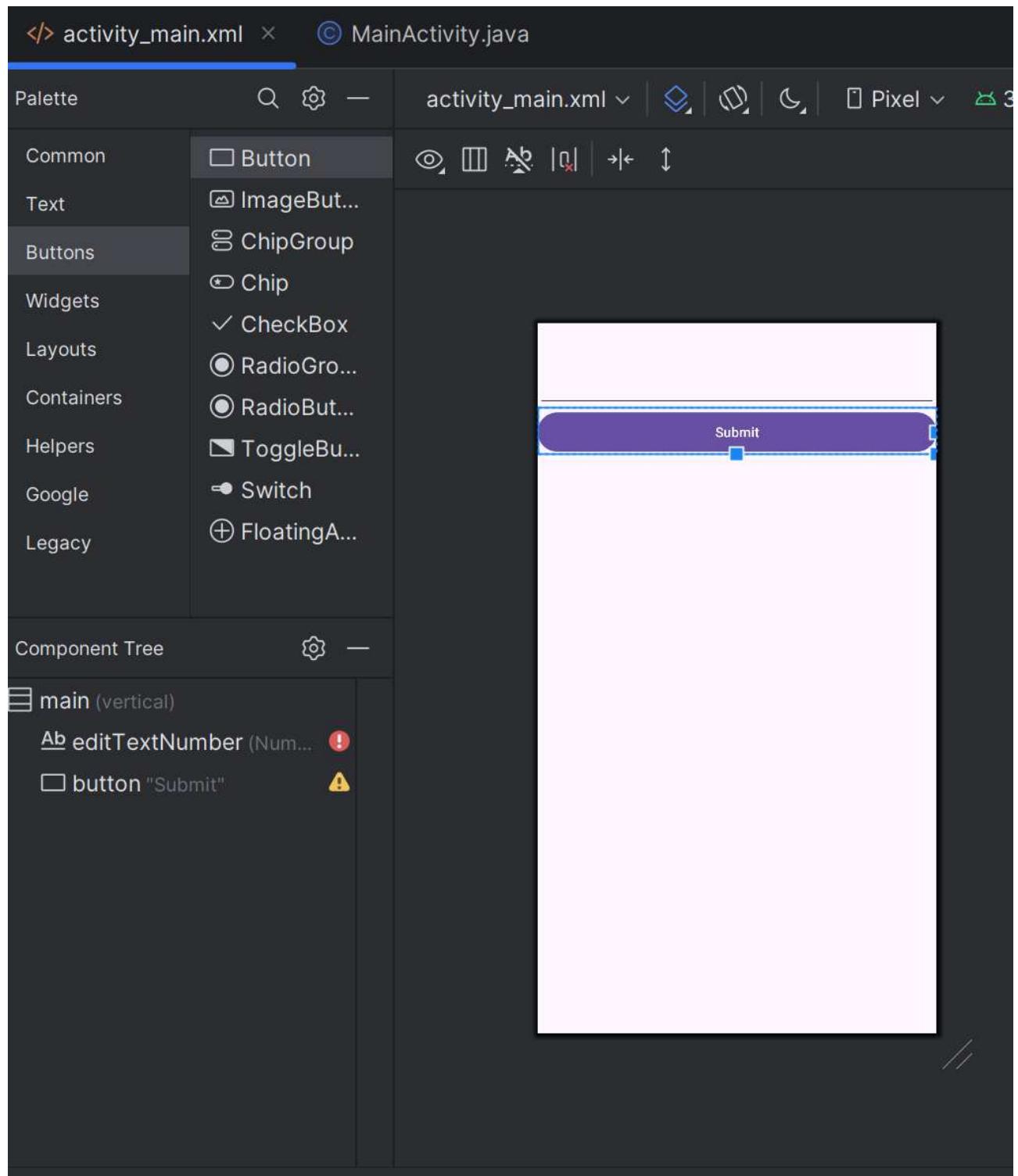
}
});
```

## Output



**Q4) Create an Android application that accept that accept number from user to find factorial and display result on AlertDialog Box**

UI Design :



Code :

```
package com.example.projectas;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
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 number;
    Button submit;

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

        number = findViewById(R.id.editTextNumber);
        submit = findViewById(R.id.button);
    }
}
```

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

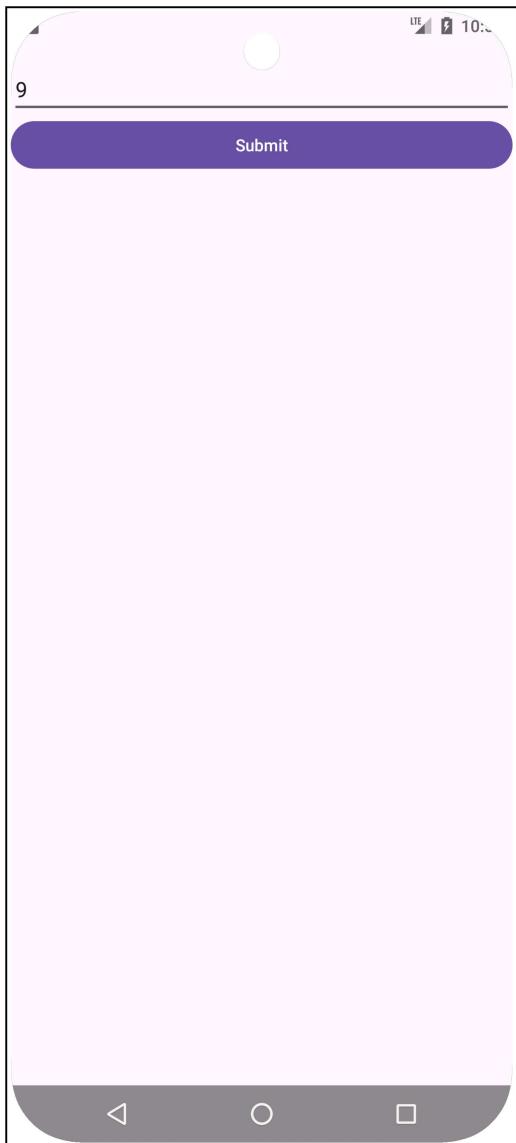
        int n = Integer.parseInt(number.getText().toString());
        int fact = 1;
        for (int i = 1;i<=n;i++){
            fact = fact*i;
        }
        AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
        ad.setTitle("Factorial");
        ad.setMessage("Factorial is: "+fact);
        ad.setIcon(R.drawable.ic_launcher_background);

        ad.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.cancel();
            }
        });

        ad.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
            }
        });

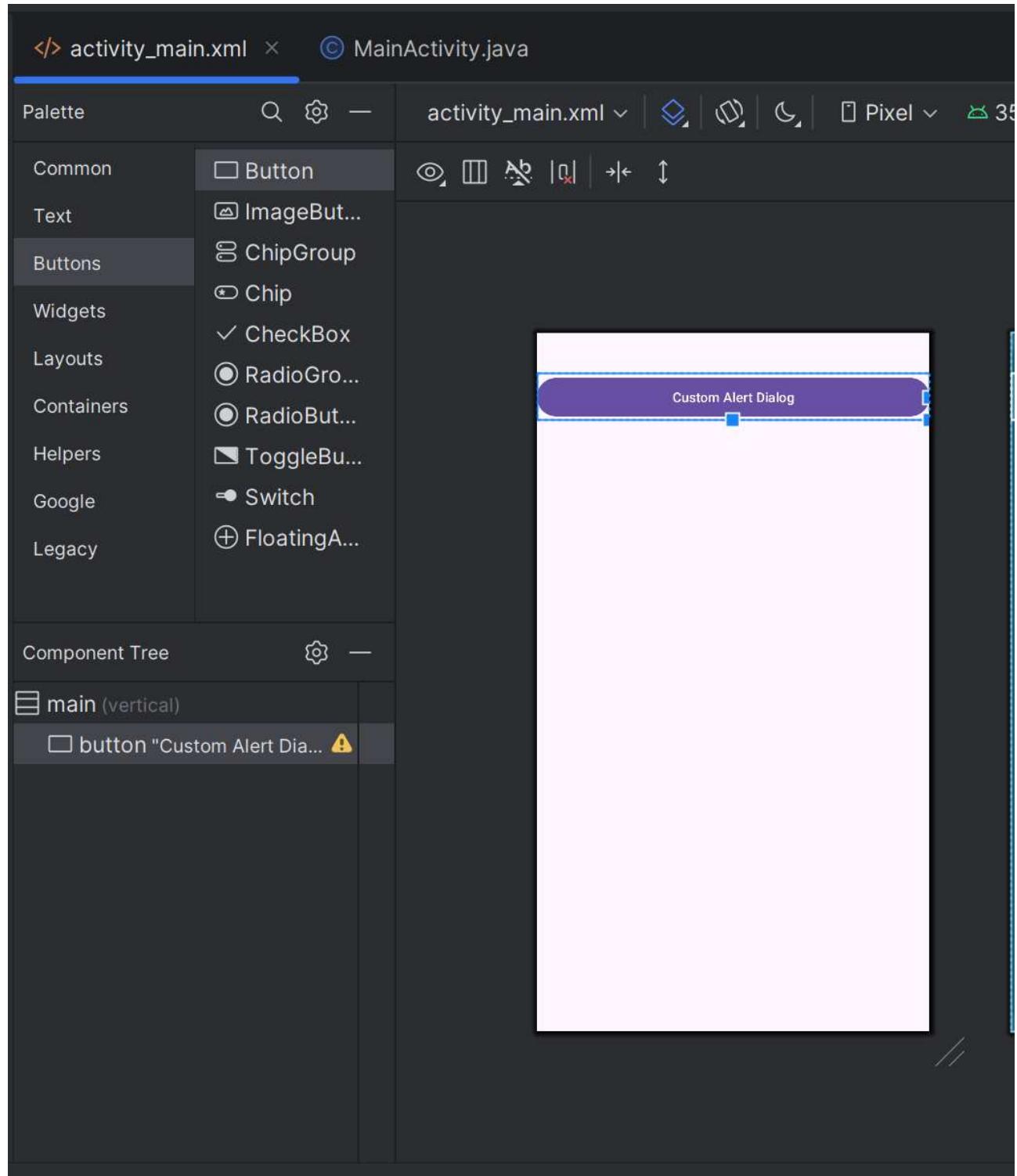
        ad.show();
    }
});
```

## Output :



**Q5) Create an Android application that creates a Custom Alert Dialog containing Friends name and on click of Friend name Button greet accordingly**

UI Design :



Code :

```
package com.example.projectas;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
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 {

    Button submit;

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

        submit = findViewById(R.id.button);
    }
}
```

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

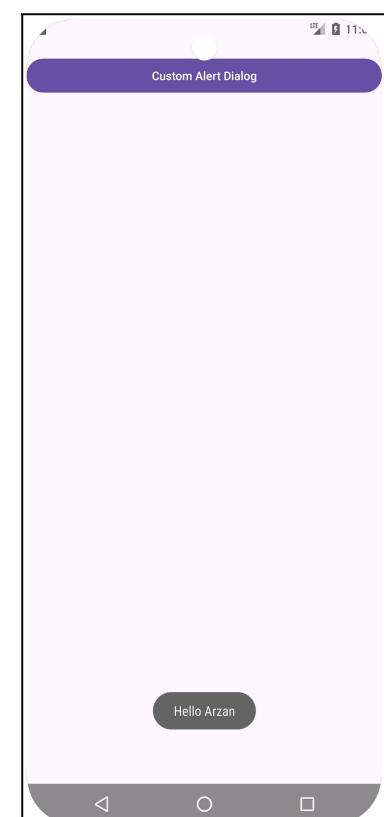
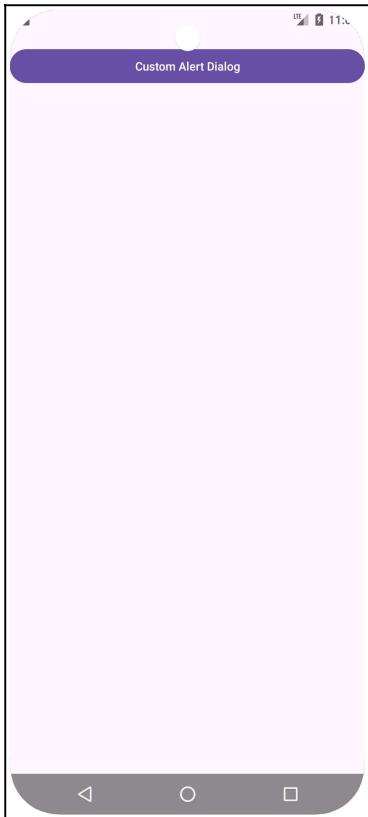
        AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
        ad.setTitle("Greeting");
        ad.setMessage("Choose your name");
        ad.setPositiveButton("Abrar", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                Toast.makeText(MainActivity.this, "Hello Abrar",
Toast.LENGTH_SHORT).show();

