

PROGRAM 1:

MainActivity.java

```
package com.example.expr1;
import android.graphics.Color;
//import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{
    int ch=1;
    float font=30;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final TextView t= (TextView) findViewById(R.id.textView);
        Button b1= (Button) findViewById(R.id.button1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                t.setTextSize(font);
                font = font + 5;
                if (font == 50)
                    font = 30;
            }
        });
    }
}
```

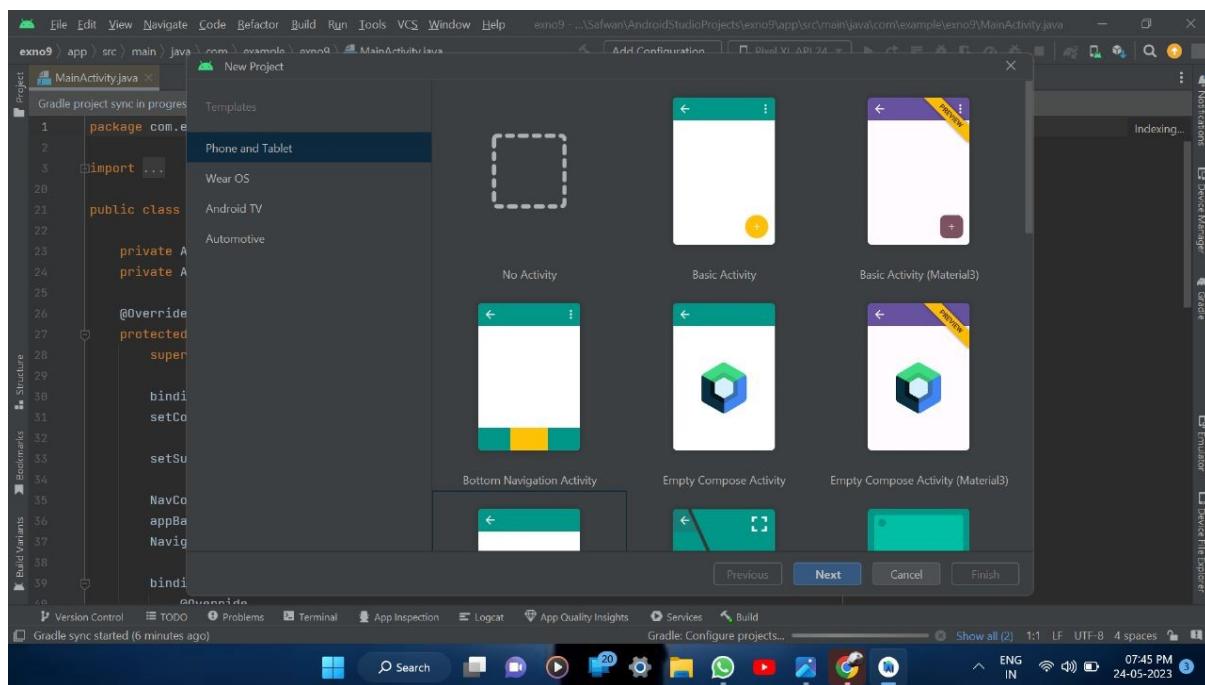
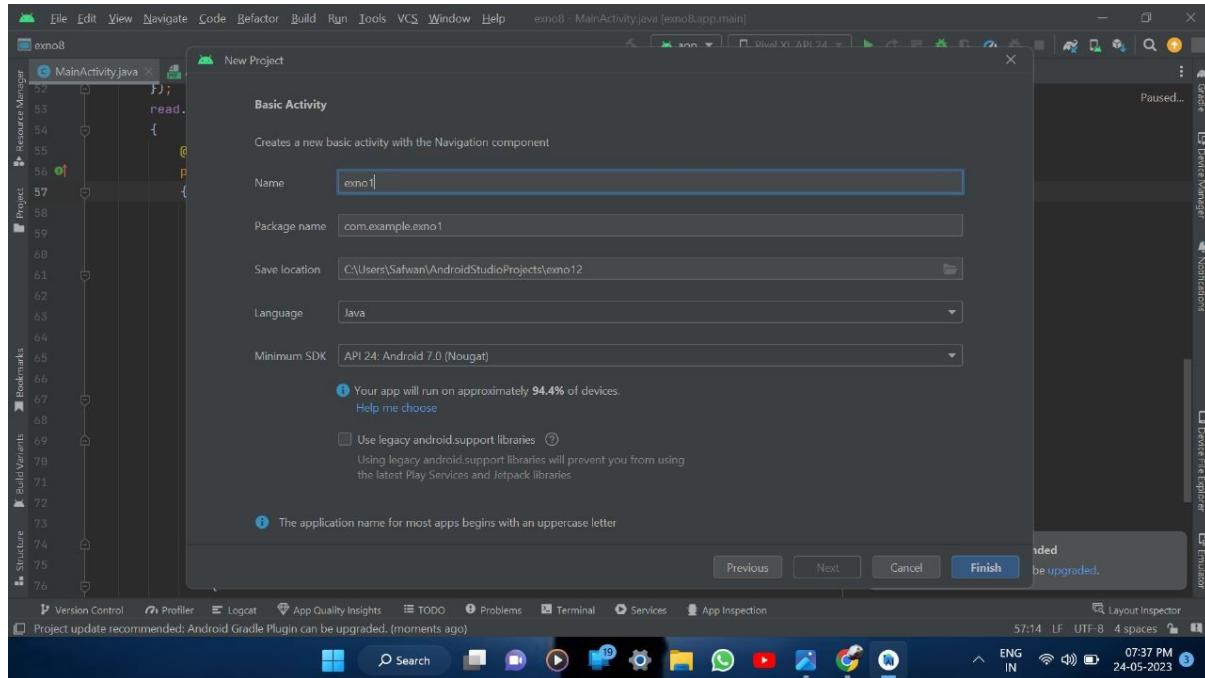
```
        }  
    });  
    Button b2= (Button) findViewById(R.id.button2);  
    b2.setOnClickListener(new View.OnClickListener() {  
        @Override  
        public void onClick(View v) {  
            switch (ch) {  
                case 1:  
                    t.setTextColor(Color.RED);  
                    break;  
                case 2:  
                    t.setTextColor(Color.GREEN);  
                    break;  
                case 3:  
                    t.setTextColor(Color.BLUE);  
                    break;  
                case 4:  
                    t.setTextColor(Color.CYAN);  
                    break;  
                case 5:  
                    t.setTextColor(Color.YELLOW);  
                    break;  
                case 6:  
                    t.setTextColor(Color.MAGENTA);  
                    break;  
            }  
            ch++;  
            if (ch == 7)  
                ch = 1;  
        }  
    });  
}
```

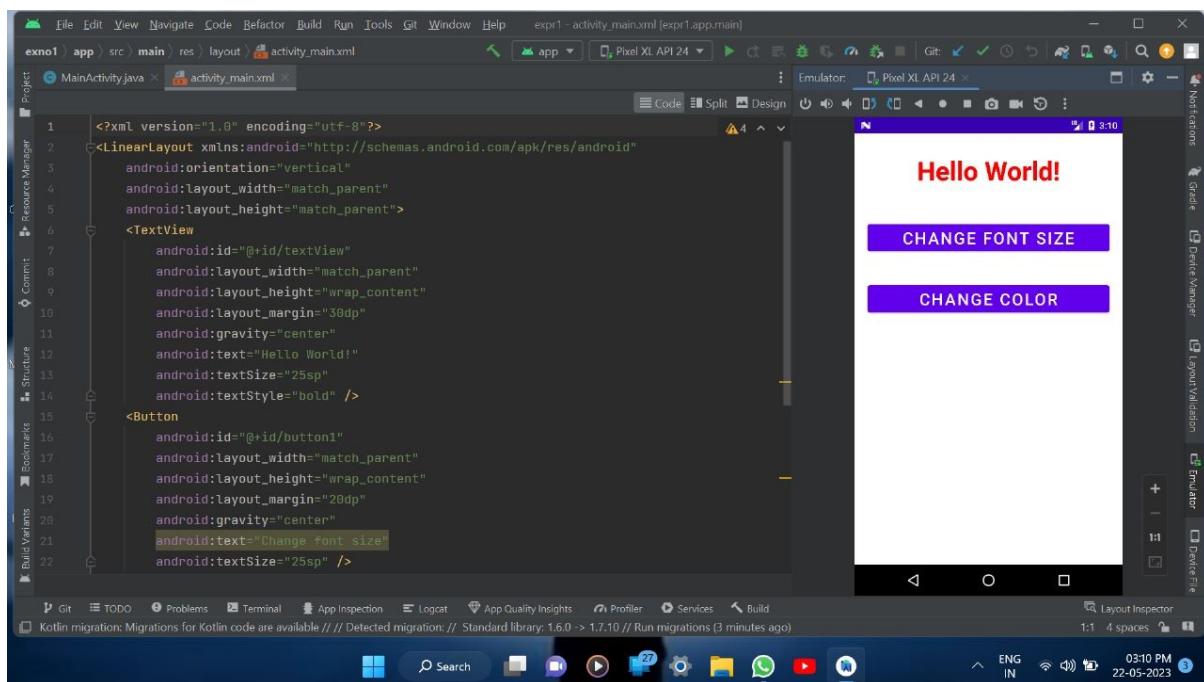
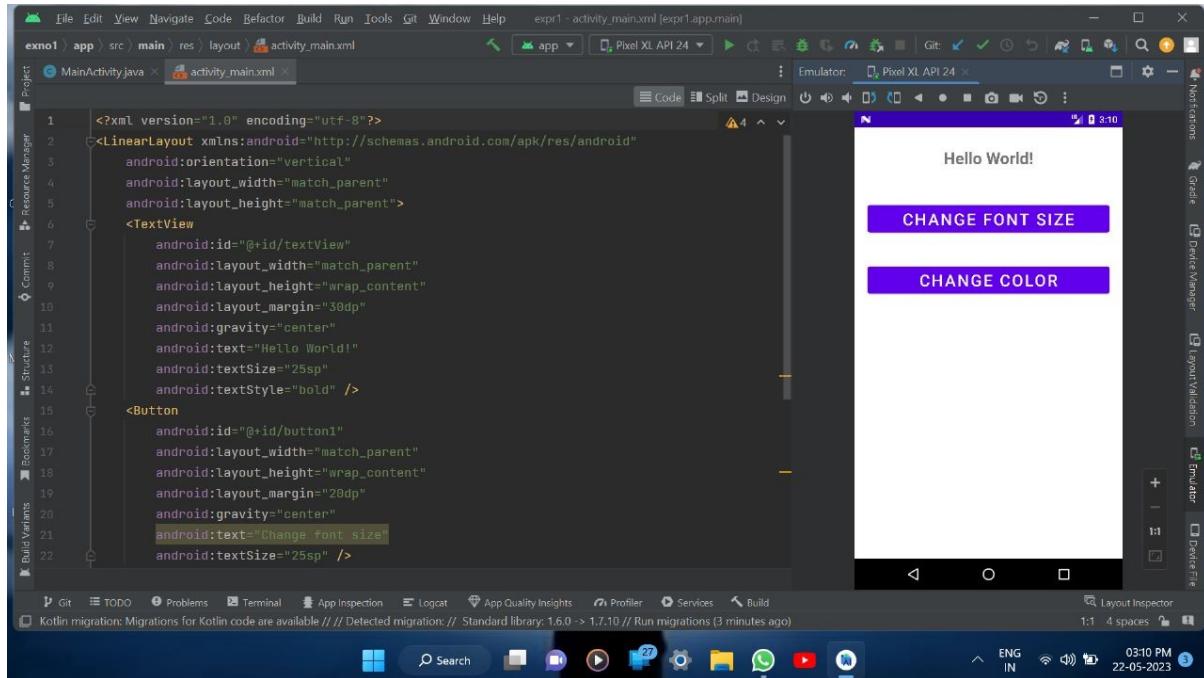
```
    }  
});  
}}  
activity_main.xml
```

```
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:orientation="vertical"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
    <TextView  
        android:id="@+id/textView"  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:layout_margin="30dp"  
        android:gravity="center"  
        android:text="Hello World!"  
        android:textSize="25sp"  
        android:textStyle="bold" />  
    <Button  
        android:id="@+id/button1"  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:layout_margin="20dp"  
        android:gravity="center"  
        android:text="Change font size"  
        android:textSize="25sp" />  
    <Button  
        android:id="@+id/button2"  
        android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:gravity="center"
    android:text="Change color"
    android:textSize="25sp" />
</LinearLayout>
```

OUTPUT:





RESULT:

