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EXP.NO: 1 CHANGING FONT COLOR AND FONT SIZE

AIM:

To develop an android application that changes the text font size and font color of a text.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:
(JAVA CODING):

```
package com.example.exercise_1;
import android.os.Bundle;
import android.app.Activity;
import android.graphics.Color;
import android.view.Menu;
import android.view.View;
import android.widget.*;
public class MainActivity extends Activity {
   float font =10;
   int i=1;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Button b1=(Button) findViewById(R.id.button1);
      Button b2=(Button) findViewById(R.id.button2);
      final TextView t1=(TextView) findViewById(R.id.textView1);
      b1.setOnClickListener(new View.OnClickListener() {

         @Override
         public void onClick(View arg0) {
// TODO Auto-generated method stub
            switch(i)
            {
               case 1:
                  t1.setTextColor(Color.RED);
                  break;
               case 2:
                  t1.setTextColor(Color.parseColor("#FFFF00"));
                  break;
               case 3:
                  t1.setTextColor(Color.parseColor("#00FF00"));
                  break;
```

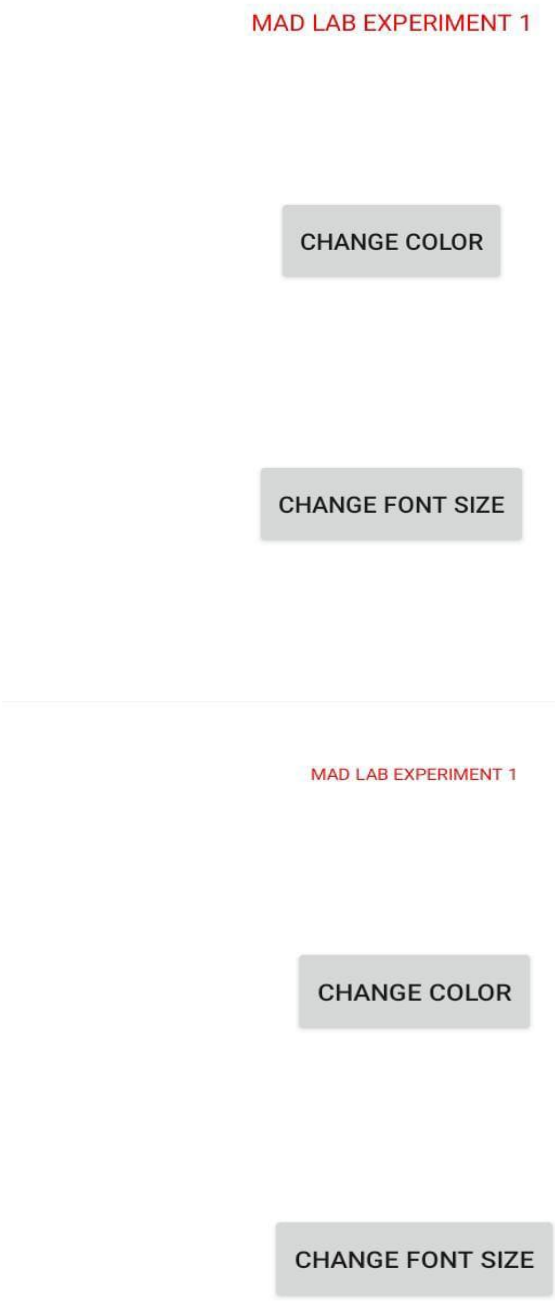
```
                case 4:
                    t1.setTextColor(Color.parseColor("#800000"));
                    break;
            }
            i++;
            if(i==5)
                i=1;
        }
    });

    b2.setOnClickListener(new View.OnClickListener() {

        @Override
        public void onClick(View v) {
// TODO Auto-generated method stub
            t1.setTextSize(font);
            font=font+4;
            if(font==30)
                font=10;
        }

    });
  }
  //@Override
  //public boolean onCreateOptionsMenu(Menu menu) {
// Inflate the menu; this adds items to the action bar if it is present.
  //getMenuInflater().inflate(R.menu.main, menu);
  // return true; }

}
```

(XML CODING):

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity" >
  <TextView
    android:id="@+id/textView1"
    android:layout_marginTop="30dp"
    android:layout_centerHorizontal="true"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="MAD LAB EXPERIMENT 1" />
  <Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textView1"
    android:layout_centerHorizontal="true"
```