            }
        });

        ad.setNegativeButton("Arzan", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                Toast.makeText(MainActivity.this, "Hello Arzan",
Toast.LENGTH_SHORT).show();
            }
        });

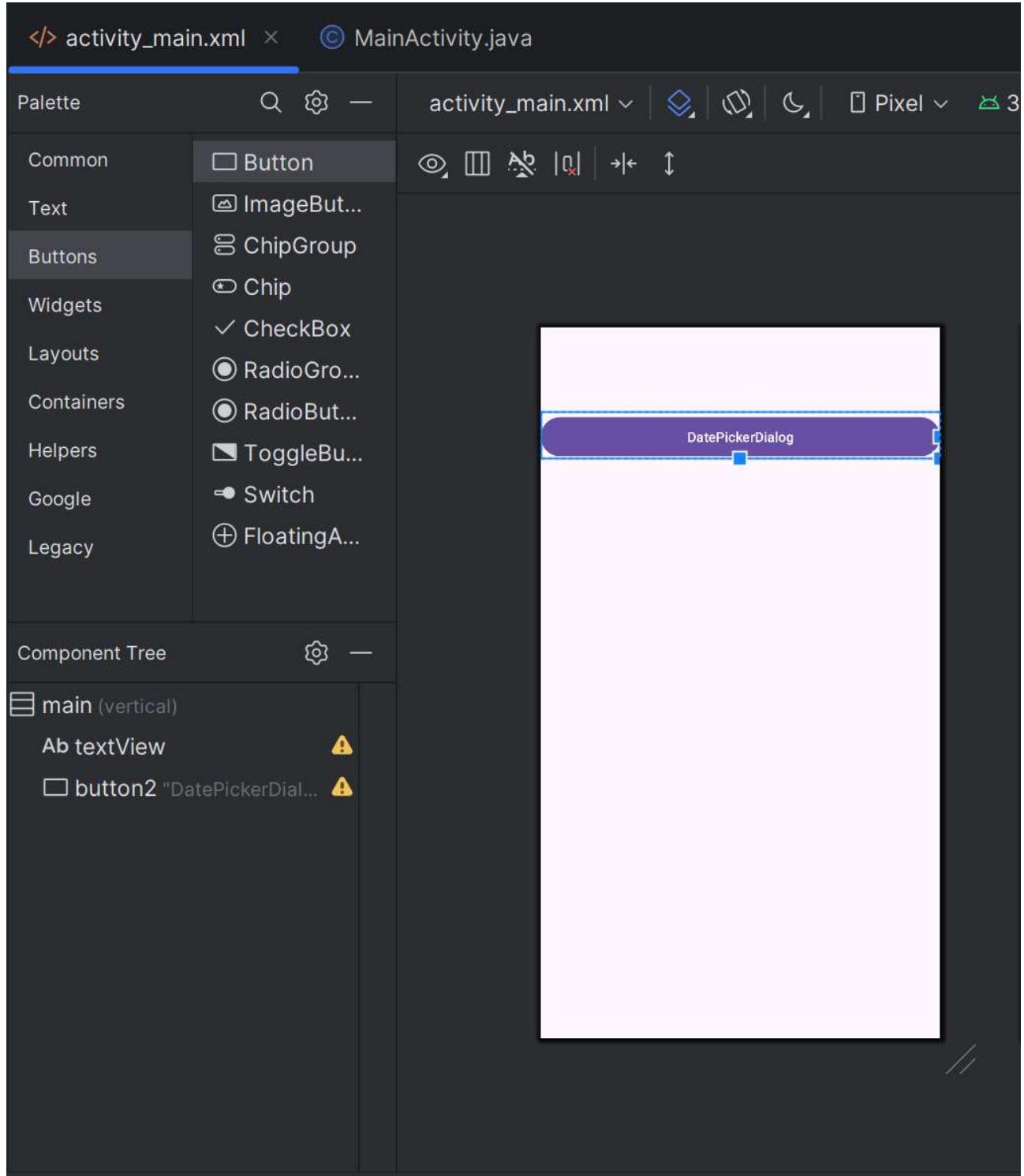
        ad.show();
    }
});
```

## Output



## Q6) Create an Android Application that demonstrate DatePickerDialog

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    TextView t1;
    Button b ;
    Calendar c;
    DatePickerDialog dp;

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

        t1 = findViewById(R.id.textView);
        b = findViewById(R.id.button2);
    }
}
```

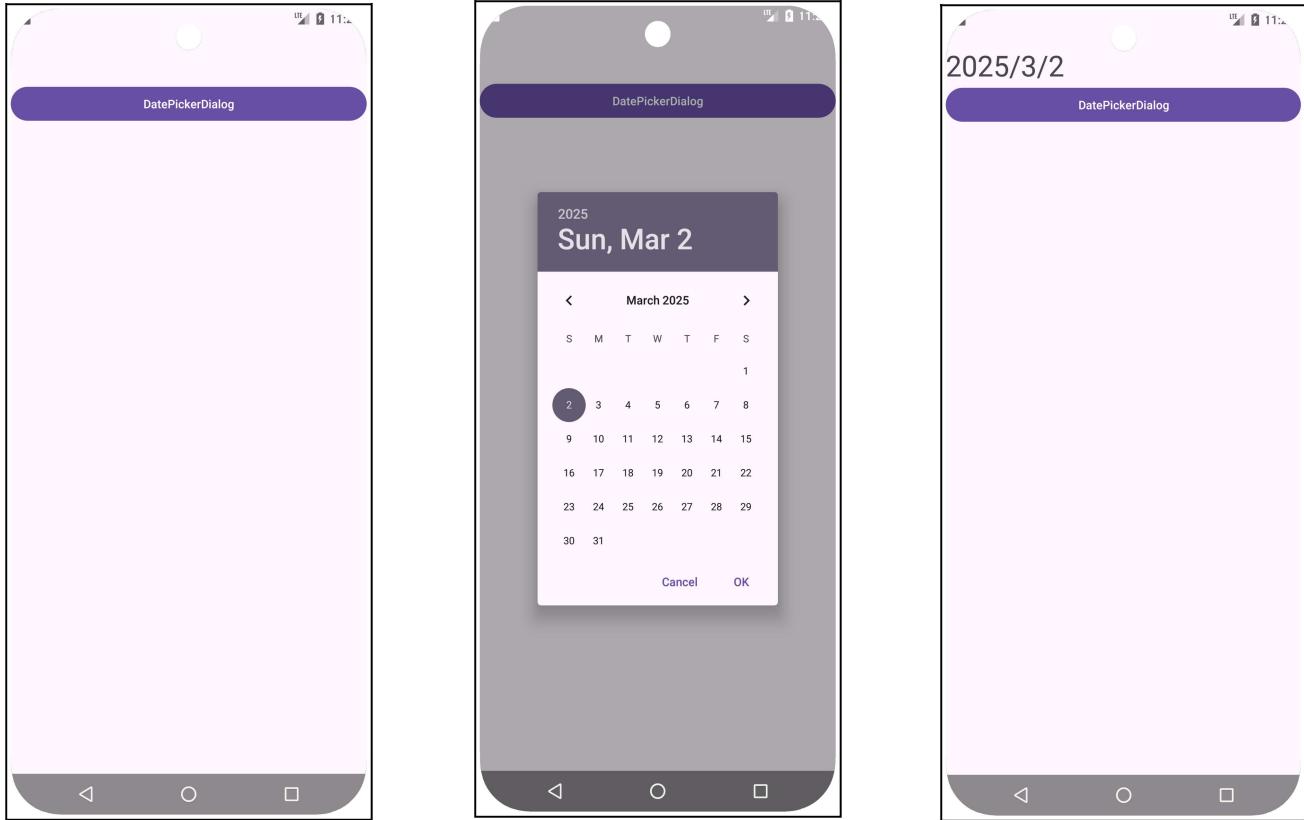
```
b.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        c = Calendar.getInstance();
        int dd = c.get(Calendar.DAY_OF_MONTH);
        int mm = c.get(Calendar.MONTH);
        int yy = c.get(Calendar.YEAR);

        dp = new DatePickerDialog(MainActivity.this, new
DatePickerDialog.OnDateSetListener() {
            @Override
            public void onDateSet(DatePicker view, int year, int month, int
dayOfMonth) {
                t1.setText(year+"/"+(month+1)+"/"+dayOfMonth);
            }
        },yy,mm,dd);
        dp.show();

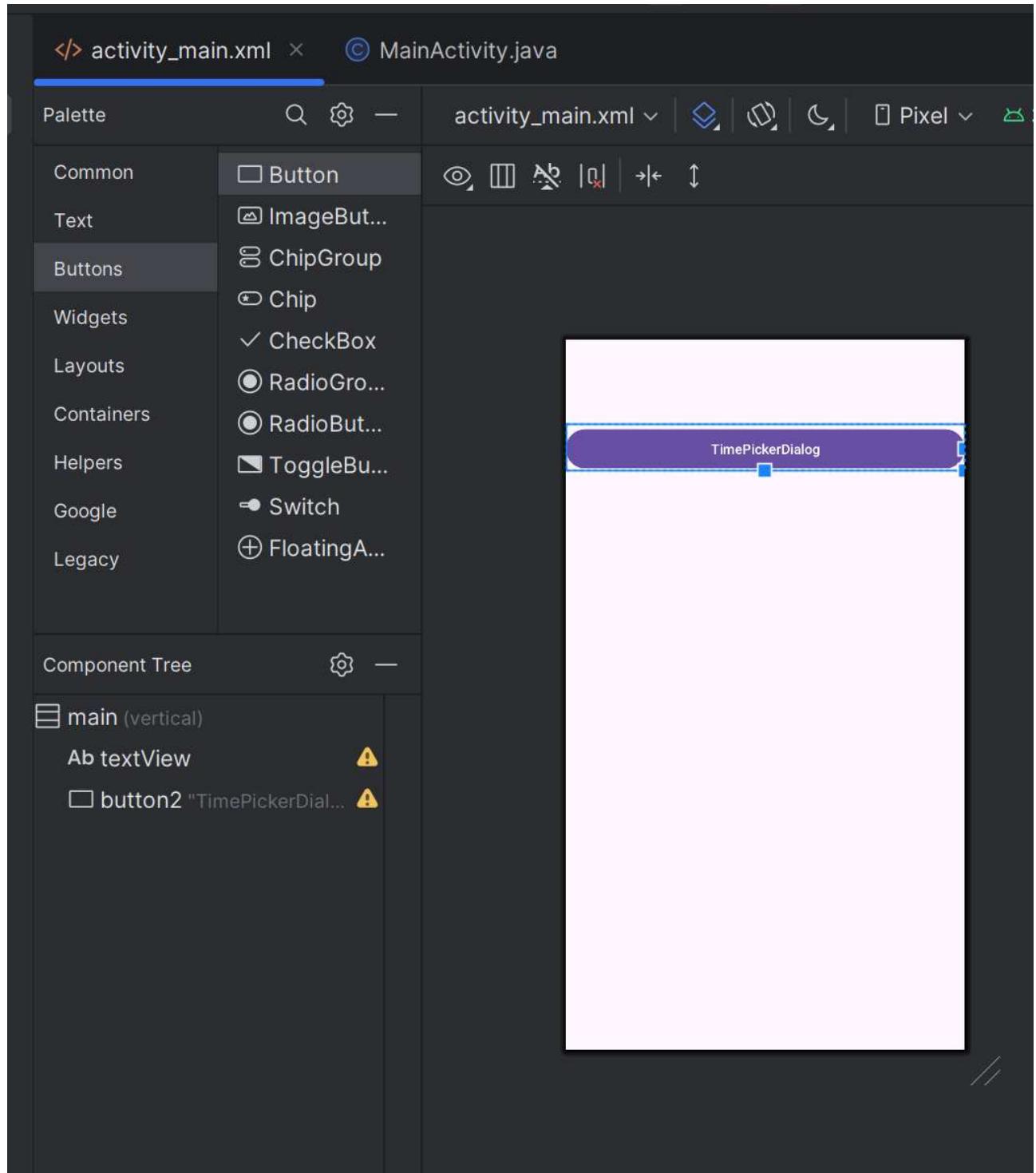
    }
});
```