Thus a simple Android Application that uses Gui components, fonts and color is designed Implemented and executed sucessfully

PROGRAM 2:

MainActivity.java

```
package com.example.exno2;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.ArrayAdapter;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Spinner;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity {  
    //Defining the Views  
    EditText e1,e2;  
    Button bt;  
    Spinner s;  
    //Data for populating in Spinner  
    String [] dept_array={"CSE","ECE","IT","Mech","Civil"};  
    String name,reg,dept;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        //Referring the Views  
        e1= (EditText) findViewById(R.id.editText);  
        e2= (EditText) findViewById(R.id.editText2);  
        bt= (Button) findViewById(R.id.button);  
        s= (Spinner) findViewById(R.id.spinner);  
        //Creating Adapter for Spinner for adapting the data from array to
```

Spinner

```
ArrayAdapter adapter= new  
ArrayAdapter(MainActivity.this,android.R.layout.simple_spinner_item,de  
pt_array);  
s.setAdapter(adapter);  
//Creating Listener for Button  
bt.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        //Getting the Values from Views(Edittext & Spinner)  
        name=e1.getText().toString();  
        reg=e2.getText().toString();  
        dept=s.getSelectedItem().toString();  
        //Intent For Navigating to Second Activity  
        Intent i = new Intent(MainActivity.this,SecondActivity.class);  
        //For Passing the Values to Second Activity  
        i.putExtra("name_key", name);  
        i.putExtra("reg_key",reg);  
        i.putExtra("dept_key", dept);  
        startActivity(i);  
    }  
});  
}};
```

SecondActivity.java

```
package com.example.exno2;  
import android.content.Intent;  
//import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
public class SecondActivity extends AppCompatActivity {
```

```
TextView t1,t2,t3;  String name,reg,dept;  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_second);  
    t1= (TextView) findViewById(R.id.textView1);  
    t2= (TextView) findViewById(R.id.textView2);  
    t3= (TextView) findViewById(R.id.textView3);  
    //Getting the Intent  
    Intent i = getIntent();  
    //Getting the Values from First Activity using the Intent received  
    name=i.getStringExtra("name_key");  
    reg=i.getStringExtra("reg_key");  
    dept=i.getStringExtra("dept_key");  
    //Setting the Values to Intent  
    t1.setText(name);  
    t2.setText(reg);  
    t3.setText(dept);  }}}
```

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">  
    <LinearLayout  
        android:layout_width="match_parent"  
        android:layout_height="100dp">  
        <TextView
```

```
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:text="Details Form"
    android:textSize="25sp"
    android:gravity="center"/>
</LinearLayout>
```

```
<GridLayout
    android:id="@+id/gridLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="100dp"
    android:layout_marginBottom="200dp"
    android:columnCount="2"
    android:rowCount="3">
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="0"
        android:layout_column="0"
        android:text="Name"
        android:textSize="20sp"
        android:gravity="center"/>
    <EditText
        android:id="@+id/editText"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_row="0"
    android:layout_column="1"
    android:ems="10"/>

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_row="1"
    android:layout_column="0"
    android:text="Reg.No"
    android:textSize="20sp"
    android:gravity="center"/>

<EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_row="1"
    android:layout_column="1"
    android:inputType="number"
    android:ems="10"/>

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

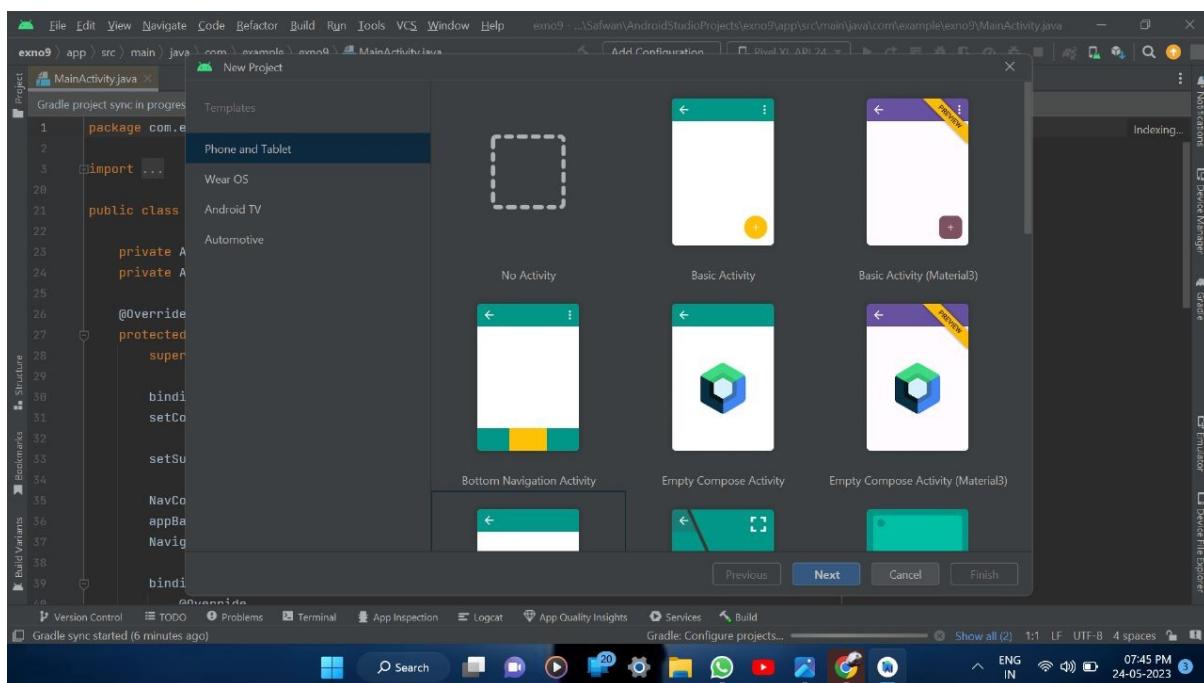
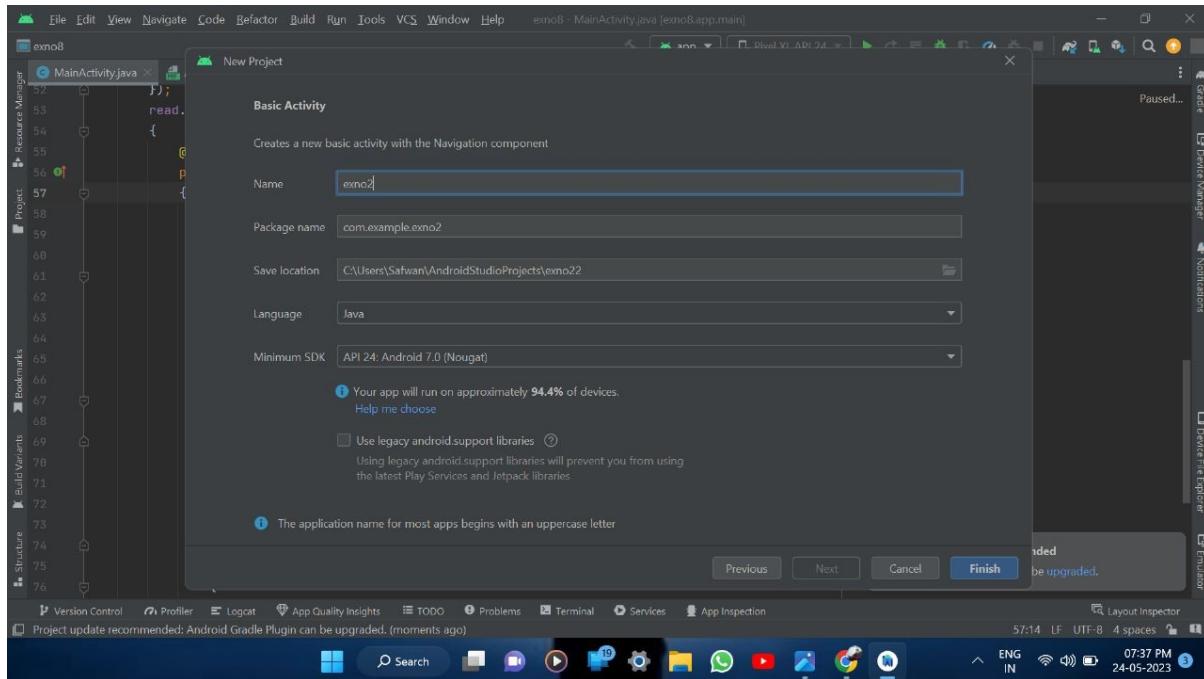
```
    android:layout_margin="10dp"
    android:layout_row="2"
    android:layout_column="0"
    android:text="Dept"
    android:textSize="20sp"
    android:gravity="center"/>
<Spinner
    android:id="@+id/spinner"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_row="2"
    android:layout_column="1"
    android:spinnerMode="dropdown"/>
</GridLayout>
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentBottom="true"
    android:layout_centerInParent="true"
    android:layout_marginBottom="150dp"
    android:text="Submit"/>
</RelativeLayout>
```

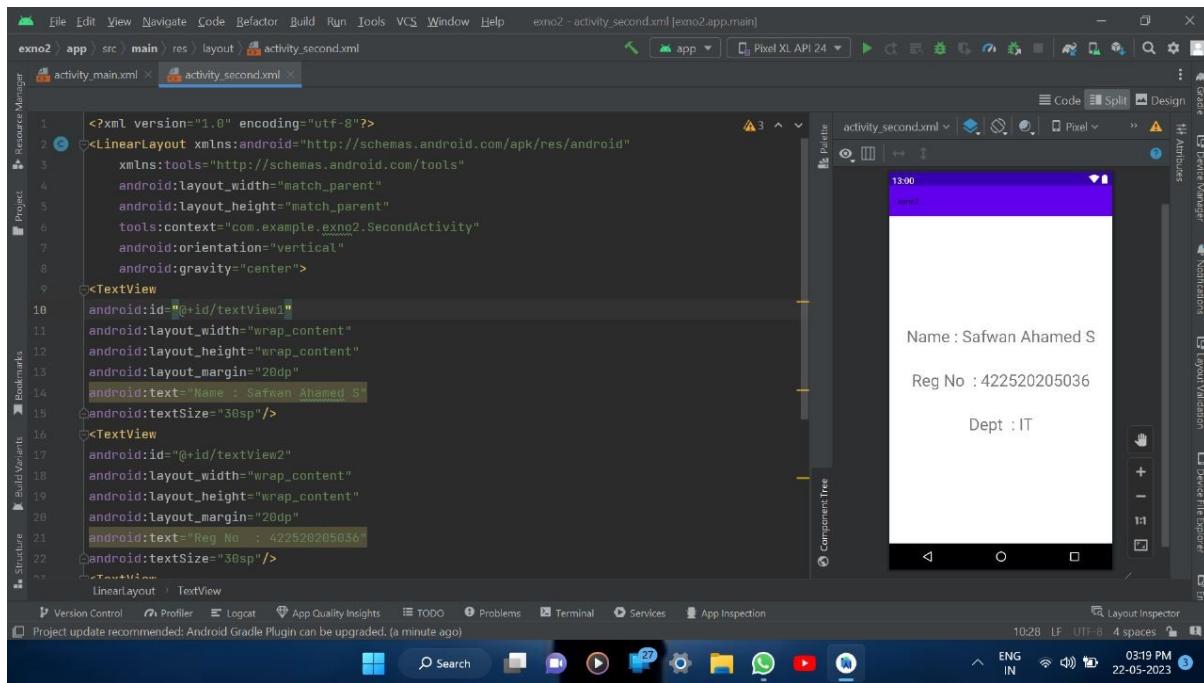
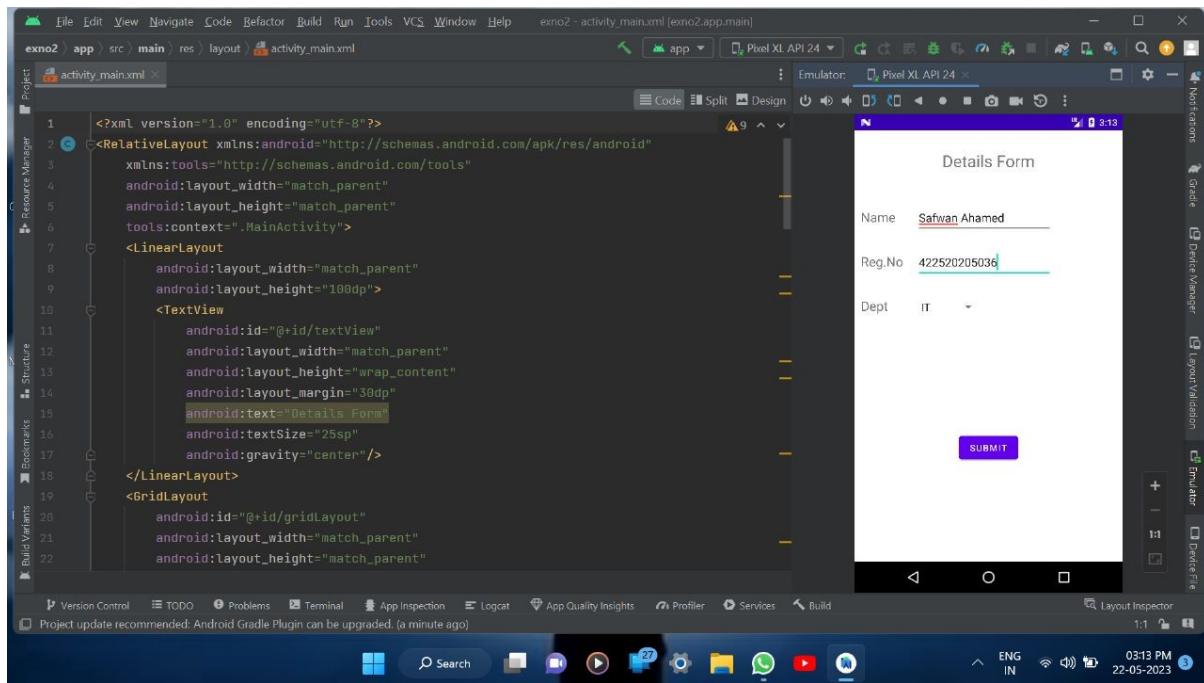
activity_second.xml

```
<?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"
    tools:context="com.example.exno2.SecondActivity"
    android:orientation="vertical"
    android:gravity="center">
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:text="New Text"
        android:textSize="30sp"/>
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:text="New Text"
        android:textSize="30sp"/>
    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:text="New Text"
        android:textSize="30sp"/>
</LinearLayout>
```