```
        android:layout_marginTop="78dp"
        android:text="change color" />
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/button1"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="84dp"
        android:text="change font Size" />
</RelativeLayout>
```

OUTPUT



RESULT:

Thus an android application that changes the text font size and font color of a text is developed successfully.

EXP.NO 2 APPLICATION CREATION USING GUI COMPONENTS

AIM:

To develop an android application that uses GUI components, Font and Colors.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:
(JAVA CODING):

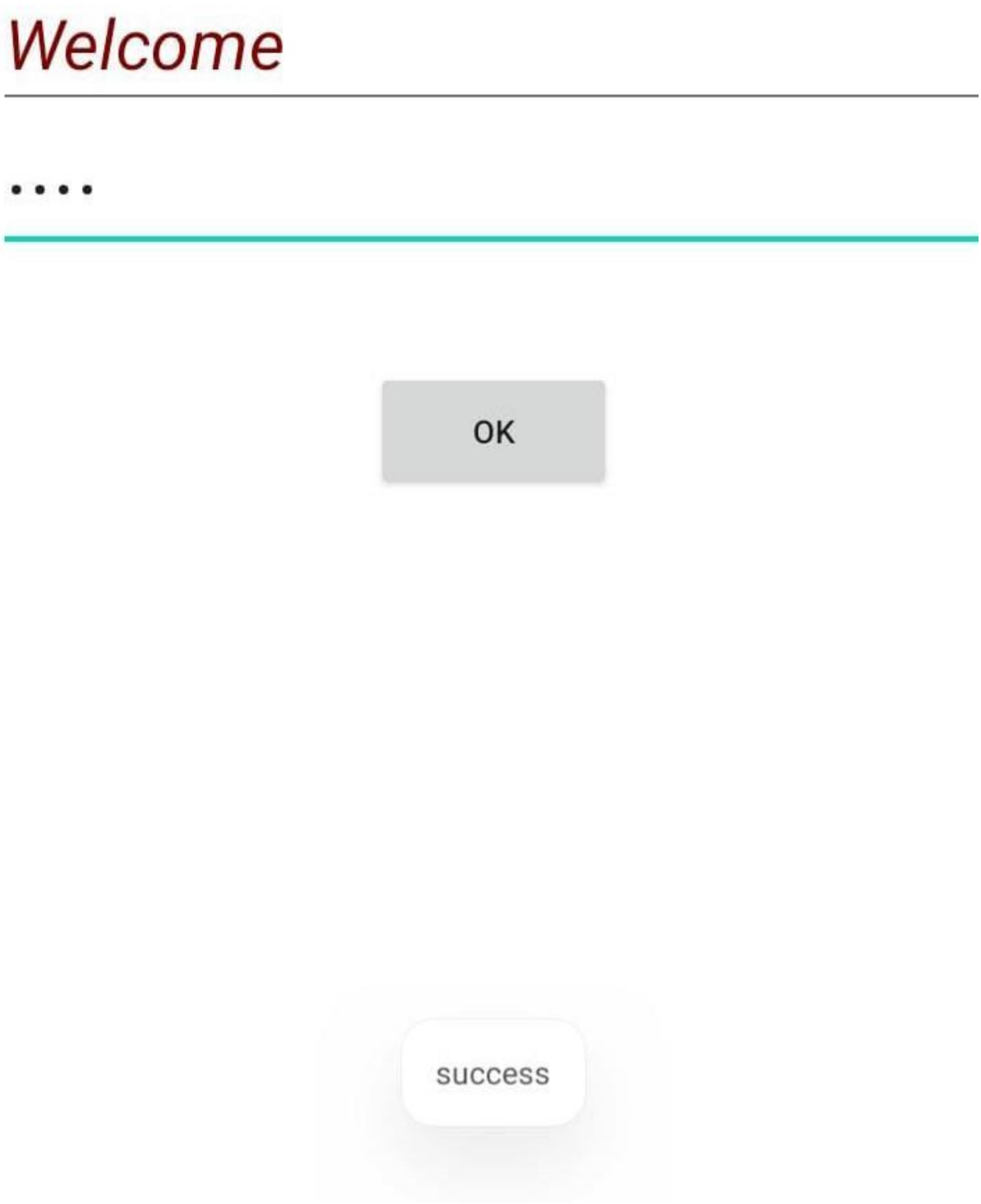
```
package com.example.exercise_2;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends Activity {
   EditText ed1,ed2;
   Button bu;
   @Override

   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      ed1=(EditText)findViewById(R.id.ed1);
      ed2=(EditText)findViewById(R.id.ed2);
      bu=(Button)findViewById(R.id.bu);
      bu.setOnClickListener(new View.OnClickListener() {

         @Override
         public void onClick(View v) {
// TODO Auto-generated method stub

            String a = ed1.getText().toString();
            String b = ed2.getText().toString();
            if(a.equals("Welcome")&& b.equals("abcd")){

               Toast.makeText(getApplicationContext(), "success",
Toast.LENGTH_LONG).show();
            }
            else{
```

```
                Toast.makeText(getApplicationContext(), "Invalid User",
Toast.LENGTH_LONG).show();
            }
          }
       });
   }
   @Override
   protected void onResume() {
// TODO Auto-generated method stub
      super.onResume();
   }
//   @Override
//   public boolean onCreateOptionsMenu(Menu menu) {
//// Inflate the menu; this adds items to the action bar if it is present.
//      getMenuInflater().inflate(R.menu.main, menu);
//      return true;
//   }
}
```

(XML CODING):

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity" >
   <EditText
      android:id="@+id/ed1"
      android:layout_width="match_parent"
      android:layout_height="50dp"
      android:layout_marginTop="200dp"
      android:textColor="#800000"
      android:textSize="25dp"
      android:textStyle="italic" />
   <EditText
      android:id="@+id/ed2"
      android:layout_below="@id/ed1"
      android:layout_width="match_parent"
      android:layout_height="51dp"
      android:inputType="textPassword" />
   <Button
      android:id="@+id/bu"
      android:layout_centerVertical="true"
      android:layout_centerHorizontal="true"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text=" OK " />
</RelativeLayout>
```

OUTPUT:



RESULT:

Thus an android application that uses GUI components, Font and color is developed successfully.