## Output



## Q7) Create an Android Application that demonstrate TimePickerDialog

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

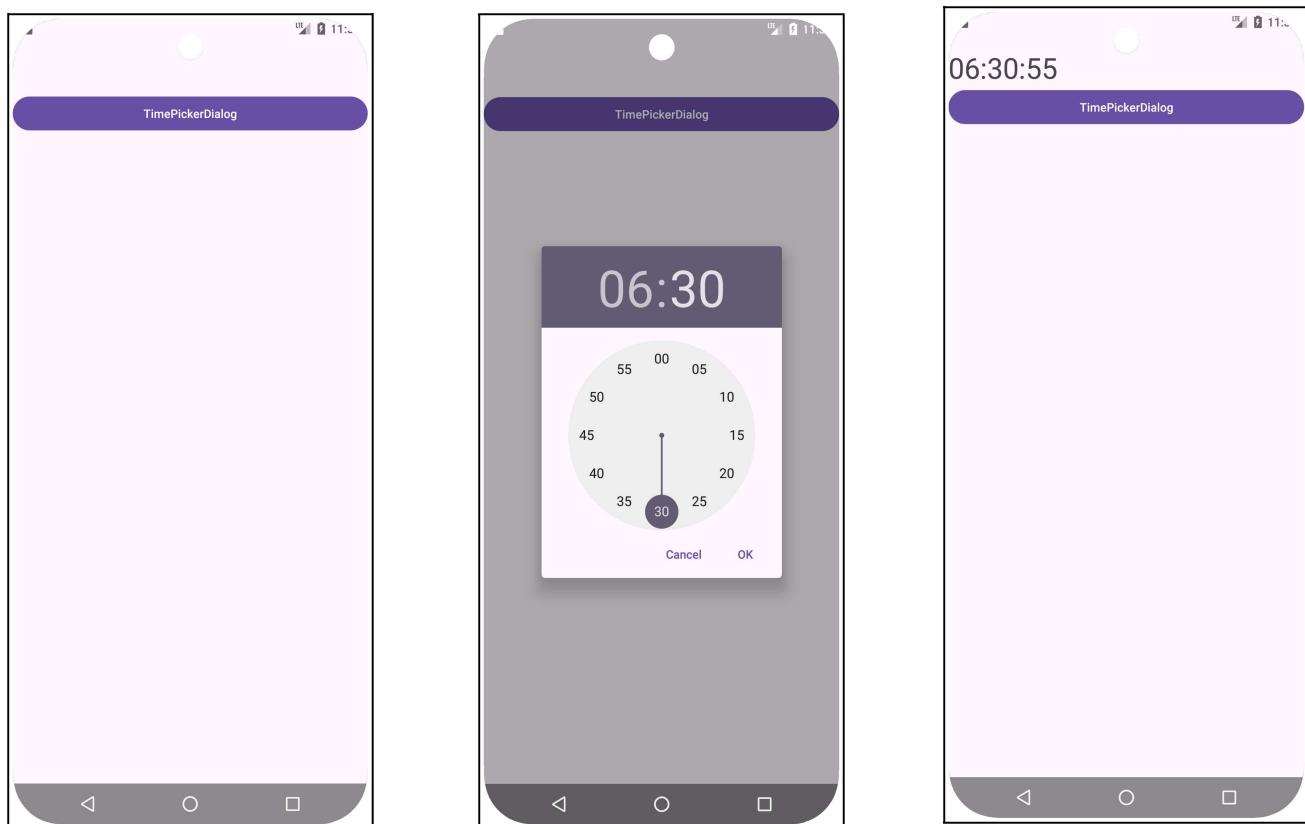
    TextView t1;
    Button b ;
    Calendar c;
    TimePickerDialog tp;

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

        t1 = findViewById(R.id.textView);
        b = findViewById(R.id.button2);
```

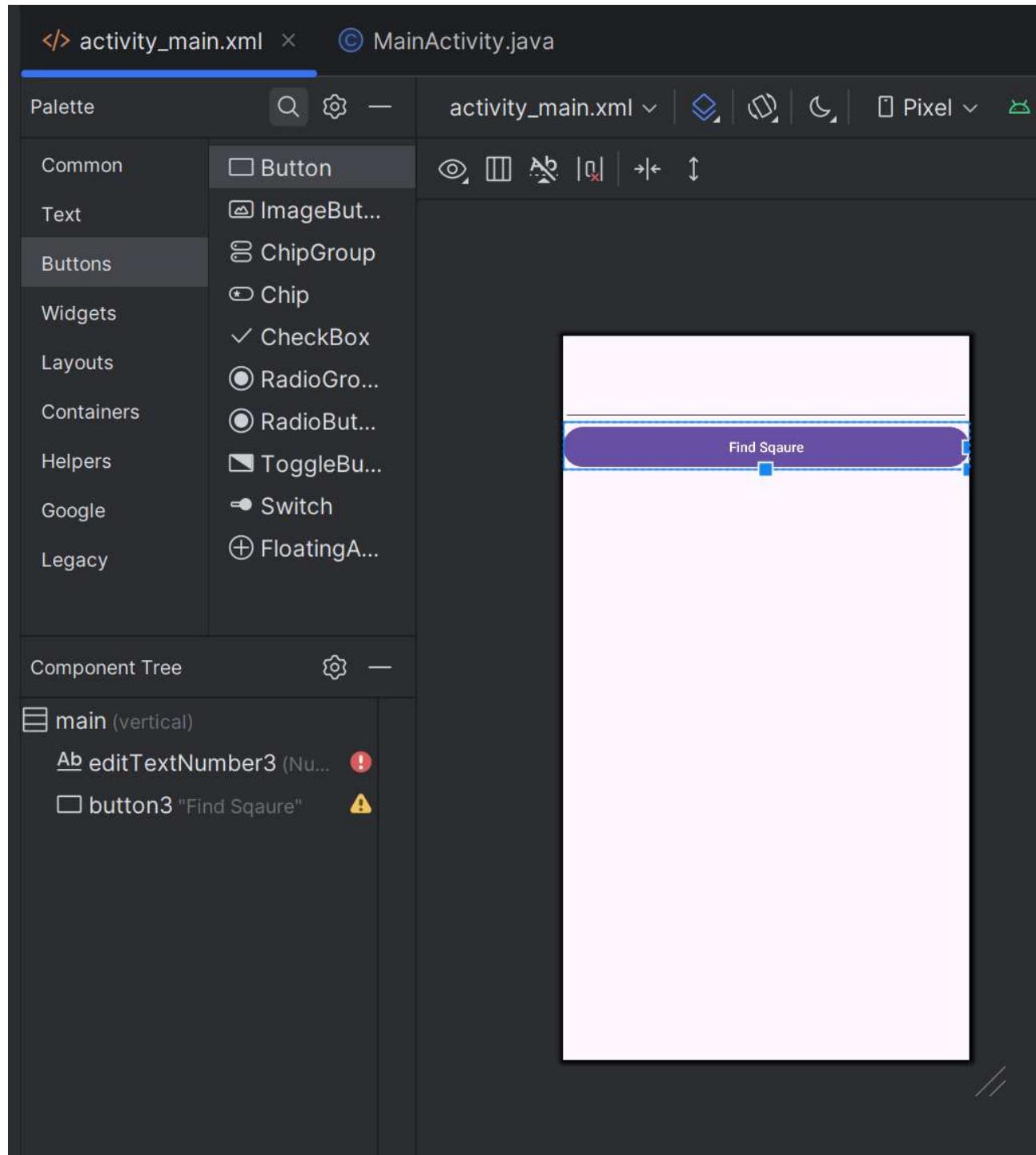
```
b.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
  
        c = Calendar.getInstance();  
        int hh = c.get(Calendar.HOUR);  
        int mi = c.get(Calendar.MINUTE);  
        int ss = c.get(Calendar.SECOND);  
  
        tp = new TimePickerDialog(MainActivity.this, new  
TimePickerDialog.OnTimeSetListener() {  
    @Override  
    public void onTimeSet(TimePicker view, int hourOfDay, int minute) {  
  
        t1.setText(String.format("%02d:%02d:%02d",hourOfDay,minute,ss));  
  
    }  
},hh,mi,true);  
tp.show();  
  
}  
});  
}  
}
```

## Output



**Q8) Create an Android Application that accept number from user to find square of number and display result on Alert Dialog Box**

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    EditText number;
    Button button;

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

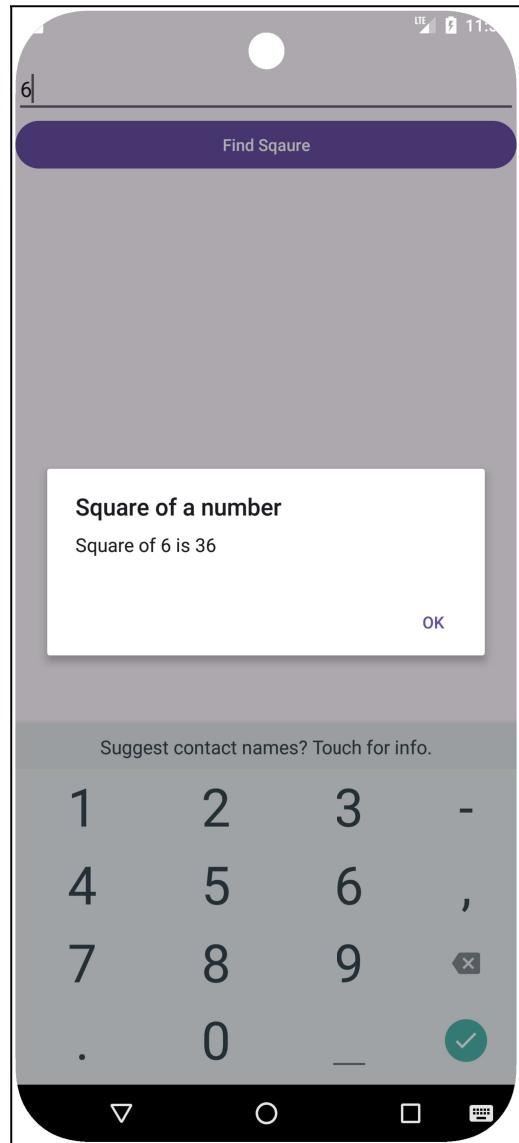
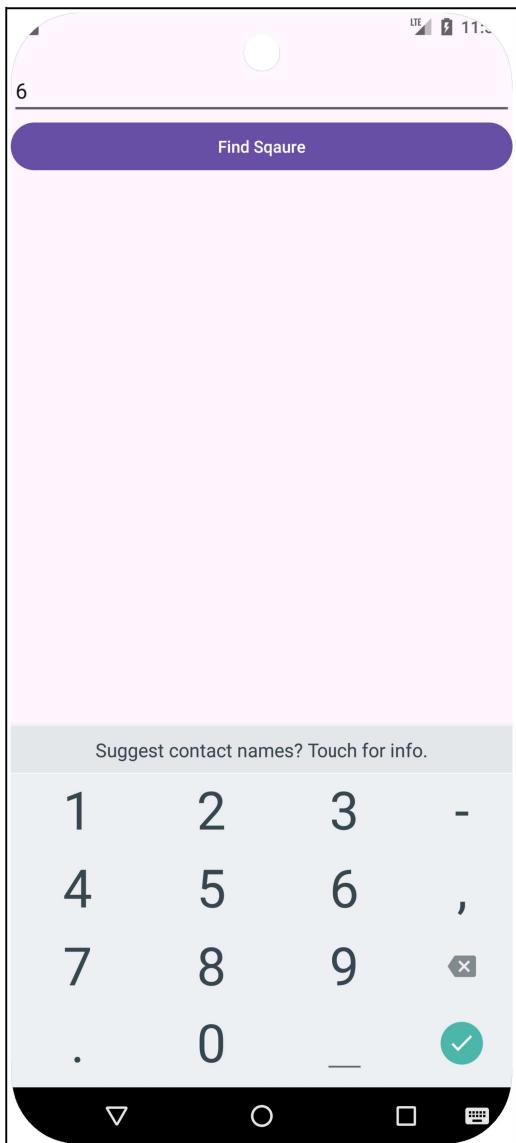
        number = findViewById(R.id.editTextNumber3);
        button = findViewById(R.id.button3);
```

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

        int n = Integer.parseInt(number.getText().toString());
        int square = n*n;
        AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
        ad.setTitle("Square of a number");
        ad.setMessage("Square of "+n+" is "+square);
        ad.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
            }
        });
        ad.show();