OUTPUT





RESULT

Thus a simple Android Application that uses Layout manager and event listner is designed Implemented and executed sucessfully

PROGRAM 3:

MainActivity.java

```
package com.example.exno3;  
import android.app.Activity;  
import android.graphics.Bitmap;  
import android.graphics.Canvas;  
import android.graphics.Color;  
import android.graphics.Paint;  
import android.graphics.drawable.BitmapDrawable;  
import android.os.Bundle;  
import android.widget.ImageView;  
public class MainActivity extends Activity  
{  
    @Override  
    public void onCreate(Bundle savedInstanceState)  
    {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        //Creating a Bitmap  
        Bitmap bg = Bitmap.createBitmap(720, 1280,  
        Bitmap.Config.ARGB_8888);  
        //Setting the Bitmap as background for the ImageView  
        ImageView i = (ImageView) findViewById(R.id.imageView);  
        i.setBackgroundDrawable(new BitmapDrawable(bg));  
        //Creating the Canvas Object  
        Canvas canvas = new Canvas(bg);  
        //Creating the Paint Object and set its color & TextSize  
        Paint paint = new Paint();  
        paint.setColor(Color.BLUE);
```

```
paint.setTextSize(50);

//To draw a Rectangle

    canvas.drawText("Rectangle", 420, 150, paint);
    canvas.drawRect(400, 200, 650, 700, paint);

//To draw a Circle

    canvas.drawText("Circle", 120, 150, paint);
    canvas.drawCircle(200, 350, 150, paint);

//To draw a Square

    canvas.drawText("Square", 120, 800, paint);
    canvas.drawRect(50, 850, 350, 1150, paint);

//To draw a Line

    canvas.drawText("Line", 480, 800, paint);
    canvas.drawLine(520, 850, 520, 1150, paint);

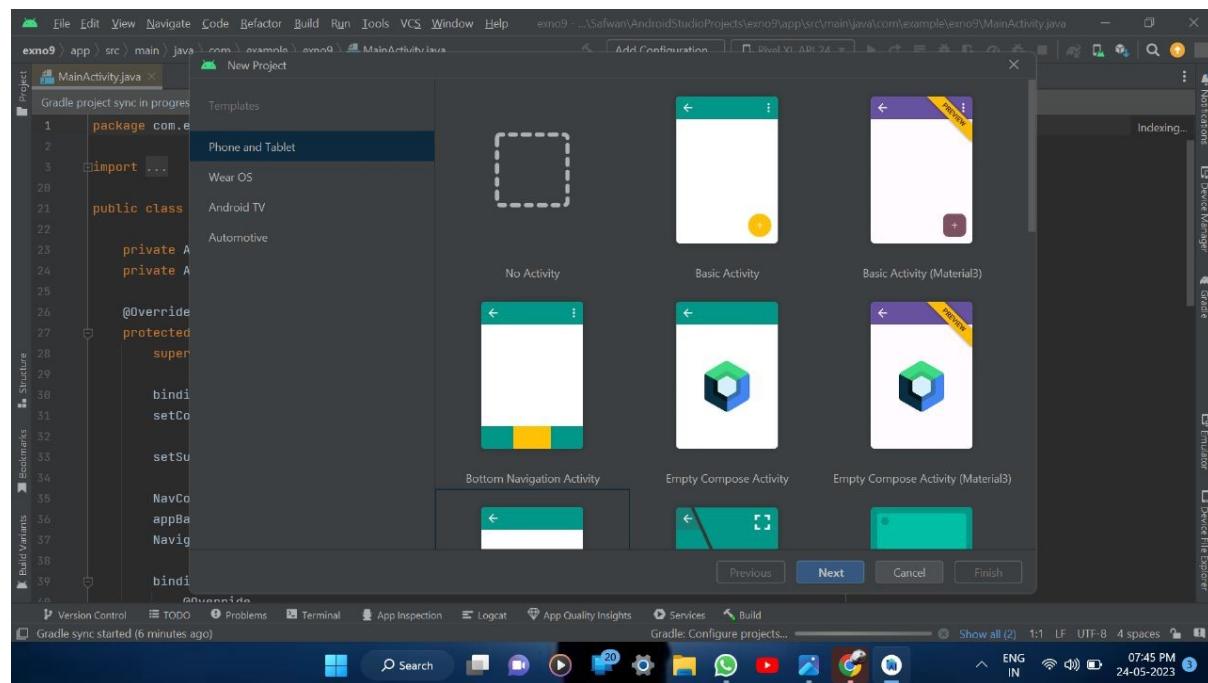
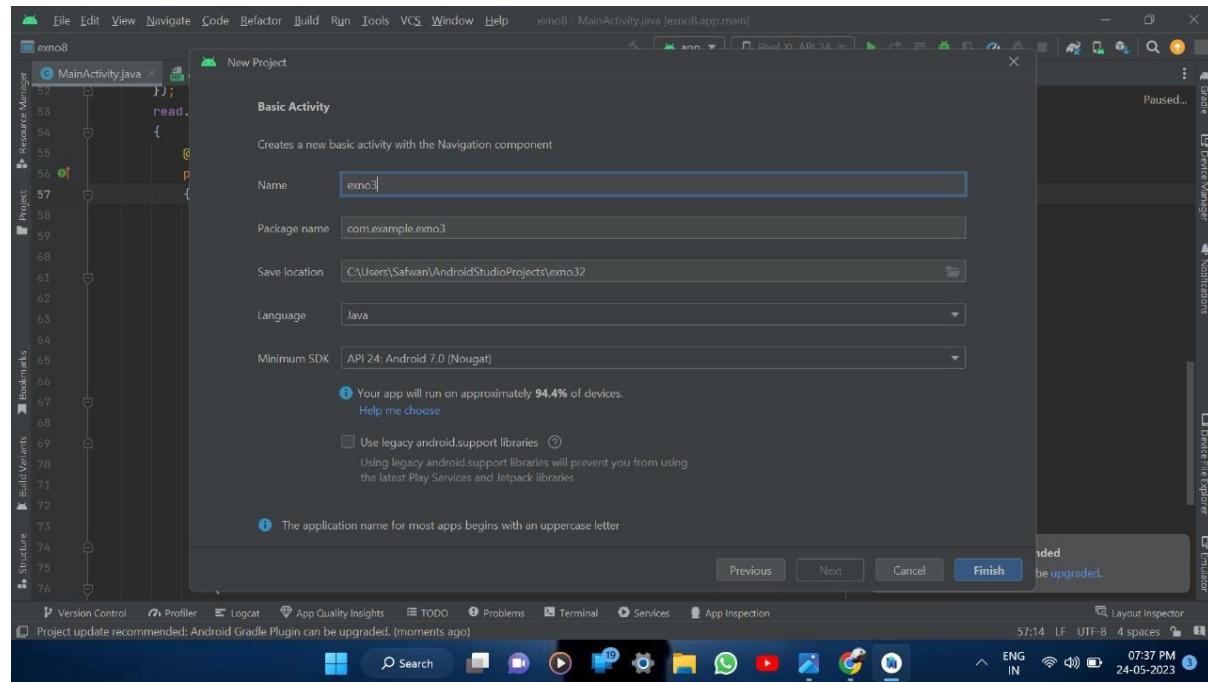
}
```

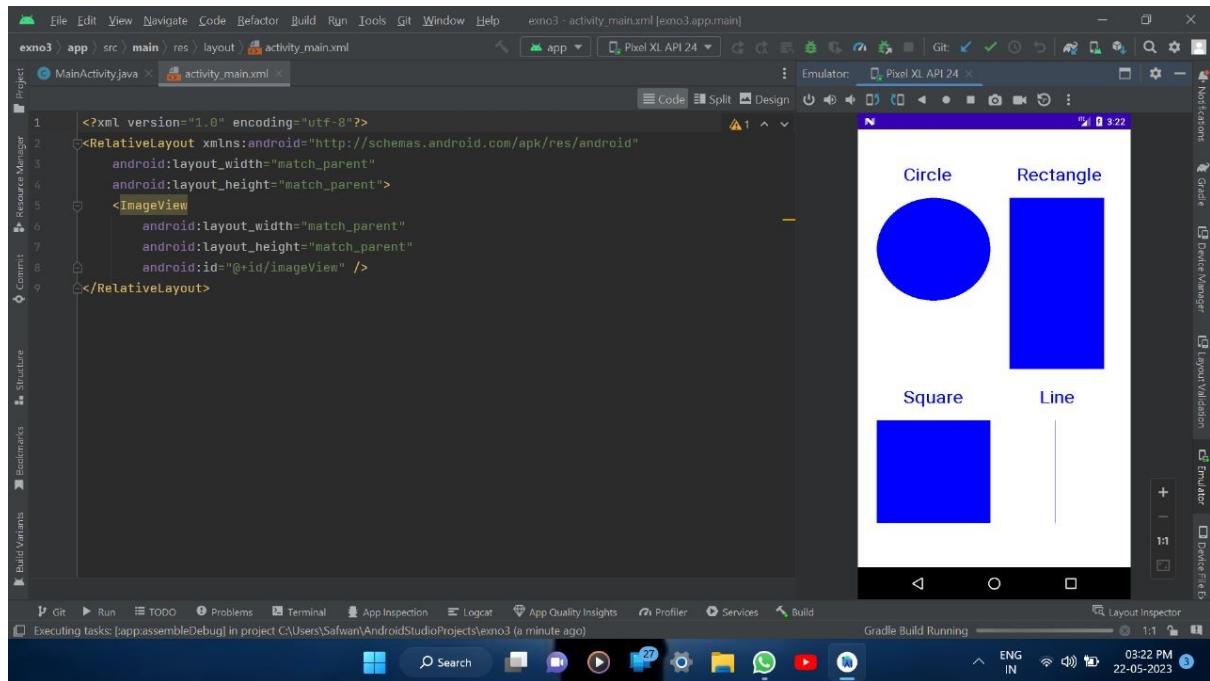
```
}
```

activity_main.xml

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

OUTPUT





RESULT:

Thus a simple Android Application that draws basic graphical primitives on the screen is designed Implemented and executed sucessfully

PROGRAM 4:

MainActivity.java

```
package com.example.exno4;  
import android.app.Activity;  
import android.app.AlertDialog.Builder;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.view.View.OnClickListener;  
import android.widget.Button;  
import android.widget.EditText;  
public class MainActivity extends Activity implements OnClickListener  
{  
    EditText Rollno,Name,Marks;  
    Button Insert,Delete,Update,View,ViewAll;  
    SQLiteDatabase db;  
    /** Called when the activity is first created. */  
    @Override  
    public void onCreate(Bundle savedInstanceState)  
    {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        Rollno=(EditText)findViewById(R.id.Rollno);  
        Name=(EditText)findViewById(R.id.Name);  
        Marks=(EditText)findViewById(R.id.Marks);  
        Insert=(Button)findViewById(R.id.Insert);  
        Delete=(Button)findViewById(R.id.Delete);
```

```
Update=(Button)findViewById(R.id.Update);
View=(Button)findViewById(R.id.View);
ViewAll=(Button)findViewById(R.id.ViewAll);
Insert.setOnClickListener(this);
Delete.setOnClickListener(this);
Update.setOnClickListener(this);
View.setOnClickListener(this);
ViewAll.setOnClickListener(this);

// Creating database and table
db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE,
null);
db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno
VARCHAR,name VARCHAR,marks VARCHAR);");

}

public void onClick(View view)
{
// Inserting a record to the Student table
if(view==Insert)
{
// Checking for empty fields
if(Rollno.getText().toString().trim().length()==0||
Name.getText().toString().trim().length()==0||
Marks.getText().toString().trim().length()==0)
{
showMessage("Error", "Please enter all values");
return;
}
db.execSQL("INSERT INTO student VALUES(\""+Rollno.getText()
+"','"++Name.getText()+
"',\"'+Marks.getText()+"');");
}
```

```
showMessage("Success", "Record added");

        clearText();    }

// Deleting a record from the Student table

if(view==Delete)

{

// Checking for empty roll number

if(Rollno.getText().toString().trim().length()==0)

{

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

    return;

}

Cursor c=db.rawQuery("SELECT * FROM student WHERE

rollno='"+Rollno.getText()+"'", null);

if(c.moveToFirst())

{

    db.execSQL("DELETE FROM student WHERE

rollno='"+Rollno.getText()+"'");

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

}

else

{

    showMessage("Error", "Invalid Rollno");

}

clearText();

}

// Updating a record in the Student table

if(view==Update)

{

// Checking for empty roll number
```

```
if(Rollno.getText().toString().trim().length()==0)
{
    showMessage("Error", "Please enter Rollno");
    return;
}

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

if(c.moveToFirst())
{
    db.execSQL("UPDATE student SET name='"+ + Name.getText() +
",marks='"+ + Marks.getText() +
"' WHERE rollno='"++Rollno.getText()+"'");
    showMessage("Success", "Record Modified");
}
else {
    showMessage("Error", "Invalid Rollno");
}
clearText();
}

// Display a record from the Student table
if(view==View)
{
    // Checking for empty roll number
    if(Rollno.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Rollno");
        return;
    }

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

    if(c.moveToFirst())
```

```
{  
    Name.setText(c.getString(1));  
    Marks.setText(c.getString(2));  
}  
else  
{  
    showMessage("Error", "Invalid Rollno");  
    clearText();  
}  
}  
  
// Displaying all the records  
if(view==ViewAll)  
{  
    Cursor c=db.rawQuery("SELECT * FROM student", null);  
    if(c.getCount()==0)  
    {  
        showMessage("Error", "No records found");  
        return;  
    }  
    StringBuffer buffer=new StringBuffer();  
    while(c.moveToNext())  
    {  
        buffer.append("Rollno: "+c.getString(0)+"\n");  
        buffer.append("Name: "+c.getString(1)+"\n");  
        buffer.append("Marks: "+c.getString(2)+"\n\n");  
    }  
    showMessage("Student Details", buffer.toString());  
}  
}
```

```
public void showMessage(String title, String message)
{
    Builder builder = new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}

public void clearText()
{
    Rollno.setText("");
    Name.setText("");
    Marks.setText("");
    Rollno.requestFocus();
}

}
```

activity_main.xml

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

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

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

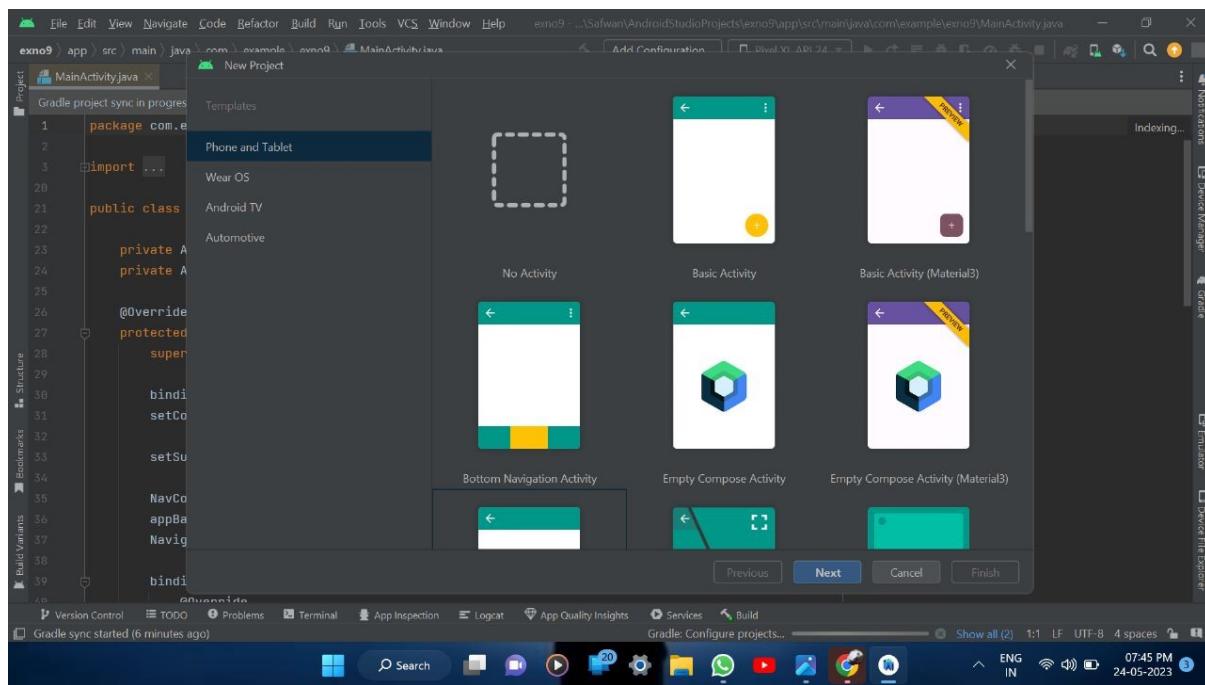
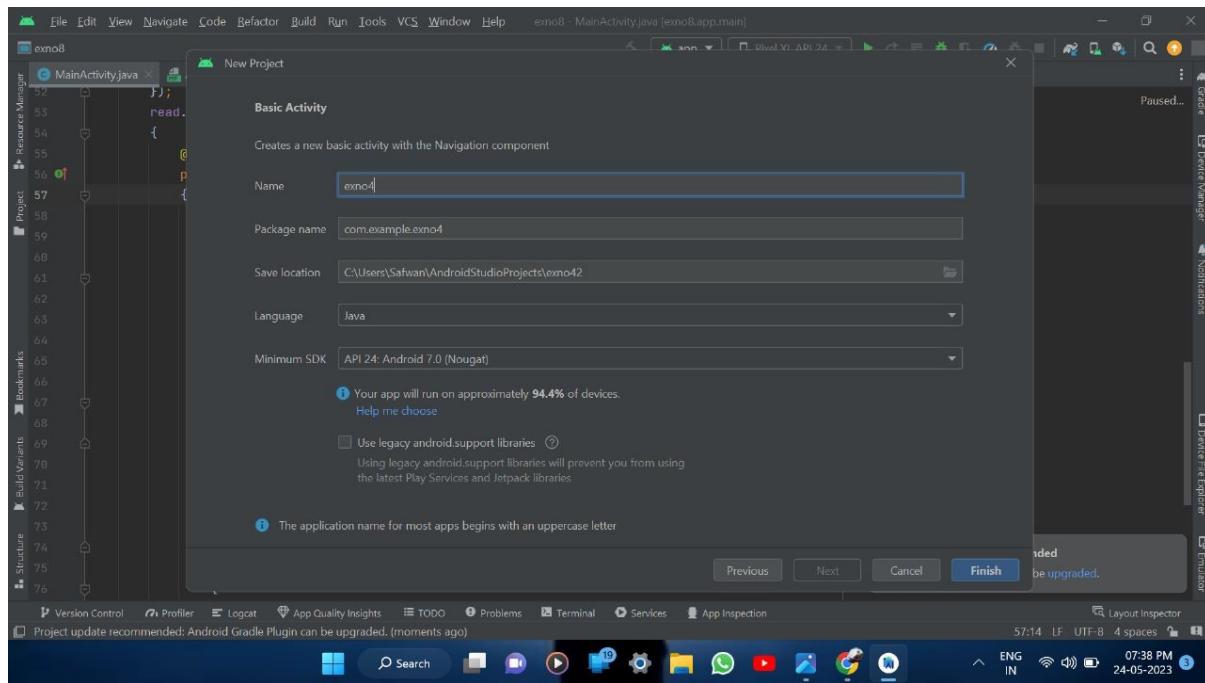
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="160dp"
    android:text="Enter Name:"
    android:textSize="20sp" />