EXP.NO 3 NATIVE CALCULATOR APPLICATION

AIM:

To develop an android application to create a native calculator.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:
(JAVA CODING):

```
package com.example.exercise_3;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends Activity {
   Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,badd,bsub,bmul,bdiv,bdot,beq;
   EditText et;
   int val1,val2;
   boolean add,sub,div,mul,sqr;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      b1=(Button) findViewById(R.id.button1);
      b2=(Button) findViewById(R.id.button2);
      b3=(Button) findViewById(R.id.button3);
      b4=(Button) findViewById(R.id.button4);
      b5=(Button) findViewById(R.id.button5);
      b6=(Button) findViewById(R.id.button6);
      b7=(Button) findViewById(R.id.button7);
      b8=(Button) findViewById(R.id.button8);
      b9=(Button) findViewById(R.id.button9);
      b10=(Button) findViewById(R.id.button10);
      badd=(Button) findViewById(R.id.button11);
      bsub=(Button) findViewById(R.id.button12);
      bmul=(Button) findViewById(R.id.button13);
      bdiv=(Button) findViewById(R.id.button14);
      bdot=(Button) findViewById(R.id.button15);
      beq=(Button) findViewById(R.id.button16);
      et=(EditText) findViewById(R.id.editText1);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"1");
            }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"2");
            }
        });
        b3.setOnClickListener(new View.OnClickListener() {
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"3");
            }
        });
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"4");
            }
        });
        b5.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"5");
            }
        });
        b6.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"6");
            }
        });
        b7.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"7");
            }
        });
        b8.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
```

```
// TODO Auto-generated method stub
                et.setText(et.getText()+"8");
            }
        });
        b9.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"9");
            }
        });
        b10.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+"10");
            }
        });
        badd.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                val1=Integer.parseInt(et.getText()+"");
                add=true;
                et.setText(null);
            }
        });
        bsub.setOnClickListener(new View.OnClickListener() {


            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                val1=Integer.parseInt(et.getText()+"");
                sub=true;
                et.setText(null);
            }
        });
        bmul.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                val1=Integer.parseInt(et.getText()+"");
                mul=true;
                et.setText(null);
            }
        });
        bdiv.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
```

```
// TODO Auto-generated method stub
                val1=Integer.parseInt(et.getText()+"");
                div=true;
                et.setText(null);
            }
        });
        bdot.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                et.setText(et.getText()+".");
            }
        });
        beq.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
// TODO Auto-generated method stub
                val2=Integer.parseInt(et.getText()+"");
                if(add==true){
                    et.setText(val1+val2+"");
                    add=false;
                }
                if(sub==true){
                    et.setText(val1-val2+"");
                    sub=false;
                }
                if(mul==true){
                    et.setText(val1*val2+"");
                    mul=false;
                }
                if(div==true){
                    et.setText(val1/val2+"");
                    div=false;
                }
            }
        });
    }
//    public boolean onCreateOptionsMenu(Menu menu) {
//// Inflate the menu; this adds items to the action bar if it is present.
//        getMenuInflater().inflate(R.menu.main, menu);
//        return true;
//    }
}
```

(XML CODING):