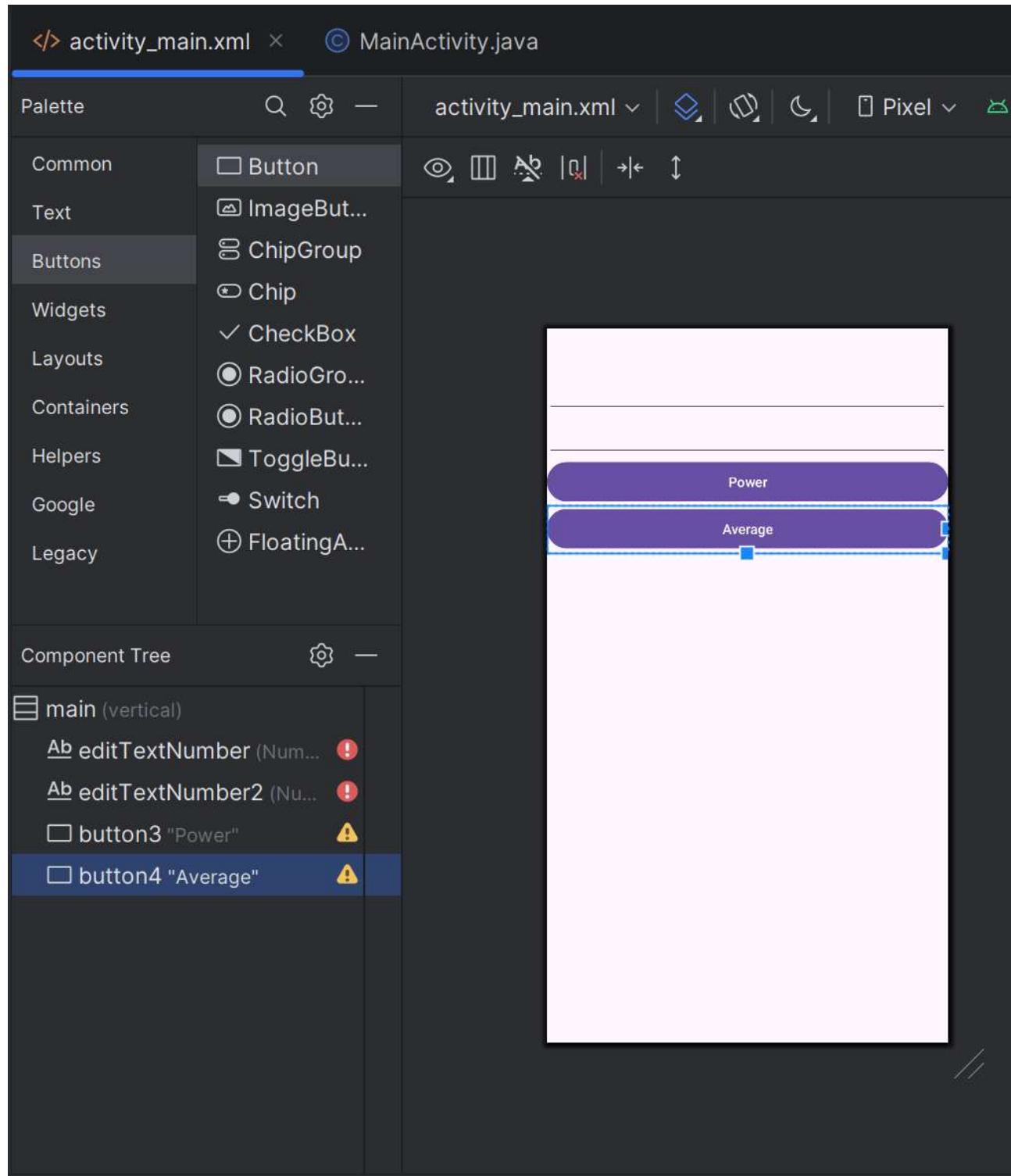
    }
});
```

## Output



**Q9) Create an Android Application that accept number from user to find power and average and display result on Alert Dialog Box**

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    TextView t1,t2;
    Button b1,b2;

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

        t1 = findViewById(R.id.editTextNumber);
        t2 = findViewById(R.id.editTextNumber2);
        b1 = findViewById(R.id.button3);
        b2 = findViewById(R.id.button4);
    }
}
```

```
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        int n1 = Integer.parseInt(t1.getText().toString());
        int n2 = Integer.parseInt(t2.getText().toString());
        int power = 1;
        for(int i = 0;i<n2;i++){
            power = power *n1;
        }

        AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
        ad.setTitle("Power of the Number");
        ad.setMessage("Power is "+power);
        ad.setIcon(R.drawable.ic_launcher_background);
        ad.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
            }
        });

        ad.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {

                dialog.dismiss();
            }
        });

        ad.setNeutralButton("Help", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                Toast.makeText(MainActivity.this, "Click cancel to exit ",
Toast.LENGTH_SHORT).show();
            }
        });
        ad.show();

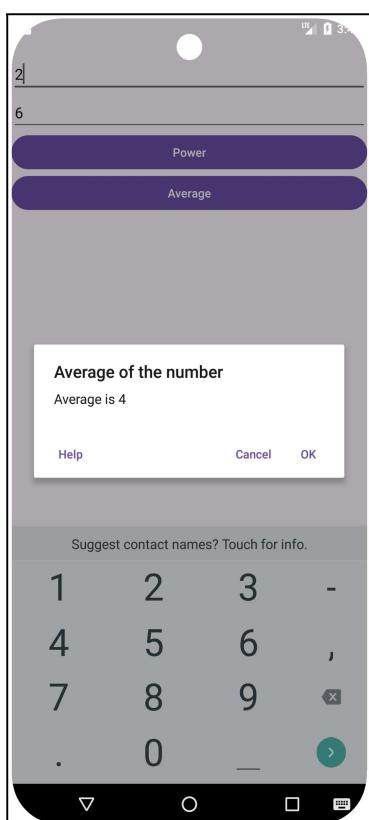
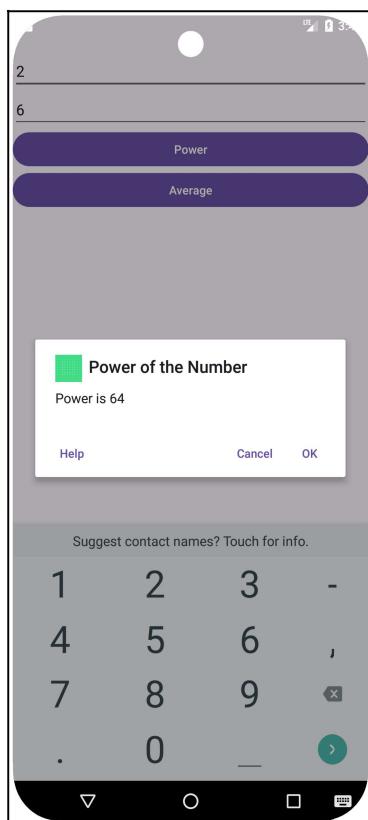
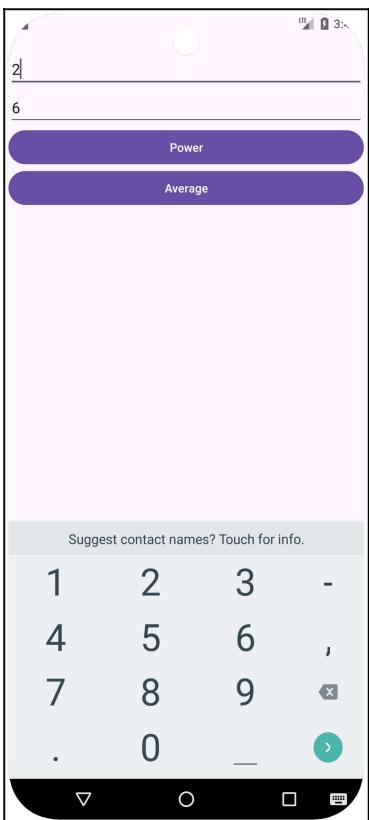
    }
});
```

```
b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        int n1 = Integer.parseInt(t1.getText().toString());
        int n2 = Integer.parseInt(t2.getText().toString());
        int average = (n1+n2)/2;

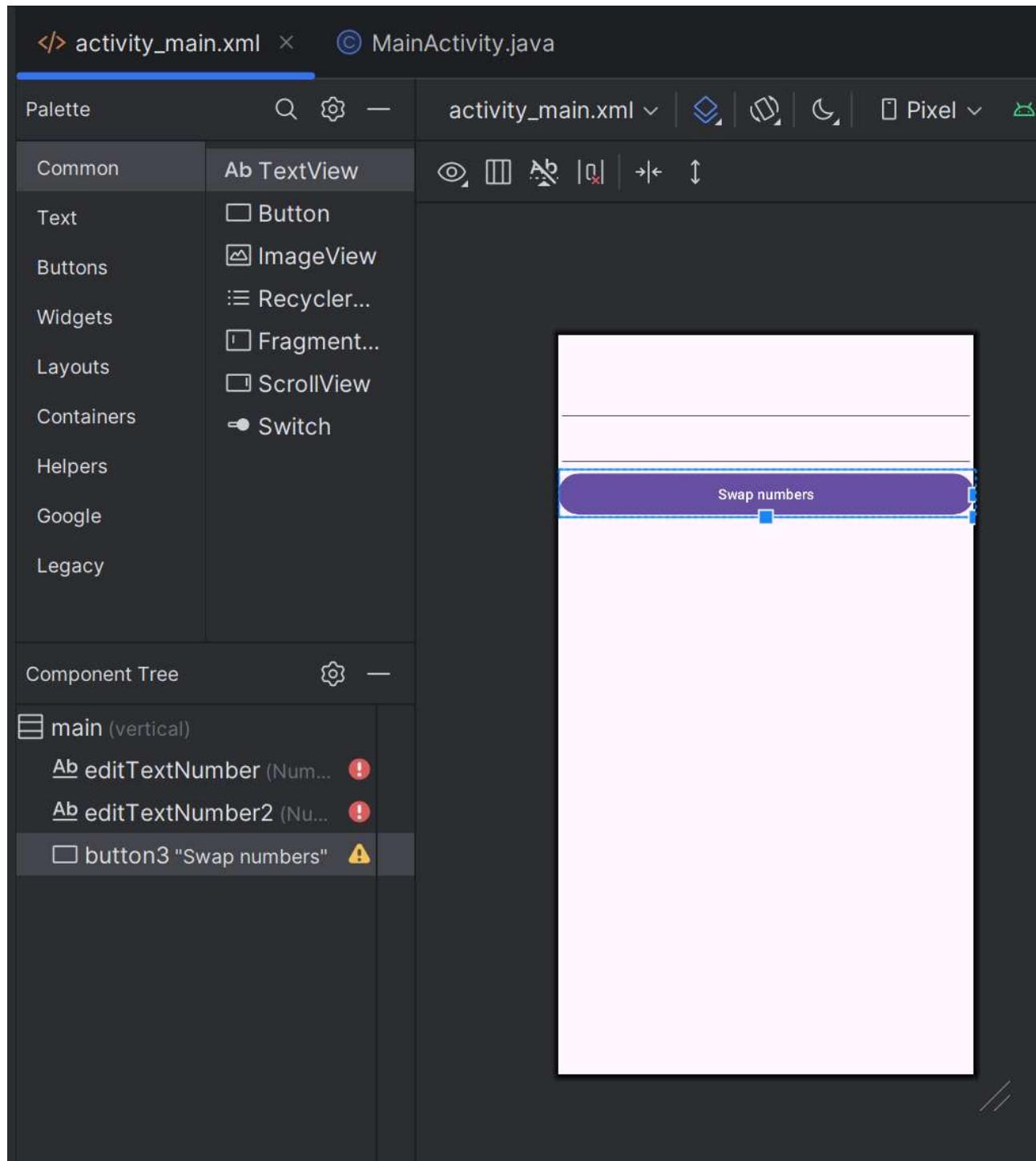
        AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
        ad.setTitle("Average of the number");
        ad.setMessage("Average is "+average);
        ad.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
            }
        });
        ad.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.dismiss();
            }
        });
        ad.setNeutralButton("Help", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                Toast.makeText(MainActivity.this, "Click cancel to help",
Toast.LENGTH_SHORT).show();
            }
        });
        ad.show();
    }
});
```

## Output



**Q10) Create an Android application to accept number from user and find Swap of number and display result on AlertDialog Box**