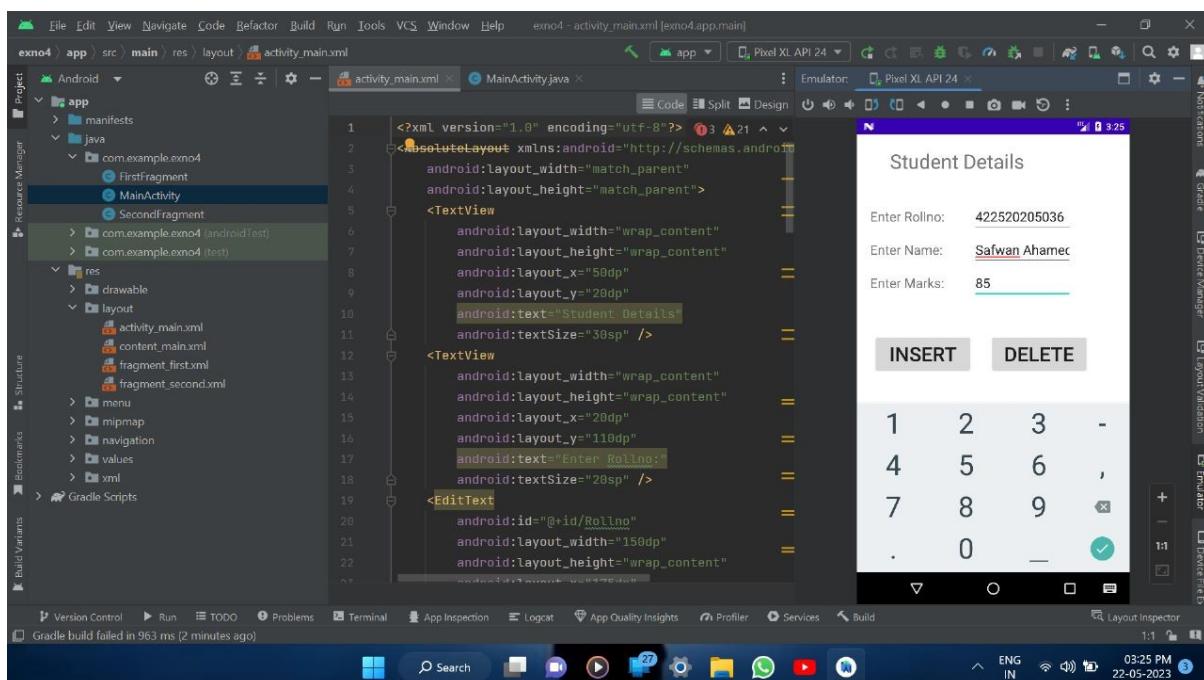
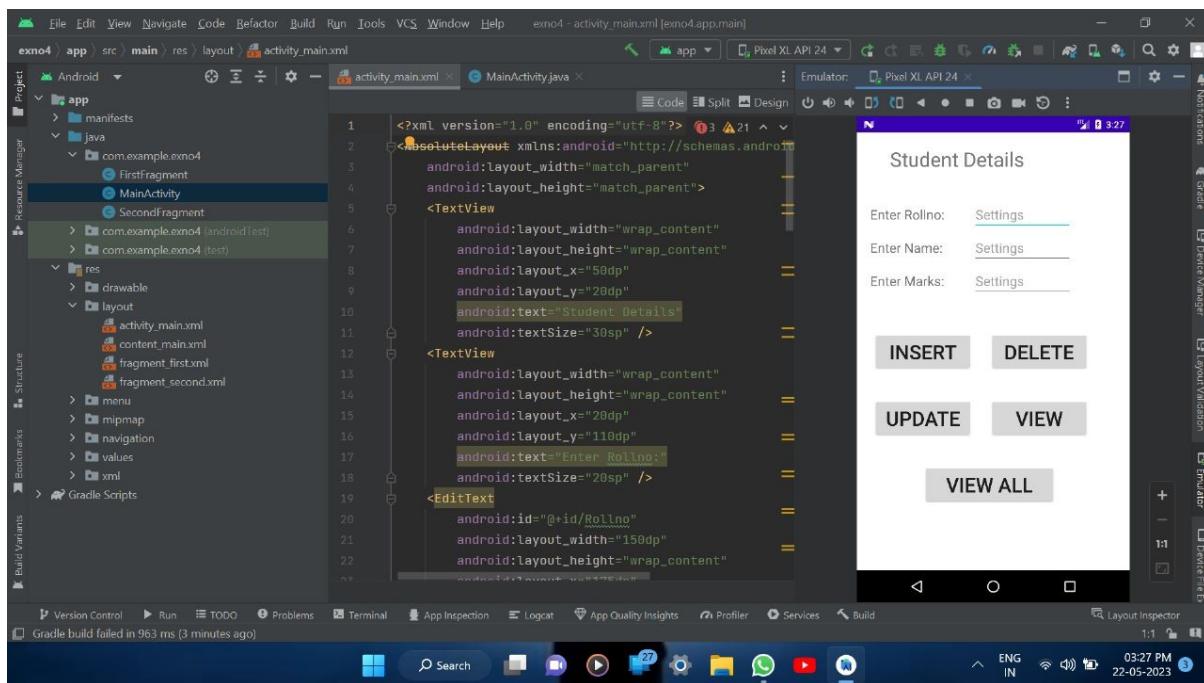
<EditText
    android:id="@+id/Name"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="150dp"
    android:inputType="text"
    android:textSize="20sp" />
```

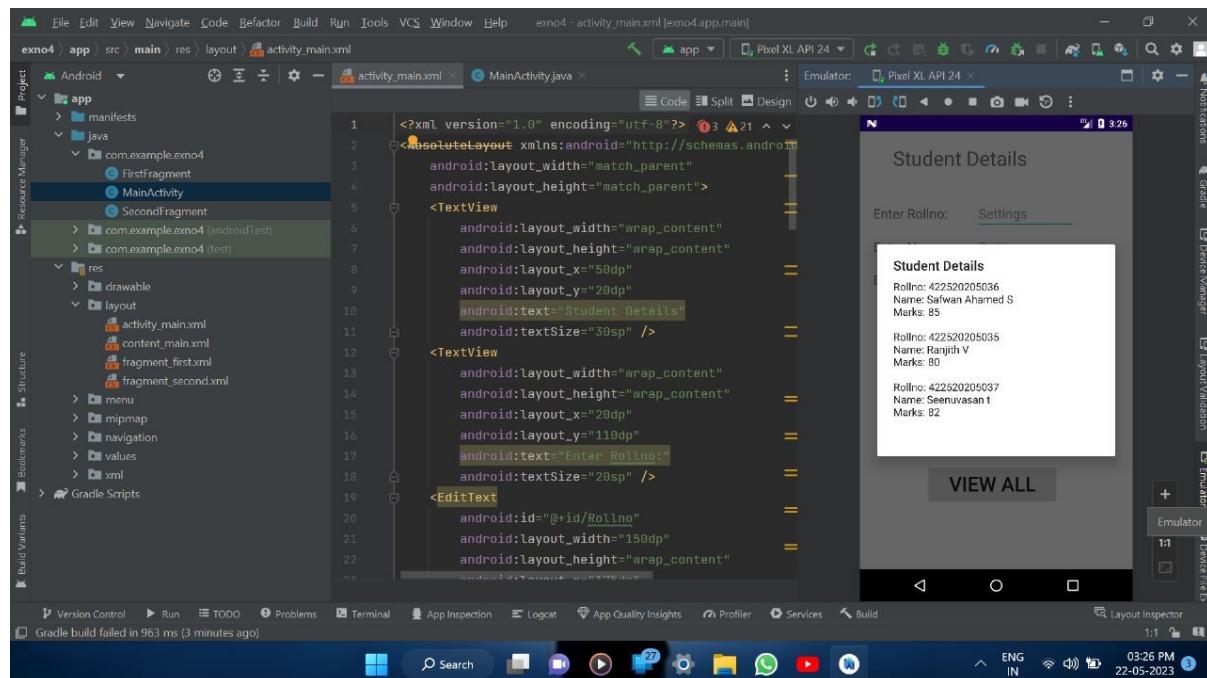
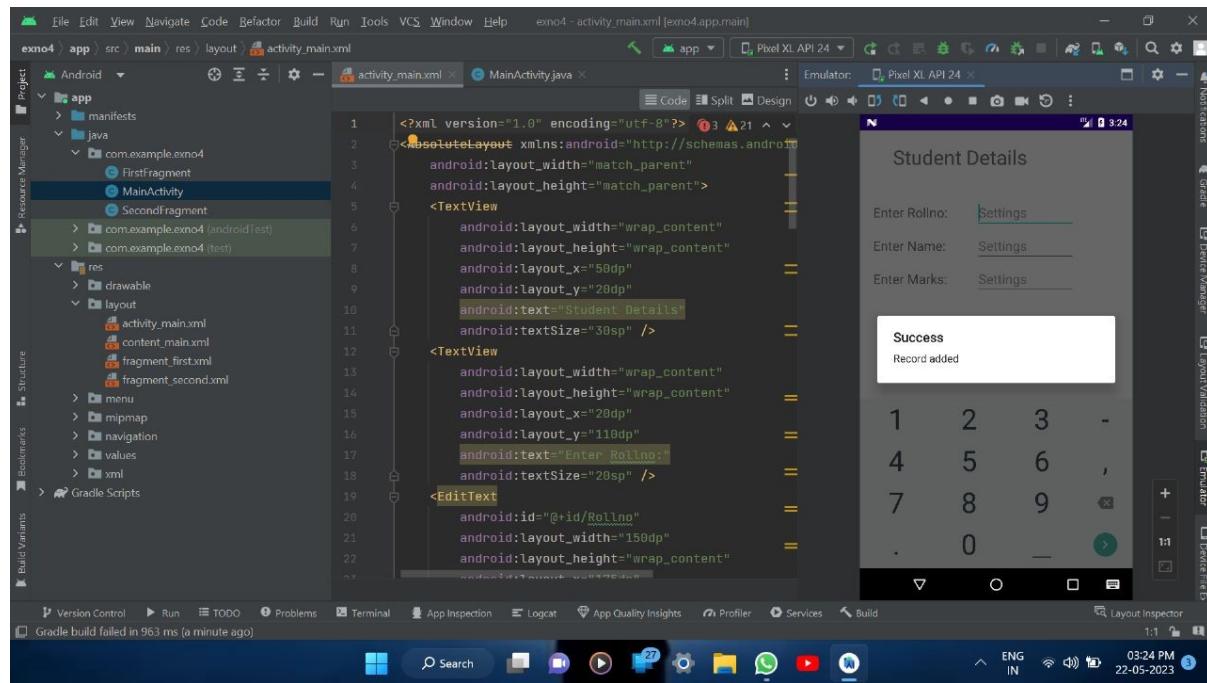
```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_x="20dp"  
    android:layout_y="210dp"  
    android:text="Enter Marks:"  
    android:textSize="20sp" />  
  
<EditText  
    android:id="@+id/Marks"  
    android:layout_width="150dp"  
    android:layout_height="wrap_content"  
    android:layout_x="175dp"  
    android:layout_y="200dp"  
    android:inputType="number"  
    android:textSize="20sp" />  
  
<Button  
    android:id="@+id/Insert"  
    android:layout_width="150dp"  
    android:layout_height="wrap_content"  
    android:layout_x="29dp"  
    android:layout_y="304dp"  
    android:text="Insert"  
    android:textSize="30dp" />  
  
<Button  
    android:id="@+id/Delete"  
    android:layout_width="174dp"  
    android:layout_height="wrap_content"  
    android:layout_x="215dp"  
    android:layout_y="308dp"
```

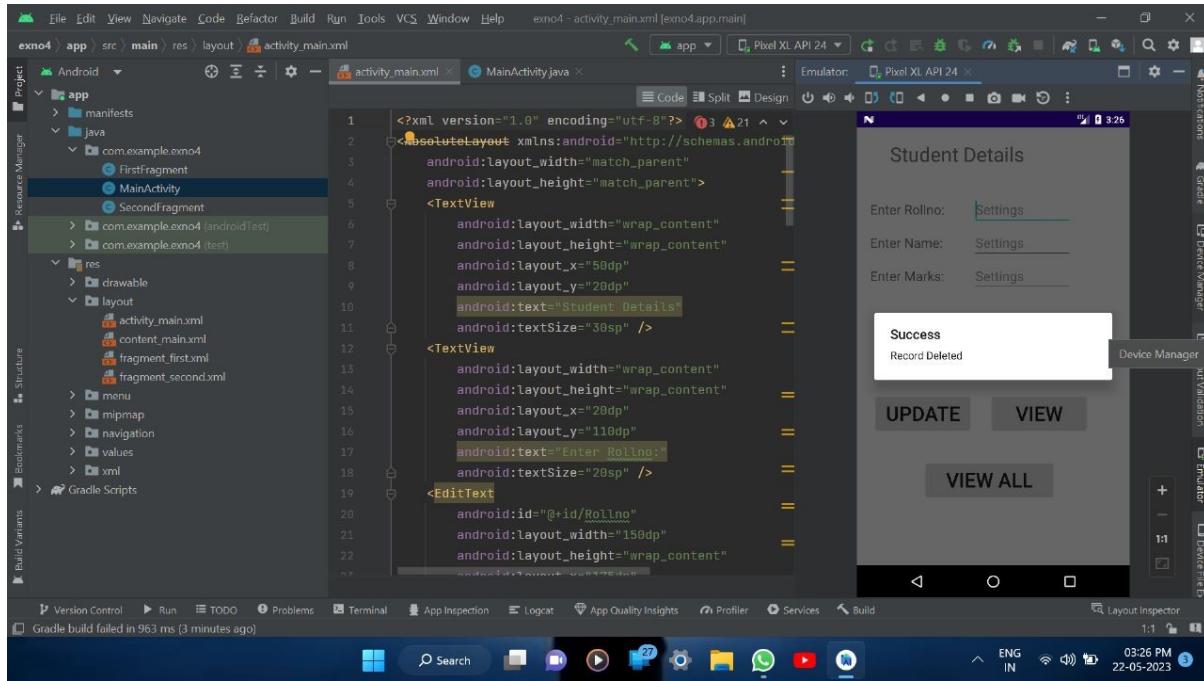
```
    android:text="Delete"
    android:textSize="30dp" />
<Button
    android:id="@+id/Update"
    android:layout_width="170dp"
    android:layout_height="72dp"
    android:layout_x="25dp"
    android:layout_y="400dp"
    android:text="Update"
    android:textSize="30dp" />
<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="225dp"
    android:layout_y="405dp"
    android:text="View"
    android:textSize="30dp" />
<Button
    android:id="@+id/ViewAll"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_x="100dp"
    android:layout_y="500dp"
    android:text="View All"
    android:textSize="30dp" />
</AbsoluteLayout>
```

OUTPUT









RESULT

Thus a simple Android Application that uses makes use of databases. is designed Implemented and executed sucessfully

PROGRAM 5:

MainActivity.java

```
package com.example.exno5;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.net.Uri;
import androidx.annotation.RequiresApi;
import androidx.core.app.NotificationCompat;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.Person;
import androidx.core.graphics.drawable.IconCompat;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import java.util.Date;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {

    NotificationManager notificationManager;
    NotificationCompat.Builder builder;
    NotificationChannel channel;
    CharSequence charSequence = "";
    @RequiresApi(api = Build.VERSION_CODES.O)
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Button btnSimpleNotification =
findViewById(R.id.btnSimpleNotification);
Button btnNotificationIcon = findViewById(R.id.btnNotificationIcon);
Button btnNotificationImage = findViewById(R.id.btnNotificationImage);
Button btnNotificationWithGroupConvo =
findViewById(R.id.btnNotificationWithGroupConvo);
Button btnNotificationSemantic =
findViewById(R.id.btnNotificationSemantic);
charSequence = btnNotificationIcon.getText();
btnSimpleNotification.setOnClickListener(this);
btnNotificationIcon.setOnClickListener(this);
btnNotificationImage.setOnClickListener(this);
btnNotificationWithGroupConvo.setOnClickListener(this);
btnNotificationSemantic.setOnClickListener(this);
notificationManager = (NotificationManager)
getSystemService(Context.NOTIFICATION_SERVICE);
CharSequence name = "My Notification";
String description = "welcome seenuvasan";
int importance = NotificationManager.IMPORTANCE_DEFAULT;
channel = new NotificationChannel("1", name, importance);
channel.setDescription(description);
builder = new NotificationCompat.Builder(MainActivity.this,
channel.getId())
.setSmallIcon(R.mipmap.ic_launcher);
notificationManager.createNotificationChannel(channel);
}
@Override
```