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
```

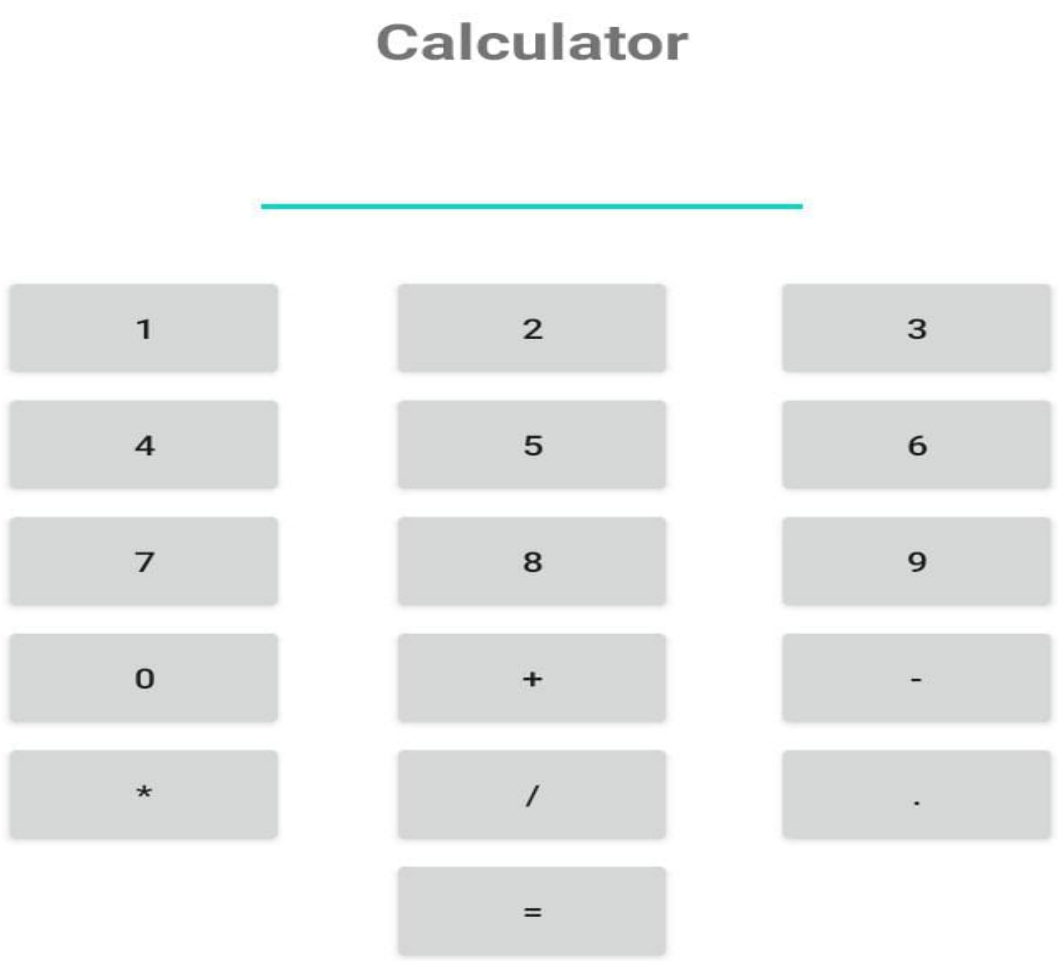
```
tools:context=".MainActivity" >
<TextView
   android:id="@+id/textView1"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_centerHorizontal="true"
   android:layout_marginTop="20dp"
   android:layout_marginLeft="14dp"
   android:text="Calculator"
   android:textSize="25sp"
   android:textStyle="bold"
   />
<Button
   android:id="@+id/button3"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBottom="@+id/button1"
   android:layout_alignParentRight="true"
   android:layout_marginRight="21dp"
   android:text="3" />
<Button
   android:id="@+id/button6"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBottom="@+id/button5"
   android:layout_alignLeft="@+id/button3"
   android:text="6" />
<EditText
   android:id="@+id/editText1"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_centerHorizontal="true"
   android:layout_marginTop="70dp"
   android:ems="10" >
   <requestFocus />
</EditText>
<Button
   android:id="@+id/button12"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button11"
   android:layout_alignBottom="@+id/button11"
   android:layout_alignRight="@+id/button9"
   android:text="-" />
<Button
   android:id="@+id/button2"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button3"
   android:layout_alignBottom="@+id/button3"
```

```
    android:layout_alignLeft="@+id/button11"
    android:text="2" />
<Button
    android:id="@+id/button9"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/button8"
    android:layout_alignBottom="@+id/button8"
    android:layout_alignLeft="@+id/button6"
    android:text="9" />
<Button
    android:id="@+id/button15"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/button14"
    android:layout_alignLeft="@+id/button12"

    android:text="." />
<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button7"
    android:layout_below="@+id/button1"
    android:layout_alignParentLeft="true"
    android:layout_marginLeft="20dp"
    android:text="4" />
<Button
    android:id="@+id/button5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button2"
    android:layout_below="@+id/button2"
    android:text="5" />
<Button
    android:id="@+id/button13"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/button14"
    android:layout_alignLeft="@+id/button10"
    android:layout_alignTop="@+id/button14"
    android:text="*" />
<Button
    android:id="@+id/button14"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button11"
    android:layout_below="@+id/button11"
    android:text="/" />
<Button
```

```
    android:id="@+id/button16"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button14"
    android:layout_below="@+id/button14"
    android:text="=" />
<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button4"
    android:layout_below="@+id/editText1"
    android:layout_alignParentLeft="true"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="18dp"
    android:text="1" />
<Button
    android:id="@+id/button8"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button5"
    android:layout_below="@+id/button5"
    android:text="8" />
<Button
    android:id="@+id/button7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button10"
    android:layout_below="@+id/button4"
    android:layout_alignParentLeft="true"
    android:layout_marginLeft="20dp"
    android:text="7" />
<Button
    android:id="@+id/button11"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/button10"
    android:layout_below="@+id/button8"
    android:layout_centerHorizontal="true"
    android:text="+" />
<Button
    android:id="@+id/button10"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/editText1"
    android:layout_below="@+id/button7"