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    EditText t1,t2;
    Button b1;

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

        t1 = findViewById(R.id.editTextNumber);
        t2 = findViewById(R.id.editTextNumber2);
        b1 = findViewById(R.id.button3);
    }
}
```

```

b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        String num1 = t1.getText().toString();
        String num2 = t2.getText().toString();

        String temp = num1;
        num1 = num2;
        num2 = temp;

        t1.setText(num2);
        t2.setText(num1);

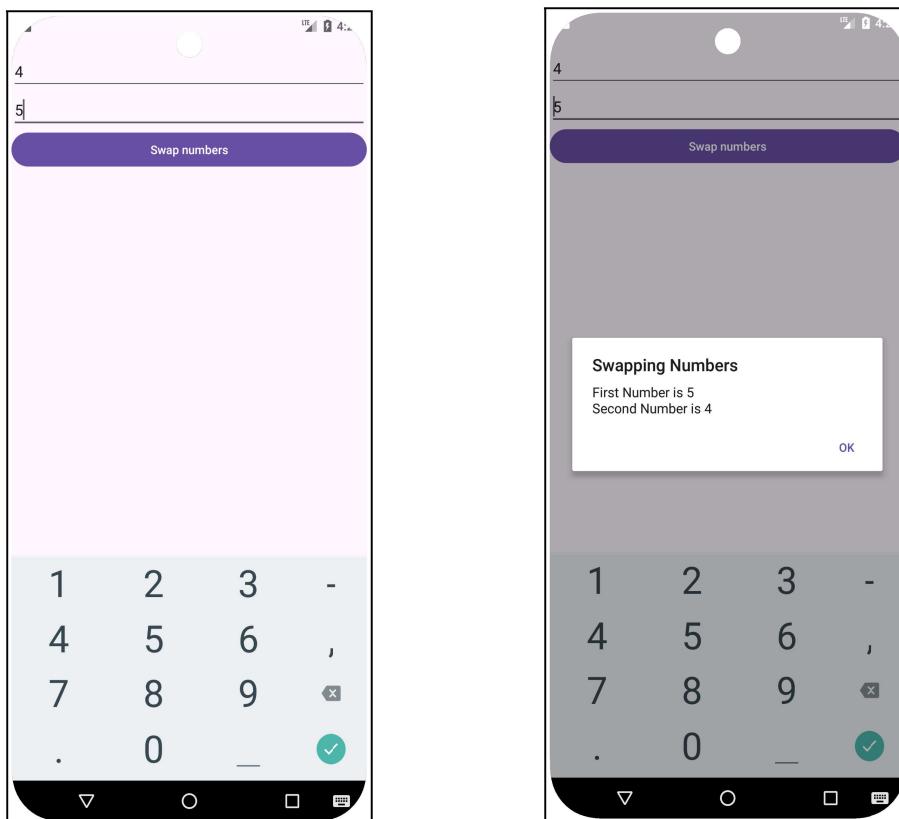
        AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
        ad.setTitle("Swapping Numbers");
        ad.setMessage("First Number is "+num1+" \nSecond Number is "+num2);
        ad.setPositiveButton("OK",null);
        ad.show();

    }
});

}
}

```

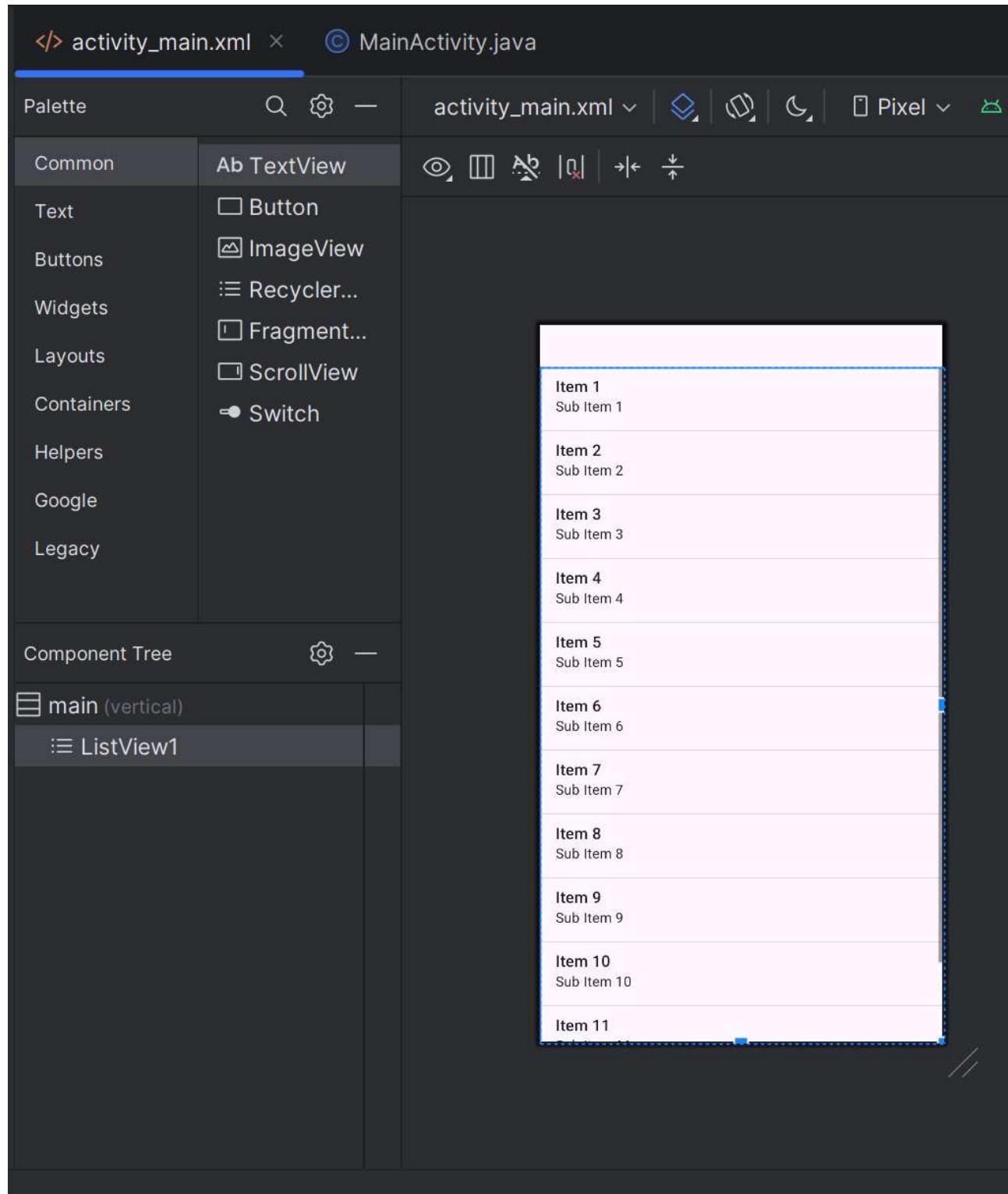
## Output



## SET B :

**Q1) Create an Android Application to create a List View of Fruits and Display an Alert Dialog Box after an Item is selected from the List**

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.ListView;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    ListView lv;
    String[] fruits = {"Apple", "Banana", "Cherry", "Mango", "Watermelon"};

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

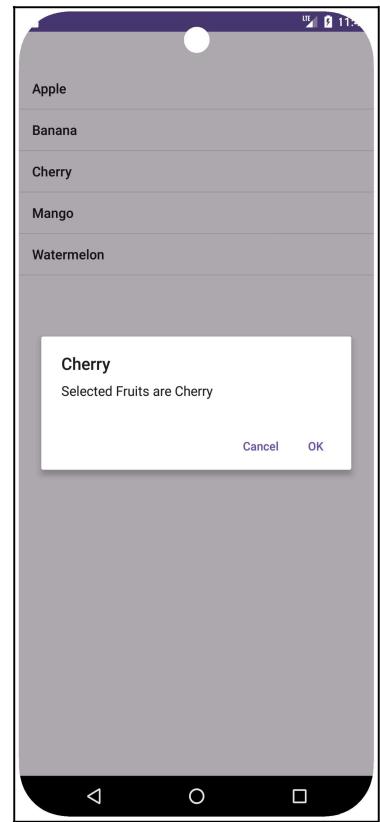
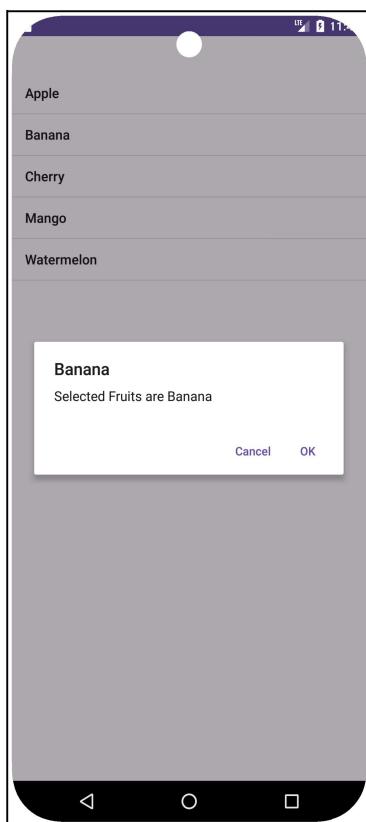
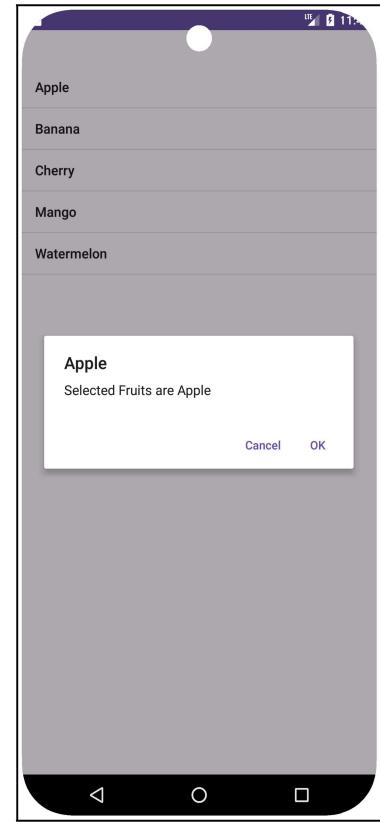
        lv = findViewById(R.id.ListView1);
```

```
lv.setAdapter(new ArrayAdapter<>(MainActivity.this,
        android.R.layout.simple_list_item_1,fruits));
        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int position,
long id) {
                AlertDialog.Builder ad = new AlertDialog.Builder(MainActivity.this);
                ad.setTitle(fruits[position]);
                ad.setMessage("Selected Fruits are "+fruits[position]);

                ad.setPositiveButton("OK", new DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        dialog.dismiss();

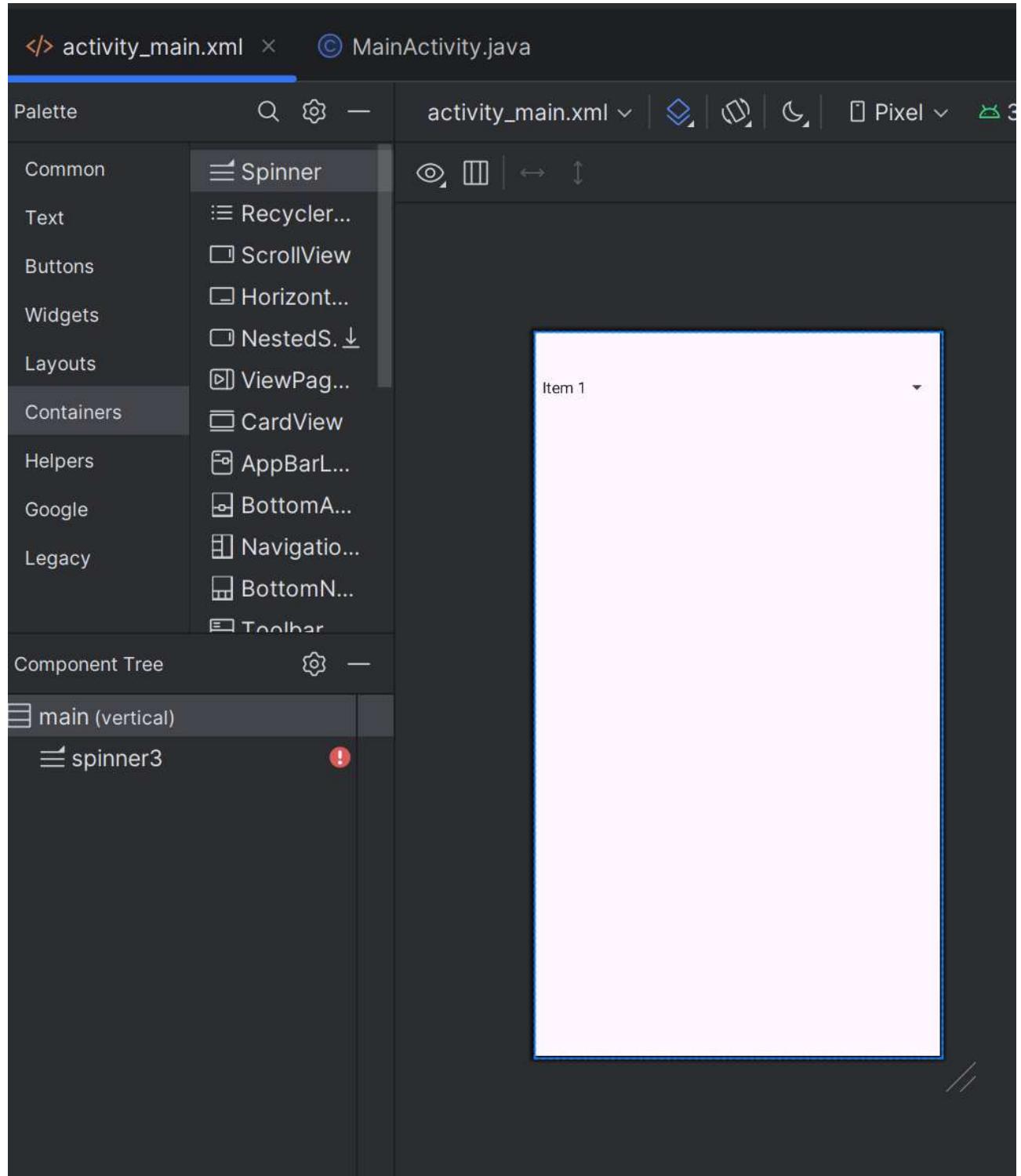
                    }
                });
                ad.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        dialog.cancel();
                    }
                });
                ad.show();
            }
        });
    }
```