```
public void onClick(View v) {  
    switch (v.getId()) {  
        case R.id.btnSimpleNotification:  
            simpleNotification();  
            break;  
        case R.id.btnNotificationIcon:  
            notificationWithIcon();  
            break;  
        case R.id.btnNotificationImage:  
            notificationWithImage();  
            break;  
        case R.id.btnNotificationWithGroupConvo:  
            notificationWithGroupConvo();  
            break;  
        case R.id.btnNotificationSemantic:  
            notificationSemantic();  
            break;  
    }  
}  
  
private void simpleNotification() {  
    Person jd = new Person.Builder().setName("JournalDev")  
        .setImportant(true).build();  
    new NotificationCompat.MessagingStyle(jd)  
        .addMessage("Check me out", new Date().getTime(),  
        jd).setBuilder(builder);  
    notificationManager.notify(1, builder.build());  
}  
  
private void notificationWithIcon() {  
    Person anupam = new Person.Builder()
```

```
.setName("Anupam")
//      .setIcon(IconCompat.createWithResource(this, R.drawable.index))
.setIcon(IconCompat.createWithResource(this,
R.drawable.ic_launcher_foreground)).setImportant(true) .build();
new NotificationCompat.MessagingStyle(anupam)
    .addMessage("Check out my latest article!", new Date().getTime(),
anupam)
    .setBuilder(builder);
notificationManager.notify(2, builder.build());
}

private void notificationWithImage() {
    Person bot = new Person.Builder()
        .setName("Bot") .setImportant(true)
        .setBot(true) .build();
    Uri uri =
Uri.parse("android.resource://com.journaldev.androidpnotifications/
drawable/" + R.drawable.ic_launcher_background);
    NotificationCompat.MessagingStyle.Message messag = new
        NotificationCompat.MessagingStyle.Message("Check out my
latest article!", new Date().getTime(), bot);
    message.setData("image/*",uri);
    new NotificationCompat.MessagingStyle(bot)
        .addMessage(message) .setGroupConversation(true).setBuilder(builder);
    notificationManager.notify(3, builder.build());
}

private void notificationWithGroupConvo()
{
    Person jd = new Person.Builder()
        .setName("JournalDev") .build();
    Person anupam = new Person.Builder()
```

```
.setName("Anupam")
.setIcon(IconCompat.createWithResource(this,
R.drawable.ic_launcher_foreground))
.setImportant(true).build();

Person bot = new Person.Builder()
.setName("Bot").setBot(true).build();

Uri uri =
Uri.parse("android.resource://com.journaldev.androidpnotifications/
drawable/" + R.drawable.ic_launcher_background);

NotificationCompat.MessagingStyle.Message message = new
NotificationCompat.MessagingStyle.Message("", new Date().getTime(), bot);
message.setData("image/*",uri);
new NotificationCompat.MessagingStyle(bot)
.addMessage("Hi. How are you?", new Date().getTime(), anupam)
.addMessage(message)
.addMessage("Does this image look good?", new Date().getTime(),
bot)
.addMessage("Looks good!", new Date().getTime(), jd)
.setGroupConversation(true).setConversationTitle("Sample
Conversation")
.setBuilder(builder);

notificationManager.notify(4, builder.build());

}

private void notificationSemantic()
{
    Person jd = new Person.Builder()
.setName("JournalDev")
.build();

    Person anupam = new Person.Builder()
```

```
.setName("Anupam")
.setName(IconCompat.createWithResource(this, R.drawable.index))
.setImportant(true)
.build();

Person bot = new Person.Builder()
.setName("Bot")
.setBot(true)
.build();

Uri uri =
Uri.parse("android.resource://com.journaldev.androidpnotifications/
drawable/" + R.drawable.ic_launcher_background);

Intent intent = new Intent(this, MainActivity.class);
intent.putExtra("hi", "Notifications were read");

PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, intent, 0);

NotificationCompat.MessagingStyle.Message
message = new
NotificationCompat.MessagingStyle.Message("", new Date().getTime(),
bot);

message.setData("image/*", uri);

NotificationCompat.Action replyAction =
new NotificationCompat.Action.Builder(
R.drawable.ic_launcher_background, "MARK READ",
pendingIntent)
.setSemanticAction(NotificationCompat.Action.SEMANTIC_A
CTION_MARK_AS_READ)

.build();

NotificationCompat.Builder separateBuilder = builder;
separateBuilder.addAction(replyAction);

new NotificationCompat.MessagingStyle(bot)
```

```
.addMessage("Hi. How are you?", new Date().getTime(), anupam)
    .addMessage(message)
    .addMessage("Does this image look good?", new Date().getTime(),
bot)
    .addMessage("Looks good!", new Date().getTime(), jd)
    .setGroupConversation(true)
    .setConversationTitle("Sample Conversation")
    .setBuilder(separateBuilder);
notificationManager.notify(5, separateBuilder.build());
}

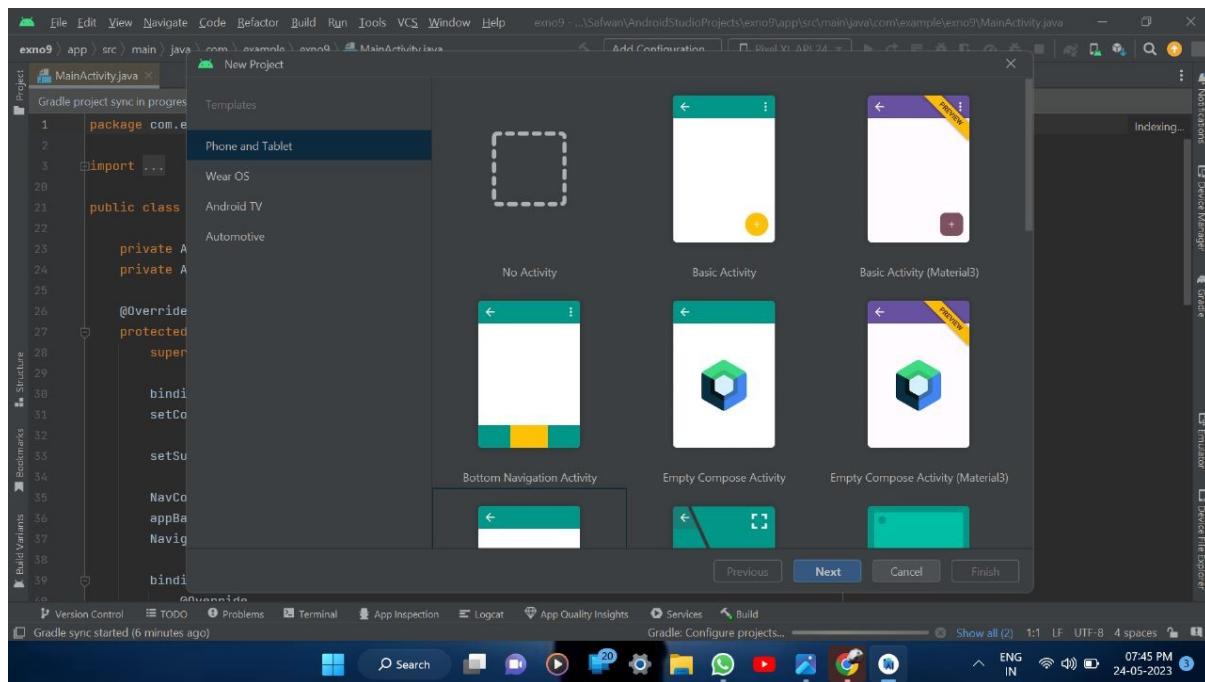
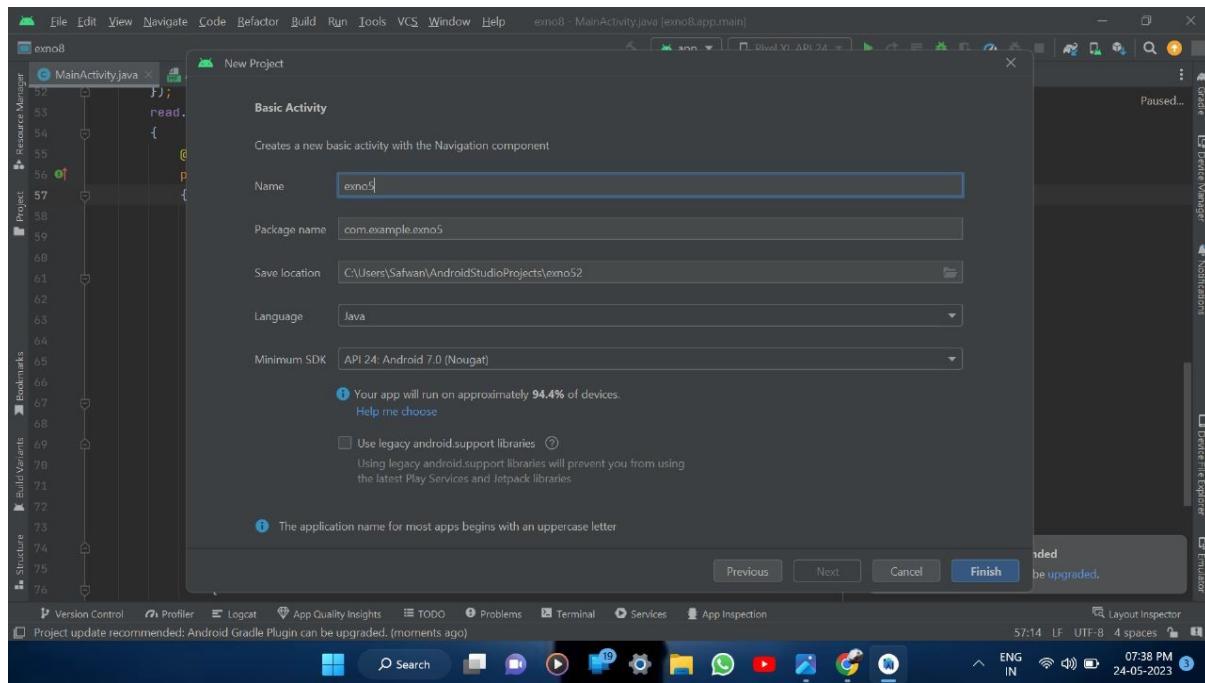
@Override
protected void onResume() {
    super.onResume();
    if(getIntent()!=null && getIntent().getExtras()!=null)
    {
        String value = getIntent().getStringExtra("hi");
        Toast.makeText(getApplicationContext(),value,Toast.LENGTH_LONG).show();
    }
}
}
```

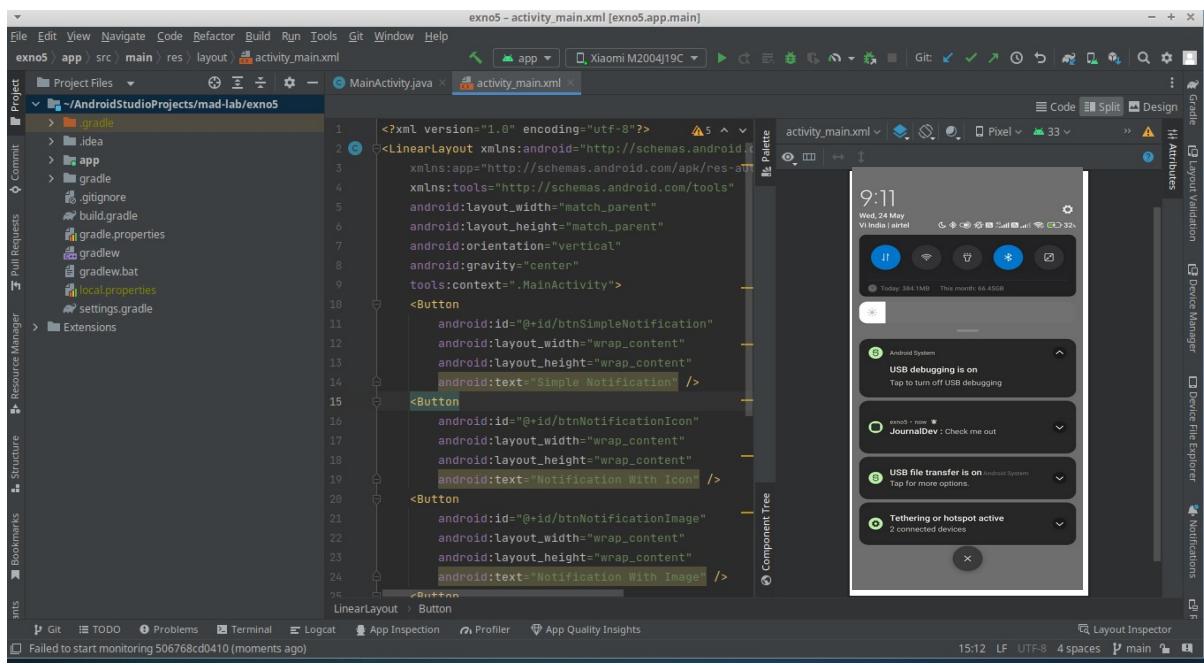
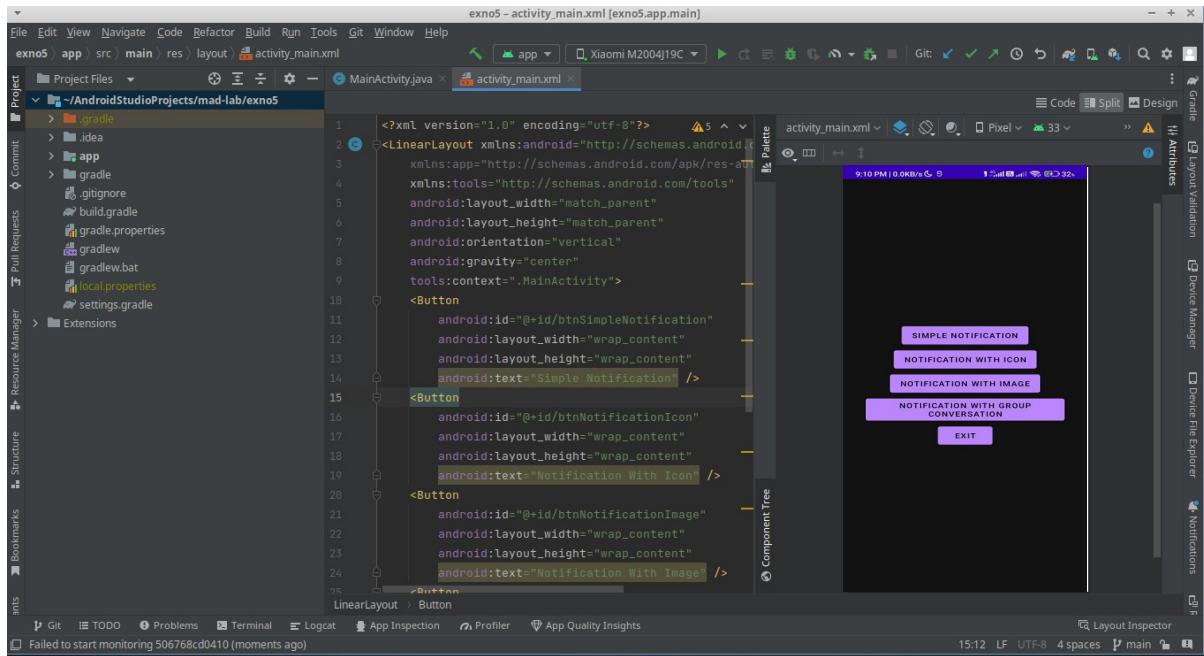
activity_main.xml

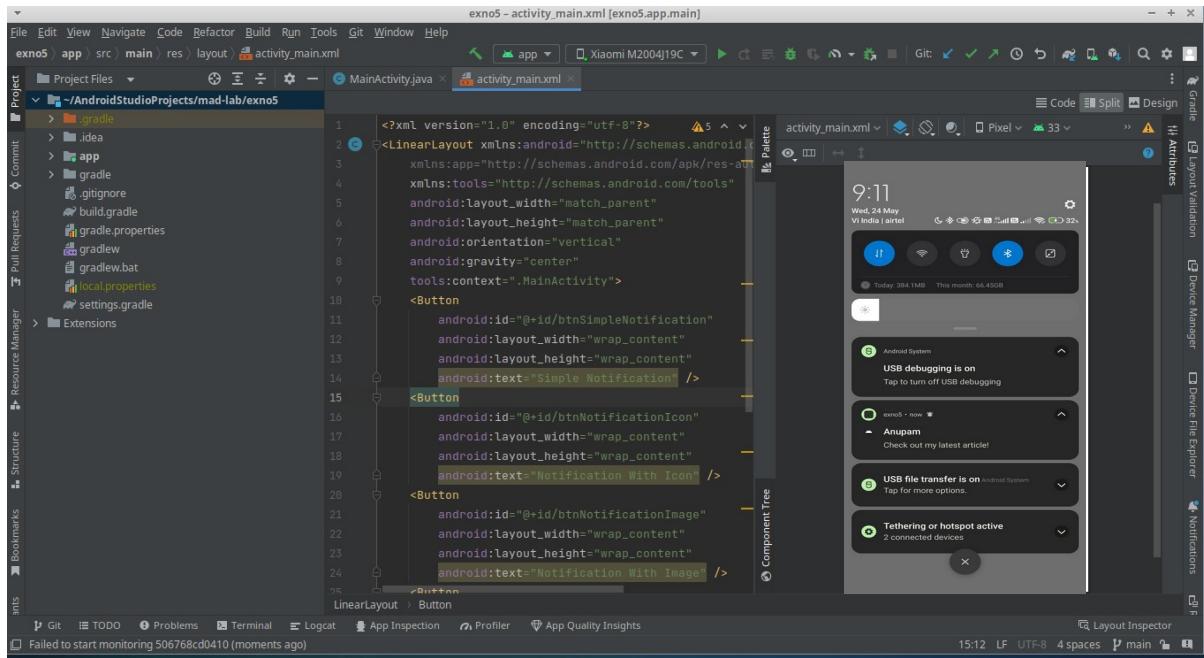
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