    android:layout_alignParentLeft="true"
    android:layout_marginLeft="20dp"
```

```
        android:text="0" />
</RelativeLayout>
```

OUTPUT:



RESULT:

Thus an android application to create a native calculator is developed successfully.

EXP.NO 4 APPLICATION TO DRAW BASIC GRAPHICAL PRIMITIVES

AIM:

To develop an android application to illustrate the basic graphical primitives for line draw.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:
(JAVA CODING):

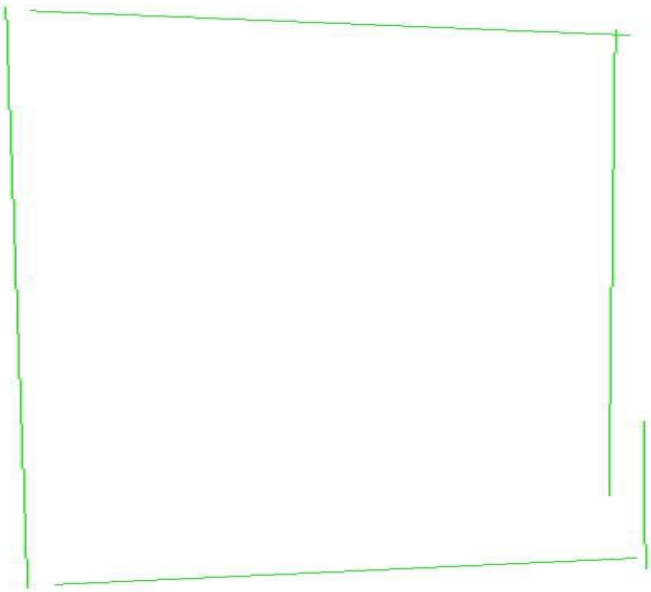
```
package com.example.mad_4_exp;
import android.app.Activity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.view.Display;
import android.view.MotionEvent;
import android.view.View;
import android.view.View.OnTouchListener;
import android.widget.ImageView;
public class MainActivity extends Activity implements OnTouchListener {
   ImageView imageView;
   Bitmap bitmap;
   Canvas canvas;
   Paint paint;
   float downx = 0, downy = 0, upx = 0, upy = 0;
   @Override
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      imageView = (ImageView) this.findViewById(R.id.imageView1);
      Display currentDisplay = getWindowManager().getDefaultDisplay();
      float dw = currentDisplay.getWidth();
      float dh = currentDisplay.getHeight();
      bitmap = Bitmap.createBitmap((int) dw, (int) dh,
            Bitmap.Config.ARGB_8888);
      canvas = new Canvas(bitmap);
      paint = new Paint();
      paint.setColor(Color.GREEN);
```

```
        imageView.setImageBitmap(bitmap);
        imageView.setOnTouchListener(this);
    }
    public boolean onTouch(View v, MotionEvent event) {
        int action = event.getAction();
        switch (action) {
            case MotionEvent.ACTION_DOWN:
                downx = event.getX();
                downy = event.getY();
                break;
            case MotionEvent.ACTION_MOVE:
                break;
            case MotionEvent.ACTION_UP:
                upx = event.getX();
                upy = event.getY();
                canvas.drawLine(downx, downy, upx, upy, paint);
                imageView.invalidate();
                break;
            case MotionEvent.ACTION_CANCEL:
                break;
            default:
                break;
        }
        return true;
    }
}
```

(XML CODING):

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent" >
    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_alignParentLeft="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentTop="true"
        android:src="@drawable/ic_launcher_background" />
</RelativeLayout>
```

OUTPUT:



RESULT:

Thus an android application to illustrate the basic graphical primitives for line draw is developed successfully.

EXP.NO 5 WRITE AN APPLICATION TO DISPLAY DIFFERENT SHAPES USING GUI

AIM:

To develop an application that draws basic graphical primitives on the screen in android.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:
(JAVA CODING):