## Output



**Q2) Create an Android Application to take one Spinner and add a string array of size to the Spinner and show Toast message of the selected size**

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.ListView;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    Spinner s ;
    String[] sized = {"Small","Medium","Large"};

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

        s = findViewById(R.id.spinner3);
```

```
s.setAdapter(new ArrayAdapter<>(MainActivity.this,
        android.R.layout.simple_spinner_dropdown_item,sized));

s.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
    @Override
    public void onItemSelected(AdapterView<?> parent, View view, int position,
long id) {
        int ts;
        switch (position){
            case 0:
                ts = 14;
                break;
            case 1:
                ts = 28;
                break;
            case 2:
                ts = 44;
                break;
            default:
                ts = 18;

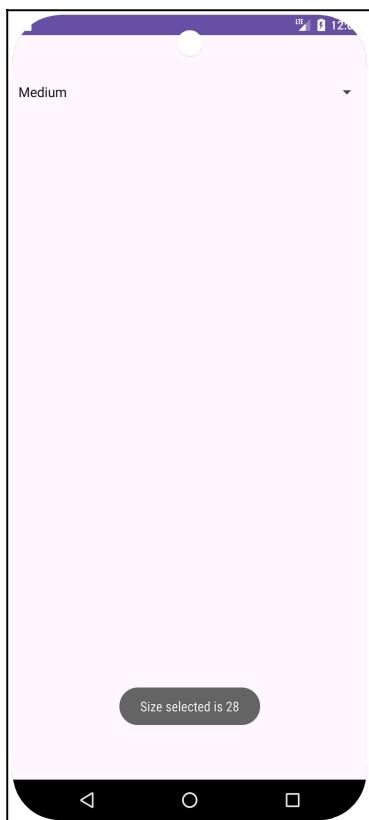
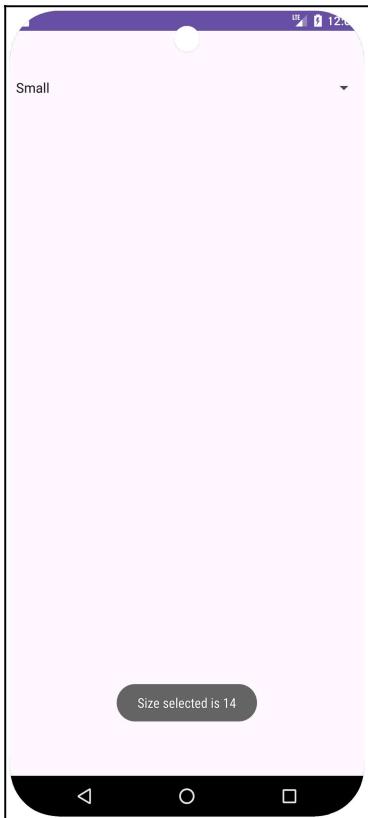
        }
        Toast.makeText(MainActivity.this, "Size selected is "+ts,
        Toast.LENGTH_SHORT).show();
    }

    @Override
    public void onNothingSelected(AdapterView<?> parent) {

    });
}

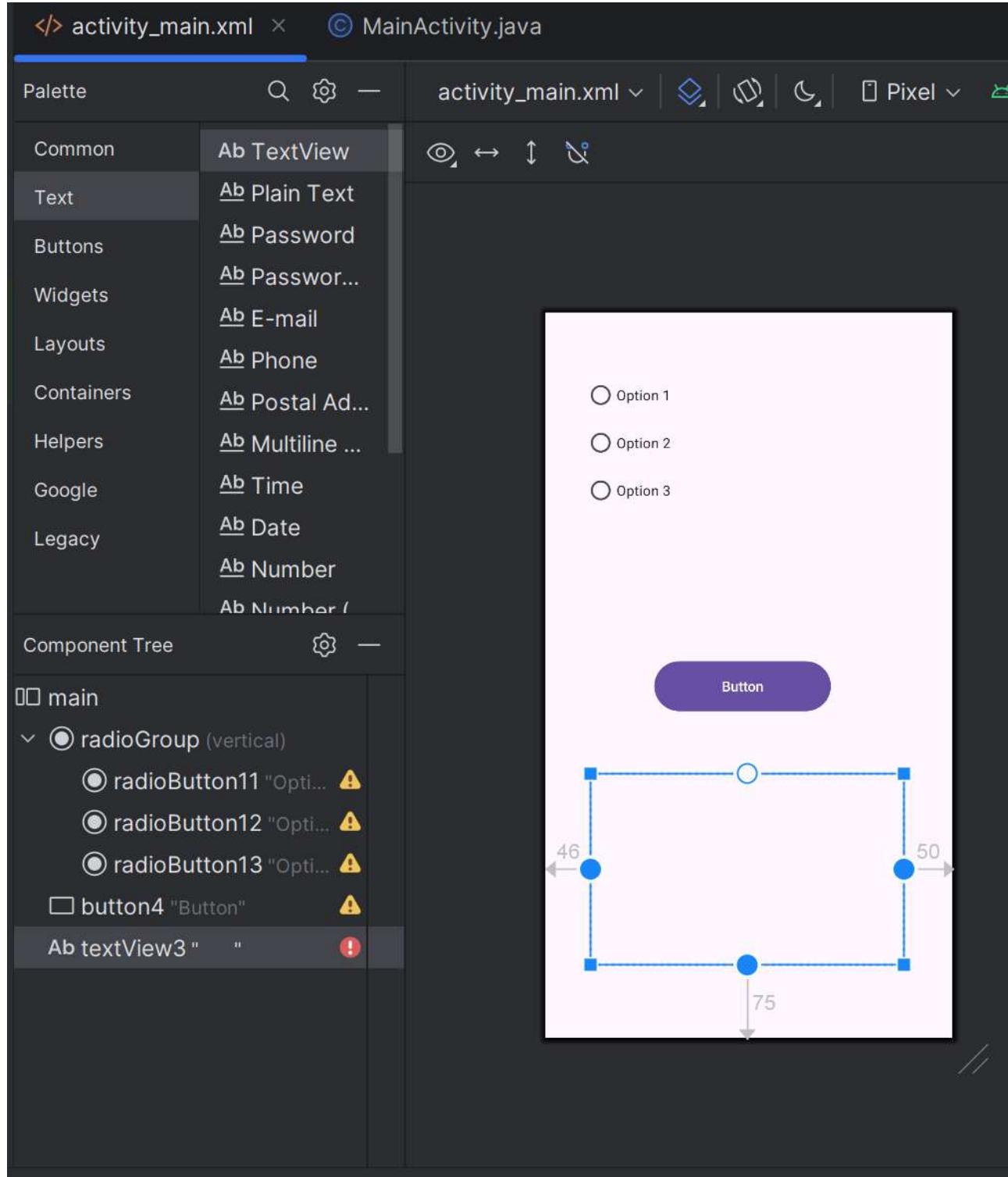
})
```

## Output



### Q3) Create a simple android application that demonstrate Radio Button

UI Design :



Code :

```
package com.example.projectas;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.ListView;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    RadioGroup rg;
    RadioButton b1,b2,b3;
    Button button;
    TextView result;
```

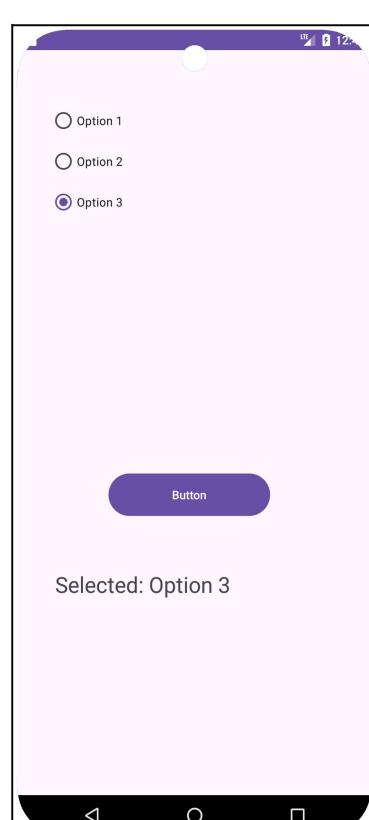
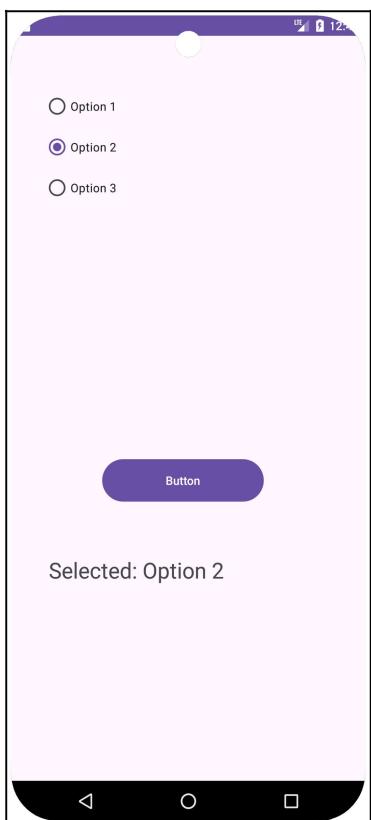
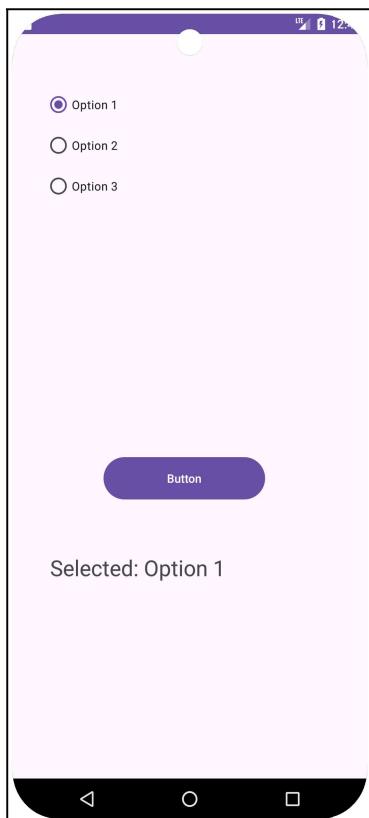
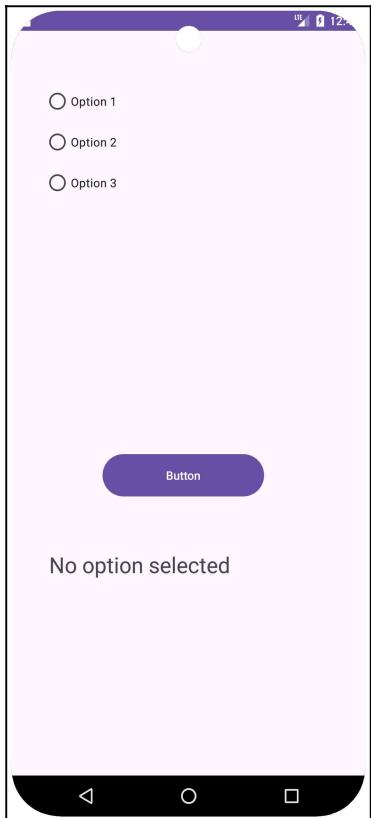
```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    rg = findViewById(R.id.radioGroup);
    b1 = findViewById(R.id.radioButton11);
    b2 = findViewById(R.id.radioButton12);
    b3 = findViewById(R.id.radioButton13);
    button = findViewById(R.id.button4);
    result = findViewById(R.id.textView3);