```
        android:gravity="center"
        tools:context=".MainActivity">
    <Button
        android:id="@+id	btnSimpleNotification"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Simple Notification" />
    <Button
        android:id="@+id	btnNotificationIcon"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Notification With Icon" />
    <Button
        android:id="@+id	btnNotificationImage"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Notification With Image" />
    <Button
        android:id="@+id	btnNotificationWithGroupConvo"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Notification With Group Conversation" />
    <Button
        android:id="@+id	btnNotificationSemantic"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Exit" />
</LinearLayout>
```

OUTPUT







RESULT

Thus a simple Android Application that uses makes makes use of Notification Manager is designed Implemented and executed sucessfully

PROGRAM 6:

MainActivity.java

```
package com.example.exno6;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{
    ImageView img;
    Button bt1,bt2;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bt1 = (Button) findViewById(R.id.button);
        bt2= (Button) findViewById(R.id.button2);
        img = (ImageView) findViewById(R.id.imageView);
        bt1.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                new Thread(new Runnable()
                {
                    @Override
```

```
public void run()
{
    img.post(new Runnable()
    {
        @Override
        public void run()
        {
            img.setImageResource(R.drawable.india1);
        }
    });
}

}).start();
}

});

bt2.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        new Thread(new Runnable()
        {
            @Override
            public void run()
            {
                img.post(new Runnable()
                {
                    @Override
                    public void run()
                    {
                
```

```
        img.setImageResource(R.drawable.india2);