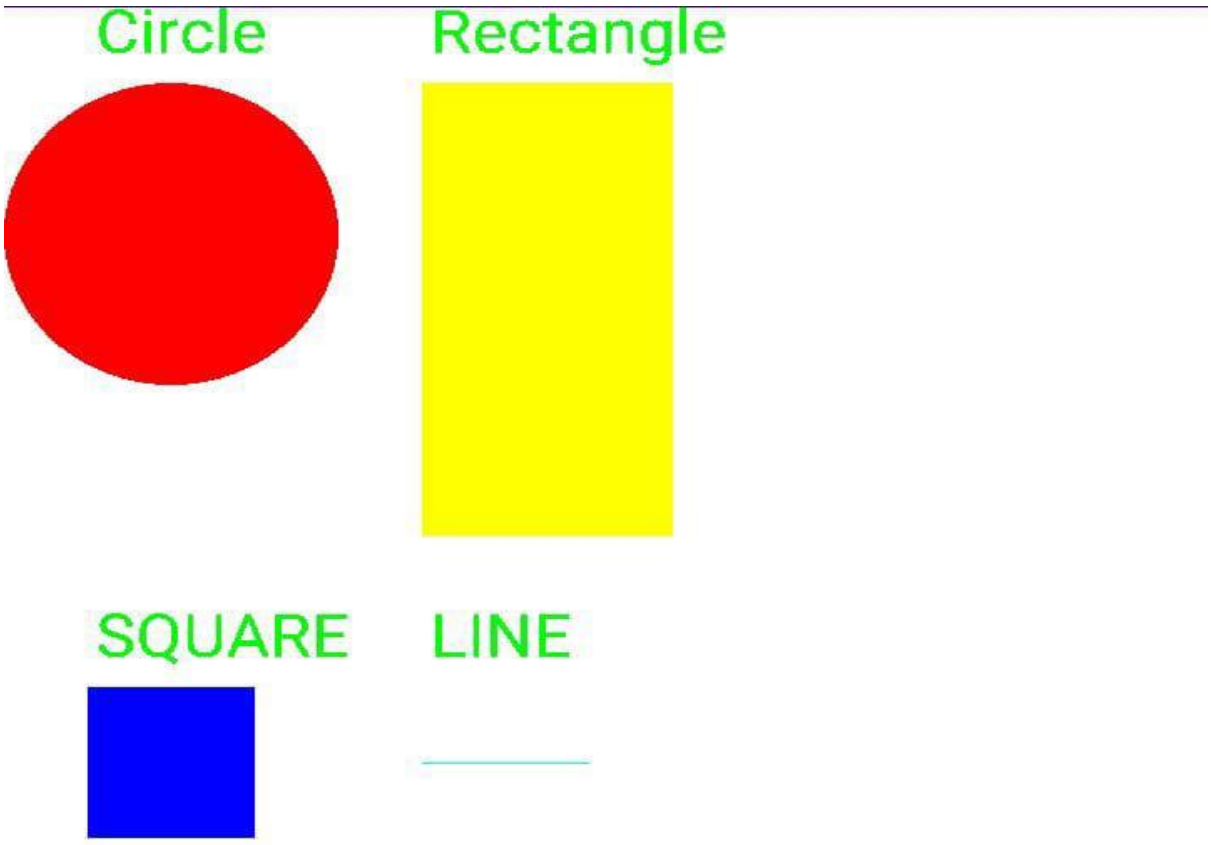
```
package com.example.mad_5_exp;
import android.app.Activity;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.view.View;
public class MainActivity extends Activity {
   /** Called when the activity is first created. */
   @Override
   public void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(new myview(this));
   }
   private class myview extends View {
      public myview(Context context)
      {
         super(context);
      }
      @Override
      protected void onDraw(Canvas canvas)
      {
         super.onDraw(canvas);
         Paint paint=new Paint();
         paint.setTextSize(40);
         paint.setColor(Color.GREEN);
         canvas.drawText("Circle", 55, 30, paint);
         paint.setColor(Color.RED);
         canvas.drawCircle(100, 150,100, paint);
```

```
            paint.setColor(Color.GREEN);
            canvas.drawText("Rectangle", 255, 30, paint);
            paint.setColor(Color.YELLOW);
            canvas.drawRect(250, 50,400,350, paint);
            paint.setColor(Color.GREEN);
            canvas.drawText("SQUARE", 55, 430, paint);
            paint.setColor(Color.BLUE);
            canvas.drawRect(50, 450,150,550, paint);
            paint.setColor(Color.GREEN);
            canvas.drawText("LINE", 255, 430, paint);
            paint.setColor(Color.CYAN);
            canvas.drawLine(250, 500, 350, 500, paint);
        }
    }
}
```

(XML CODING):

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



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

OUTPUT:



RESULT:

Thus an application that draws basic graphical primitives on the screen in android is developed successfully.

EXP. NO 6 ALARM CLOCK

AIM:

To develop an android application that creates an alarm.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:

(MAIN ACTIVITY.JAVA):

```
package com.example.mad_6_exp;
import android.app.Activity;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends Activity {

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

   @Override
   public boolean onCreateOptionsMenu(Menu menu) {
      // Inflate the menu; this adds items to the action bar if it is present.
      //getMenuInflater().inflate(R.menu.activity_main, menu);
      return true;
   }
   public void startAlert(View view) {
      EditText text = (EditText) findViewById(R.id.time);
      int i = Integer.parseInt(text.getText().toString());
      Intent intent = new Intent(this, MyBroadcastReceiver.class);
      PendingIntent pendingIntent = PendingIntent.getBroadcast(
            this.getApplicationContext(), 234324243, intent, 0);
      AlarmManager alarmManager = (AlarmManager)
getSystemService(ALARM_SERVICE);
      alarmManager.set(AlarmManager.RTC_WAKEUP, System.currentTimeMillis()
```

```
            + (i * 1000), pendingIntent);
        Toast.makeText(this, "Alarm set in " + i + " seconds",
            Toast.LENGTH_LONG).show();
    }
}
```

(MYBROADCASTRECEIVER.JAVA)

```
package com.example.mad_6_exp;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.os.Vibrator;
import android.widget.Toast;
public class MyBroadcastReceiver extends BroadcastReceiver {
    @Override
    public void onReceive(Context context, Intent intent) {
        Toast.makeText(context, "Time is up!!!!.",
            Toast.LENGTH_LONG).show();
        // Vibrate the mobile phone
        Vibrator vibrator = (Vibrator) context
            .getSystemService(Context.VIBRATOR_SERVICE);
        vibrator.vibrate(2000);
    }
}
```

(ACTIVITY-MAIN.XML)