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

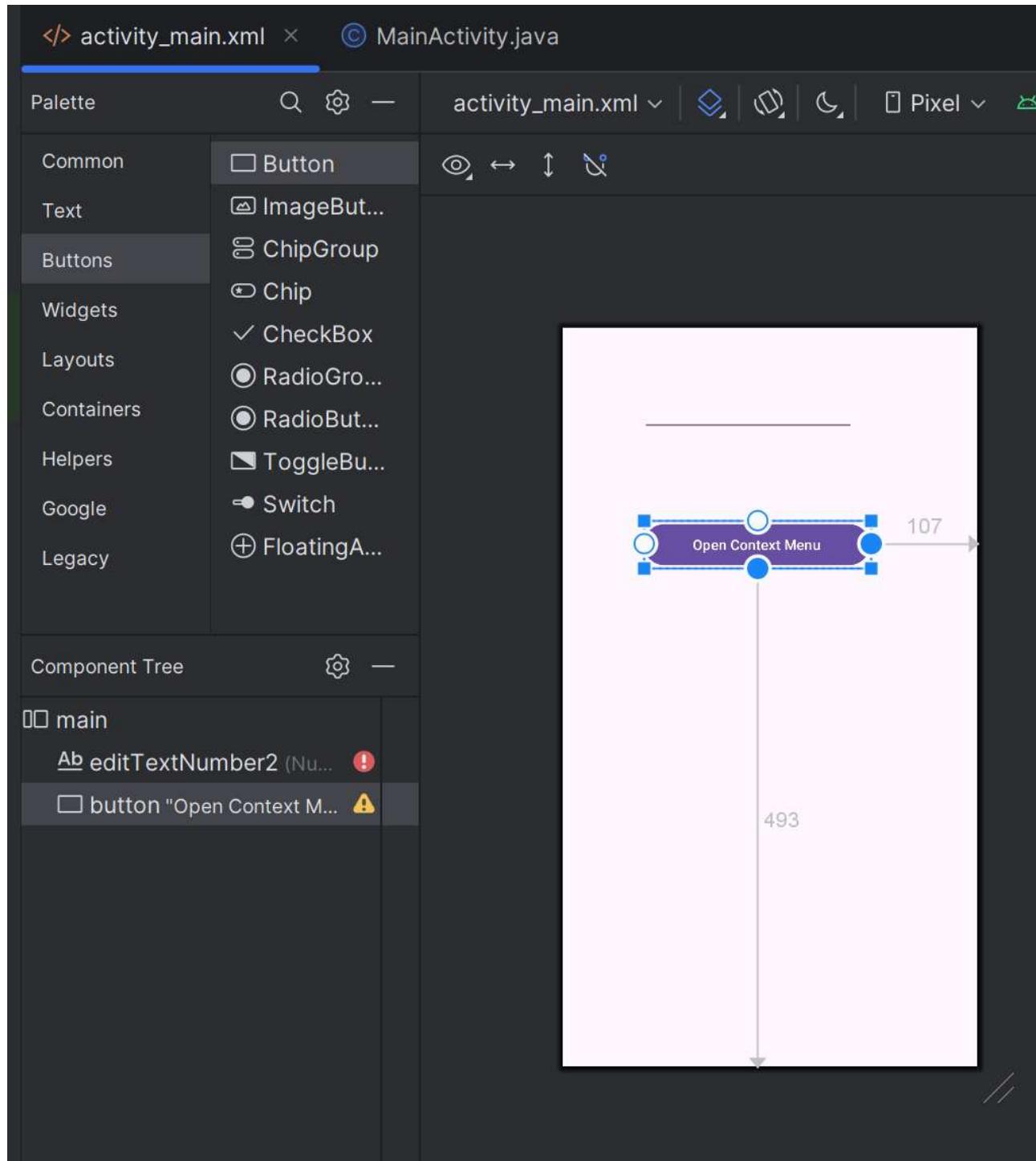
            int selectedId = rg.getCheckedRadioButtonId();
            if (selectedId != -1){
                RadioButton selectedRadioButton = findViewById(selectedId);
                result.setText("Selected: "+selectedRadioButton.getText());
            }
            else {
                result.setText("No option selected ");
            }
        }
    });
}
```

## Output



#### **Q4) Create an Android Application to accept a number and calculate Square of number using Context Menu**

UI Design :



Code :

```
package com.example.projectas;

import android.annotation.SuppressLint;
import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.ListView;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    EditText e1;
    Button button;
```

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

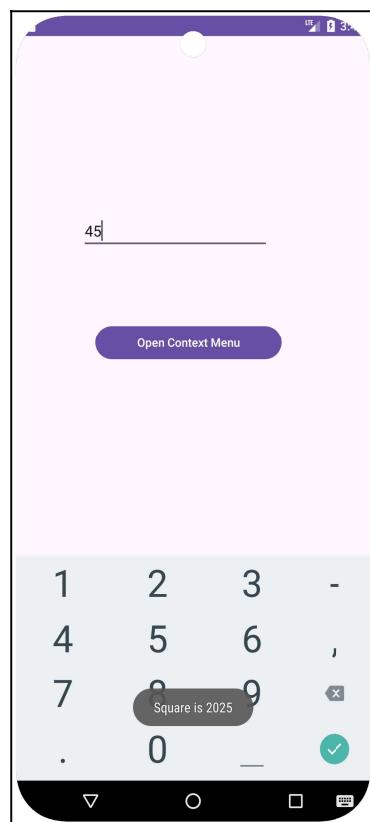
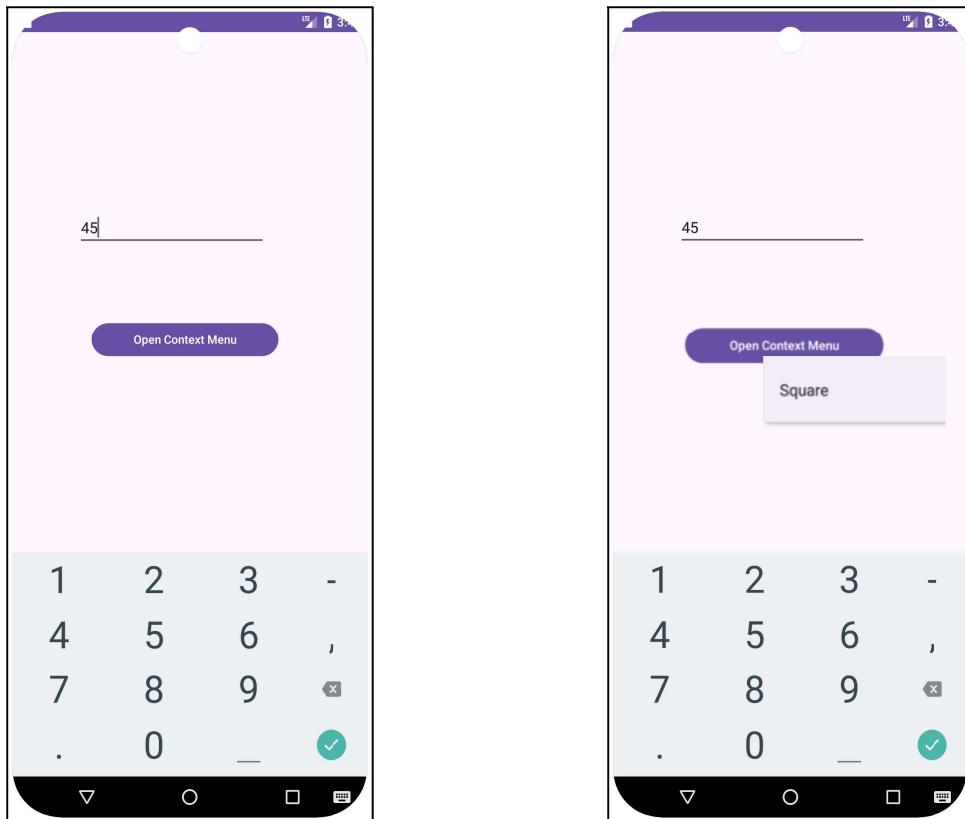
    e1 = findViewById(R.id.editTextNumber2);
    button = findViewById(R.id.button);
    registerForContextMenu(button);

}

@Override
public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuItemInfo menuInfo) {
    super.onCreateContextMenu(menu, v, menuInfo);
    menu.add("Square"); // Only Square option
}

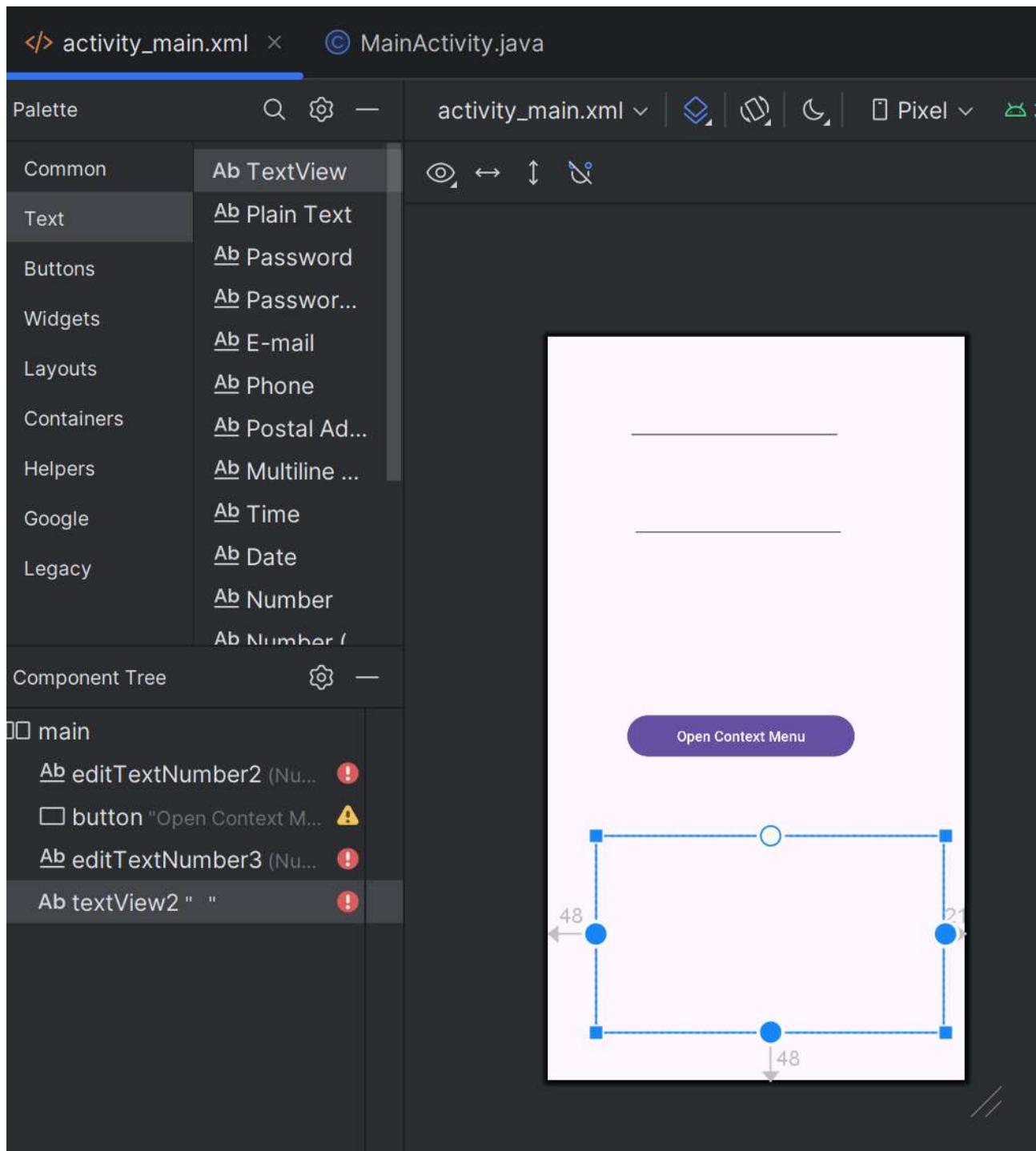
@Override
public boolean onContextItemSelected(@NonNull MenuItem item) {
    int n = Integer.parseInt(e1.getText().toString());
    Toast.makeText(this, "Square is " + (n * n), Toast.LENGTH_SHORT).show();
    return super.onContextItemSelected(item);
}
}
```