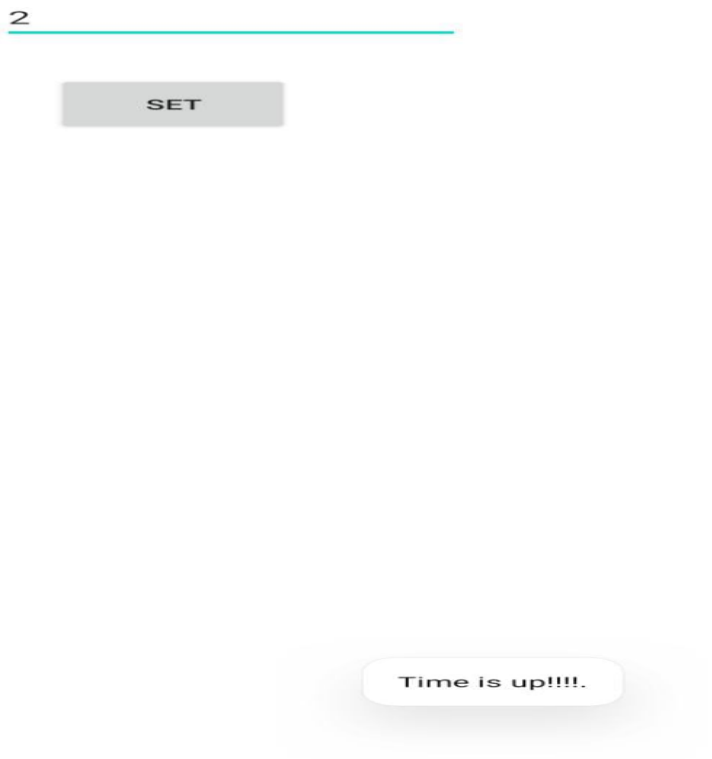
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" >
    <EditText
        android:id="@+id/time"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginTop="28dp"
        android:ems="10"
        android:hint="Number of seconds"
        android:inputType="numberDecimal" />
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginLeft="20dp"
```

```
        android:layout_marginTop="95dp"
        android:onClick="startAlert"
        android:text="Set" />
</RelativeLayout>
```

ANDROID MANIFEST.XML

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mad_6_exp">
    <uses-permission android:name="android.permission.VIBRATE" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Mad_6_exp">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <receiver android:name=".MyBroadcastReceiver" />

    </application>

</manifest>
```

OUTPUT:



RESULT:

Thus an android application that creates an alarm is developed successfully.

EXP.NO 7 MULTI THREADING

AIM:

To develop an android application for multi threading.

PROCEDURE:

1)Open Android Studio.
2)Click on File menu->new ->New Project.
3)Select the project template as EMPTY ACTIVITY->Next
4)Give a name for the android project->Finish.
5)Open the layout for design which is present in Res folder
6)Write the necessary code in .java and .xml file.
7)To run the project, click run 'app'.

PROGRAM:
(JAVA CODING):

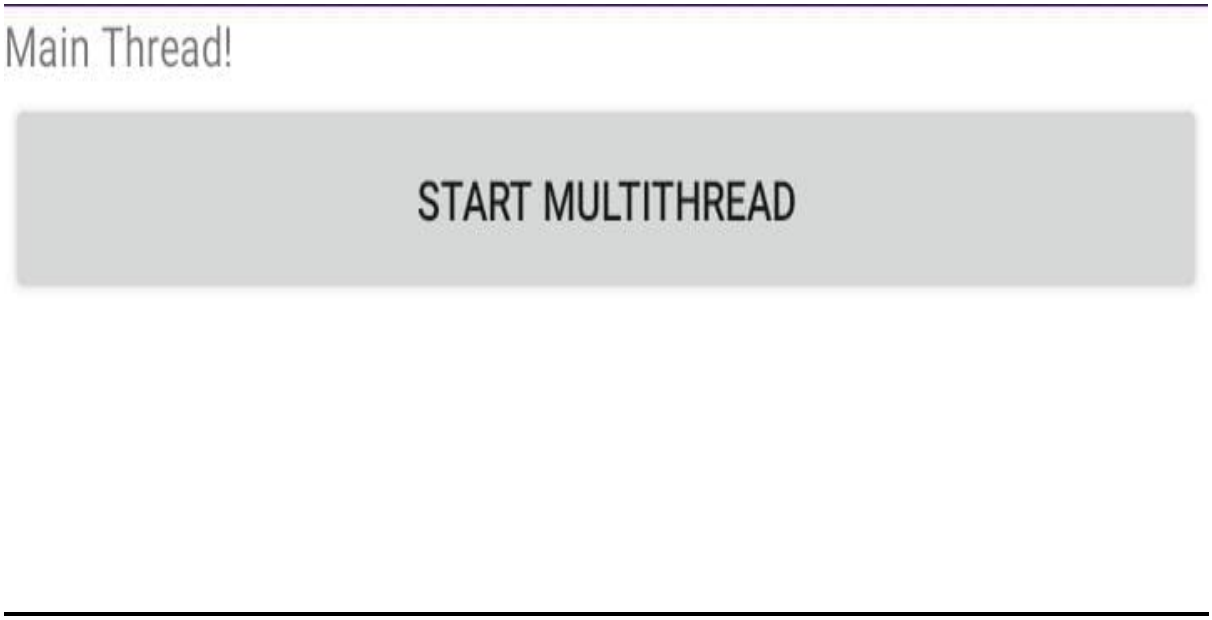
```
package com.example.mad_7_exp;
import android.os.Bundle;
import android.os.Handler;
import android.annotation.SuppressLint;
import android.app.Activity;
import android.view.View;
import android.widget.TextView;
public class MainActivity extends Activity {
   private TextView tvOutput;
   private  static final int t1=1;
   private  static final int t2=2;
   private  static final int t3=3;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      tvOutput= (TextView)findViewById(R.id.textView1);
   }
   public void fetchData(View v)
   {
      tvOutput.setText("Main thread");
      thread1.start();
      thread2.start();
      thread3.start();
   }
   Thread thread1=new Thread(new Runnable(){
      public void run(){
         for(int i=0;i<5;i++)
         {
            try {
               Thread.sleep(1000);
            }
            catch(InterruptedException e){
```