## Output



## Q5) Create an Android Application to accept a number and find swap of number and display the result Using Context Menu

UI Design :



Code:

```
package com.example.projectas;

import android.annotation.SuppressLint; import android.app.DatePickerDialog;
import android.app.TimePickerDialog; import android.content.DialogInterface;
import android.os.Bundle; import android.view.ContextMenu;
import android.view.MenuItem; import android.view.View;
import android.widget.AdapterView; import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton; import android.widget.DatePicker;
import android.widget.EditText; import android.widget.ImageView;
import android.widget.ListView; import android.widget.RadioButton;
import android.widget.RadioGroup; import android.widget.Spinner;
import android.widget.Switch; import android.widget.TextView;
import android.widget.TimePicker; import android.widget.Toast;
import android.widget.ToggleButton;
import androidx.activity.EdgeToEdge; import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    EditText e1,e2;
    Button button;

    TextView result;

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

        e1 = findViewById(R.id.editTextNumber2);
        e2 = findViewById(R.id.editTextNumber3);
        button = findViewById(R.id.button);
        result = findViewById(R.id.textView2);
        registerForContextMenu(button);

    }
}
```

```
@Override
public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuItemInfo menuInfo) {
    super.onCreateContextMenu(menu, v, menuInfo);
    menu.setHeaderTitle("Choose an Action ");
    menu.add("Swap Numbers");
}

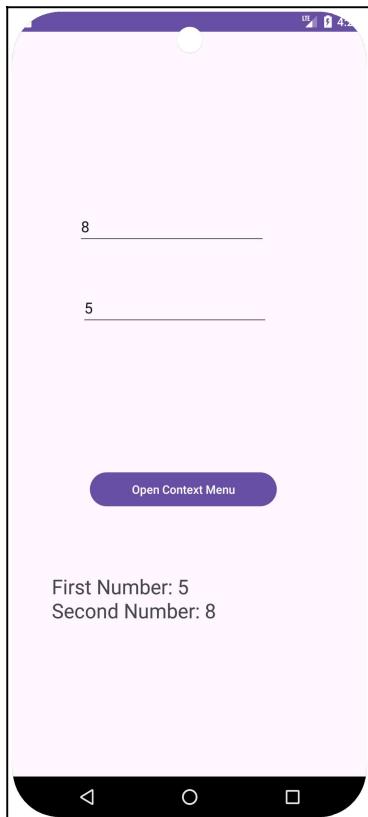
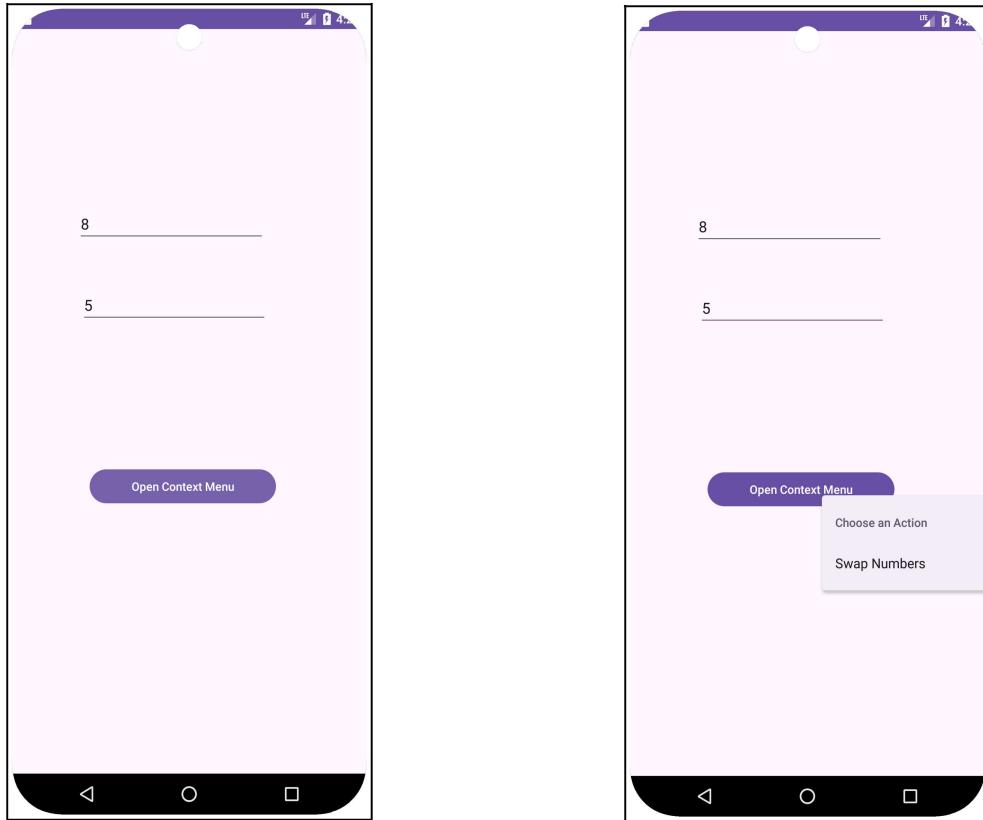
@Override
public boolean onContextItemSelected(@NonNull MenuItem item) {
    if (item.getTitle().equals("Swap Numbers")){
        swapNumbers();
        return true;
    }
    return super.onContextItemSelected(item);
}

private void swapNumbers(){
    String num1 = e1.getText().toString();
    String num2 = e2.getText().toString();
    if (!num1.isEmpty() && !num2.isEmpty()){
        String temp = num1;
        num1 = num2;
        num2 = temp;

        e1.setText(num2);
        e2.setText(num1);
        result.setText("First Number: "+num1+"\nSecond Number: "+num2);

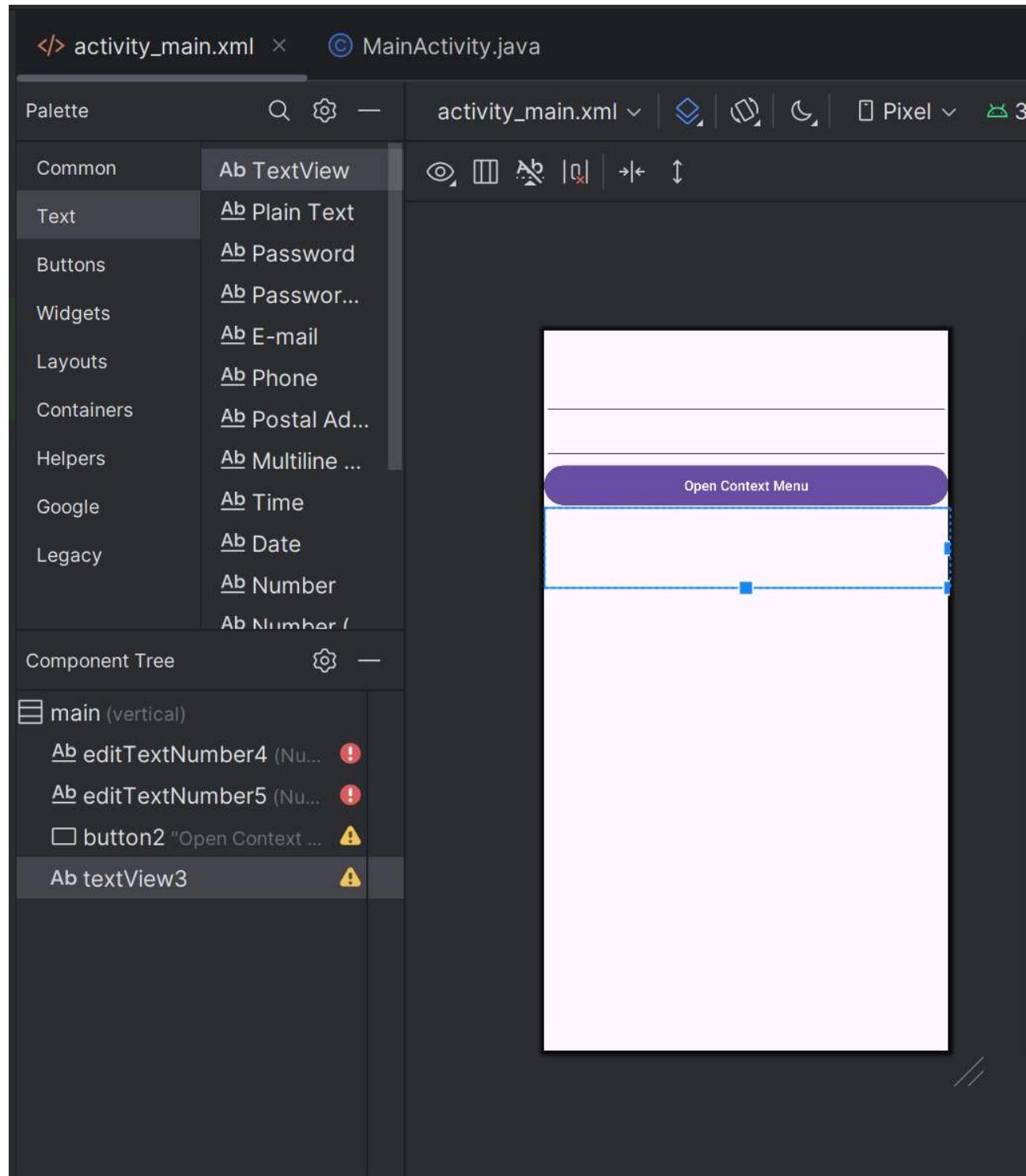
    }
    else {
        result.setText("Please Enter both numbers ");
    }
}
```

## Output



## Q6) Create an Android Application to accept number from user to perform Arithmetic operation of number and display result using Context Menu

UI Design :



Code :

```
package com.example.projectas;

import android.annotation.SuppressLint;
import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.ListView;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;

import androidx.activity.EdgeToEdge;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {
    EditText e1,e2;
    Button button;
    TextView result;
```

```
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    e1 = findViewById(R.id.editTextNumber4);  
    e2 = findViewById(R.id.editTextNumber5);  
    button = findViewById(R.id.button2);  
    result = findViewById(R.id.textView3);  
  
    registerForContextMenu(button);  
  
}  
  
@Override  
public void onCreateContextMenu(ContextMenu menu, View v,  
ContextMenu.ContextMenuItemInfo menuInfo) {  
    super.onCreateContextMenu(menu, v, menuInfo);  
    menu.setHeaderTitle("Choose an Operation ");  
    menu.add("Addition");  
    menu.add("Subtraction");  
    menu.add("Multiplication");  
    menu.add("Division");  
  
}  
  
@Override  
public boolean onContextItemSelected(@NonNull MenuItem item) {  
    int a,b;  
    String operation = item.getTitle().toString();  
  
    a = Integer.parseInt(e1.getText().toString());  
    b = Integer.parseInt(e2.getText().toString());  
}
```

```
switch (operation){  
    case "Additi4on":  
        result.setText("Addition is "+(a+b));  
        break;  
    case "Subtraction":  
        result.setText("Subtraction is "+(a-b));  
        break;  
    case "Multiplication":  
        result.setText("Multiplication is "+(a*b));  
        break;  
    case "Division":  
        if (b==0){  
            result.setText("Cannot divide by zero");  
        }  
        else {  
            result.setText("Division is "+(a/b));  
        }  
        return true;  
    }  
  
    return super.onContextItemSelected(item);  
}  
}
```

## Output