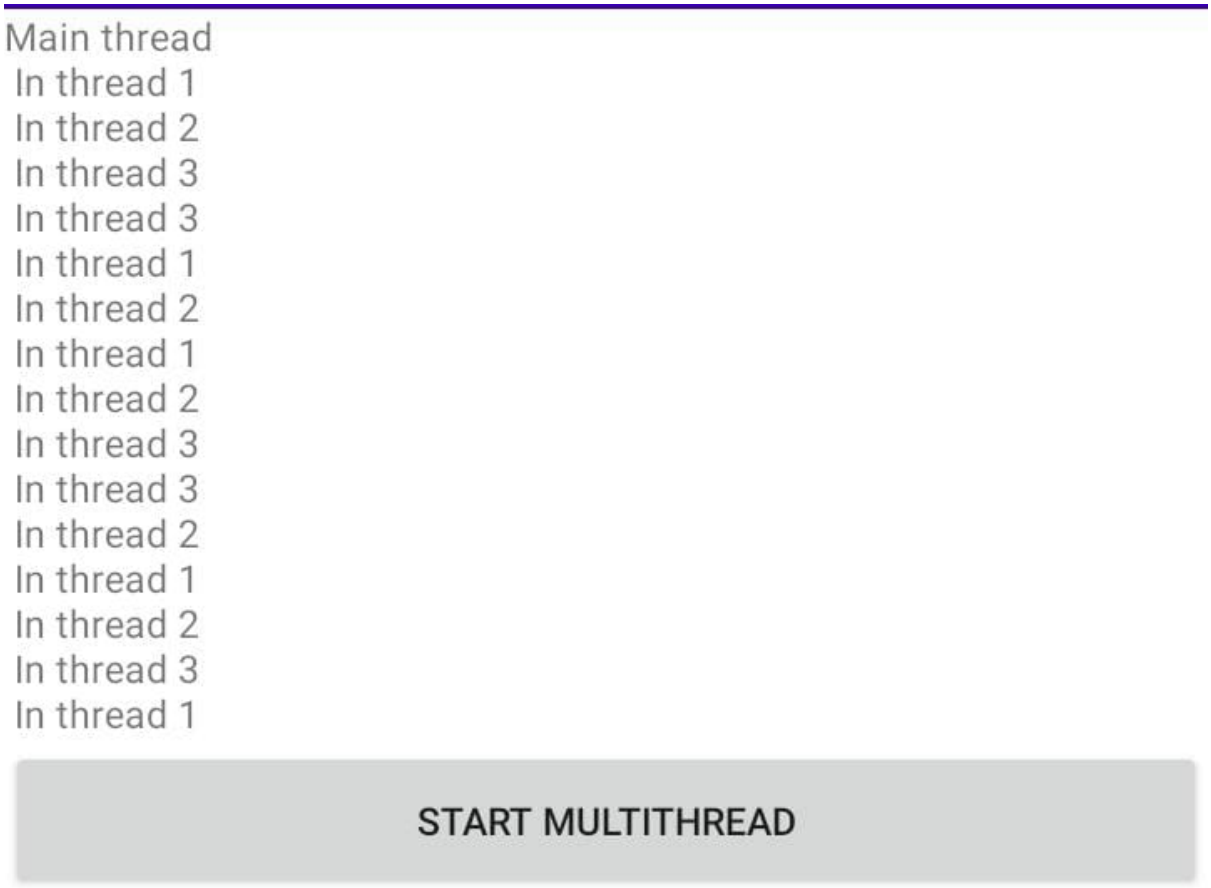
```
                e.printStackTrace();
            }
            handler.sendEmptyMessage(t1);
        }
    }
});
Thread thread2=new Thread(new Runnable(){
    public void run() {
        for(int i=0;i<5;i++) {
            try{
                Thread.sleep(1000);
            }catch(InterruptedException e) {
                e.printStackTrace();
            }
            handler.sendEmptyMessage(t2);

        }
    }
});
Thread thread3=new Thread(new Runnable(){
    public void run() {
        for(int i=0;i<5;i++) {
            try{
                Thread.sleep(1000);
            }catch(InterruptedException e) {
                e.printStackTrace();
            }
            handler.sendEmptyMessage(t3);

        }
    }
});

@SuppressLint("HandlerLeak")
Handler handler=new Handler()
{
    public void handleMessage(android.os.Message msg) {
        if(msg.what==t1) {
            tvOutput.append("\n In thread 1");
        }
        if(msg.what==t2) {
            tvOutput.append("\n In thread 2");
        }
        if(msg.what==t3) {
            tvOutput.append("\n In thread 3");
        }} };}
```

(XML CODING):

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:id="@+id/info">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Main Thread!" />
    <Button
        android:id="@+id/button1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="fetchData"
        android:text="Start MULTITHREAD" />

</LinearLayout>
```

OUTPUT:





RESULT:

Thus an android application for multi threading is developed successfully.