    }

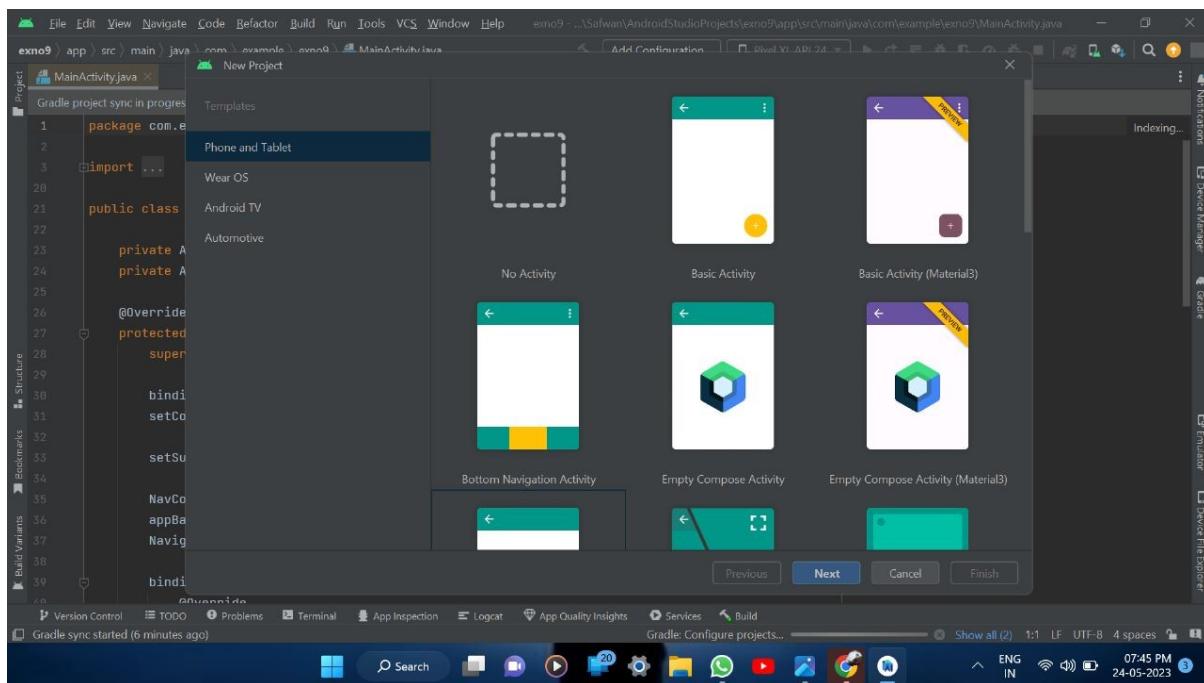
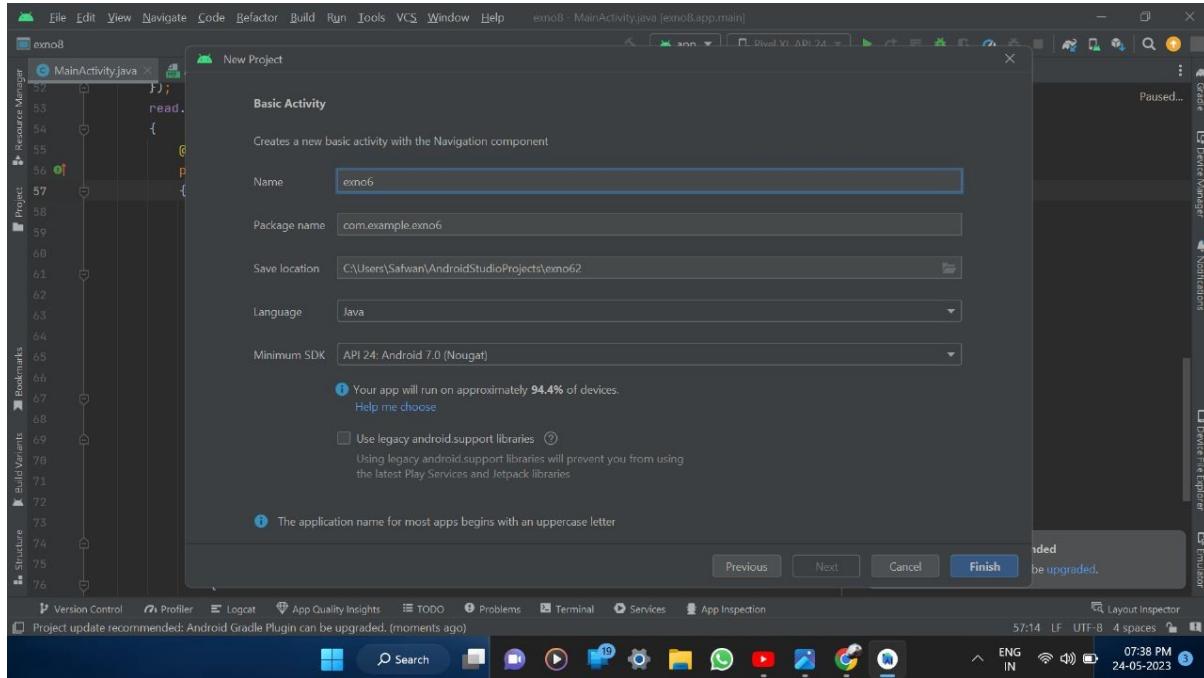
});
```

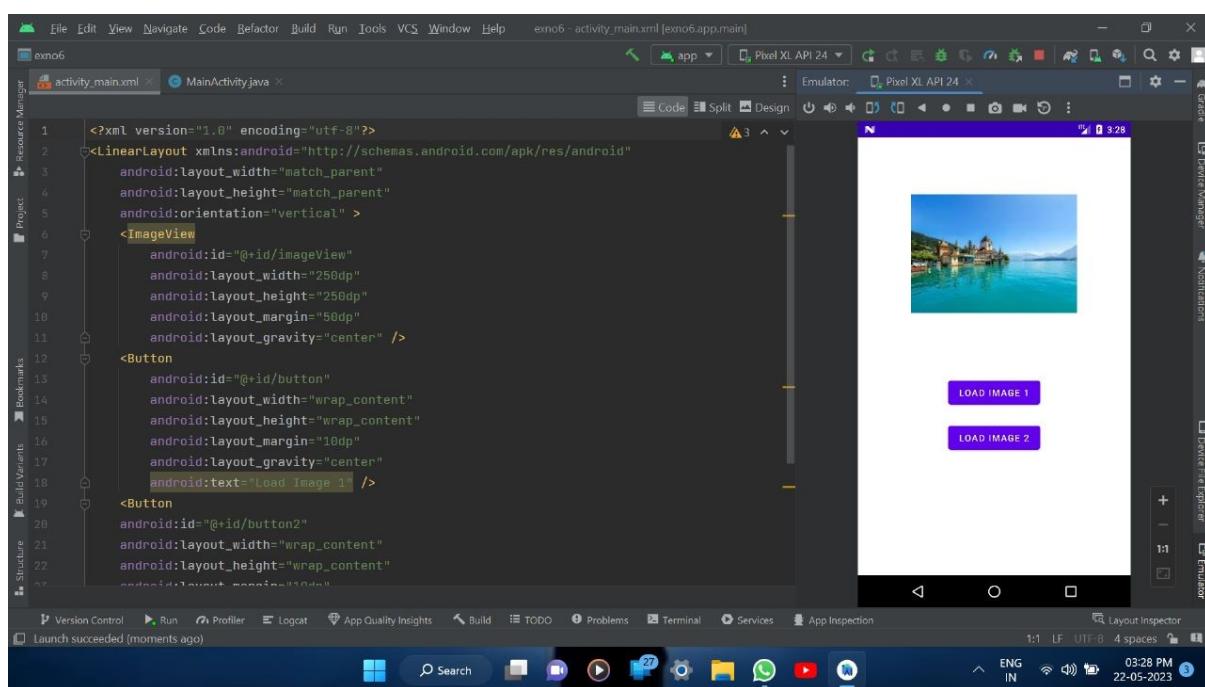
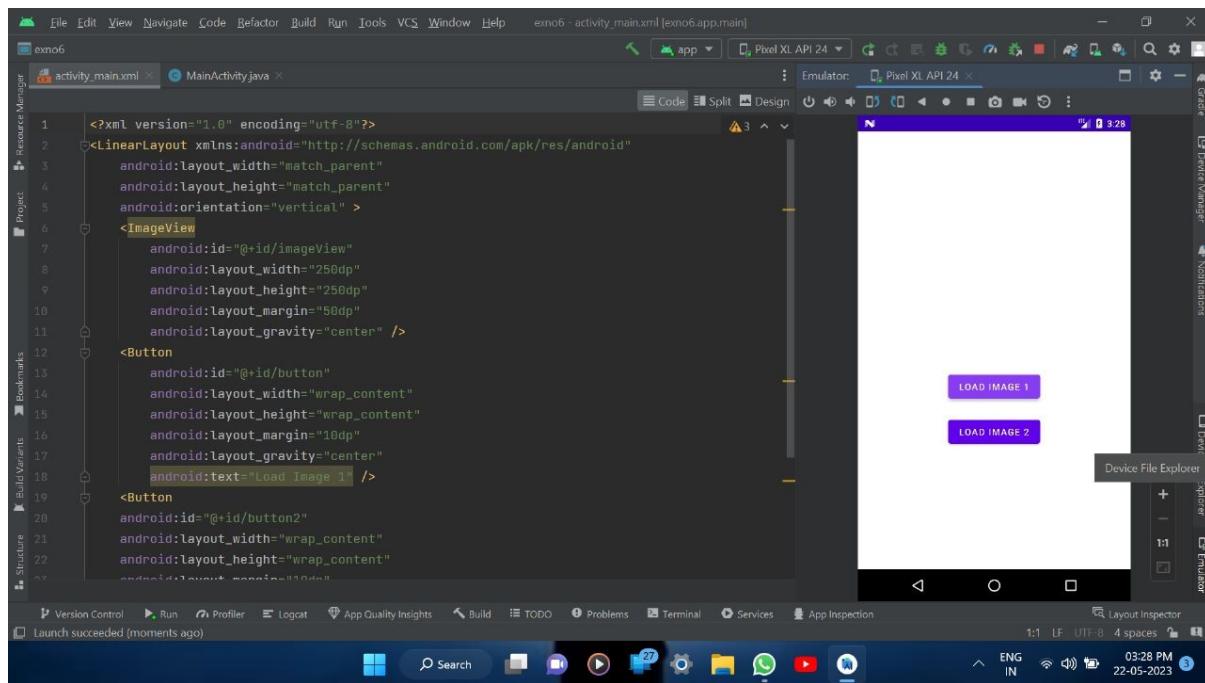
activity main.xml

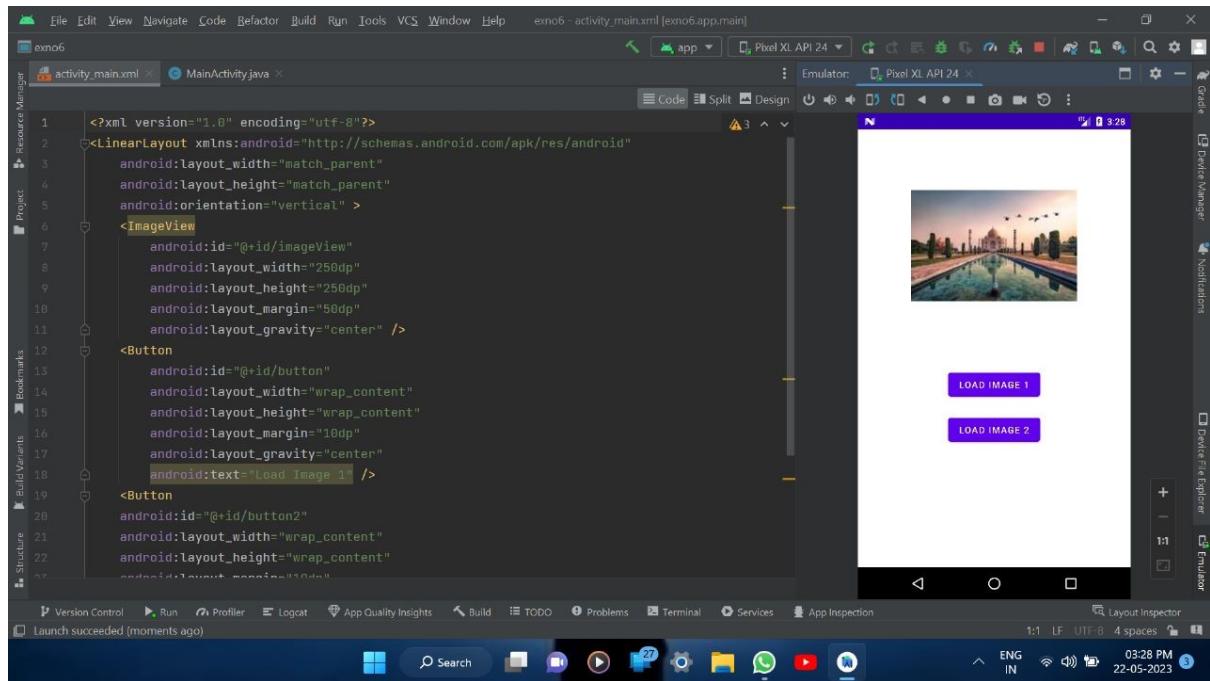
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical" >
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="250dp"
        android:layout_height="250dp"
        android:layout_margin="50dp"
        android:layout_gravity="center" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_gravity="center"
        android:text="Load Image 1" />
    <Button
```

```
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_gravity="center"
    android:text="Load image 2" />
</LinearLayout>
```

OUTPUT







RESULT

Thus a simple Android Application that uses makes makes use of uses Multi-threading is designed Implemented and executed sucessfully

PROGRAM 7:

MainActivity.java

```
package com.example.exno7;  
import android.Manifest;  
import android.annotation.SuppressLint;  
import android.content.Context;  
import android.content.Intent;  
import android.content.pm.PackageManager;  
import android.location.Location;  
import android.location.LocationManager;  
import android.os.Bundle;  
import android.os.Looper;  
import android.provider.Settings;  
import android.widget.TextView;  
import android.widget.Toast;  
import androidx.annotation.NonNull;  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.app.ActivityCompat;  
import com.google.android.gms.location.FusedLocationProviderClient;  
import com.google.android.gms.location.LocationCallback;  
import com.google.android.gms.location.LocationRequest;  
import com.google.android.gms.location.LocationResult;  
import com.google.android.gms.location.LocationServices;  
import com.google.android.gms.tasks.OnCompleteListener;  
import com.google.android.gms.tasks.Task;  
public class MainActivity extends AppCompatActivity {  
    FusedLocationProviderClient mFusedLocationClient;  
    TextView latitudeTextView, longitTextView;  
    int PERMISSION_ID = 44;
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    latitudeTextView = findViewById(R.id.latTextView);
    longitTextView = findViewById(R.id.lonTextView);
    mFusedLocationClient =
    LocationServices.getFusedLocationProviderClient(this);
    // method to get the location
    getLastLocation();
}

@SuppressWarnings("MissingPermission")
private void getLastLocation() {
    // check if permissions are given
    if (checkPermissions()) {
        // check if location is enabled
        if (isLocationEnabled()) {
            // getting last
            // location from
            // FusedLocationClient
            // object
            mFusedLocationClient.getLastLocation().addOnCompleteListener(new
            OnCompleteListener<Location>() {
                @Override
                public void onComplete(@NonNull Task<Location> task) {
                    Location location = task.getResult();
                    if (location == null) {
```

```
        requestNewLocationData();
    } else {
        latitudeTextView.setText(location.getLatitude() + "");
        longitextView.setText(location.getLongitude() + "");
    }
});

} else {
    Toast.makeText(this, "Please turn on" + " your location...", Toast.LENGTH_LONG).show();
    Intent intent = new Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
    startActivity(intent);
}

} else {
    // if permissions aren't available,
    // request for permissions
    requestPermissions();
}

}

@SuppressLint("MissingPermission")
private void requestNewLocationData() {
    // Initializing LocationRequest
    // object with appropriate methods
    LocationRequest mLocationRequest = new LocationRequest();

    mLocationRequest.setPriority(LocationRequest.PRIORITY_HIGH_ACCURA
CY);
    mLocationRequest.setInterval(5);
```

```
mLocationRequest.setFastestInterval(0);
mLocationRequest.setNumUpdates(1);
// setting LocationRequest
// on FusedLocationClient
mFusedLocationClient =
LocationServices.getFusedLocationProviderClient(this);
mFusedLocationClient.requestLocationUpdates(mLocationRequest,
mLocationCallback, Looper.myLooper());
}

private LocationCallback mLocationCallback = new LocationCallback() {
    @Override
    public void onLocationResult(LocationResult locationResult) {
        Location mLastLocation = locationResult.getLastLocation();
        latitudeTextView.setText("Latitude: " + mLastLocation.getLatitude() +
        "");
        longitextView.setText("Longitude: " + mLastLocation.getLongitude() +
        "");
    }
};

// method to check for permissions
private boolean checkPermissions() {
    return ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION)==
PackageManager.PERMISSION_GRANTED &&
ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION)==
PackageManager.PERMISSION_GRANTED;

    // If we want background location
    // on Android 10.0 and higher,
```

```
// use:  
// ActivityCompat.checkSelfPermission(this,  
Manifest.permission.ACCESS_BACKGROUND_LOCATION) ==  
PackageManager.PERMISSION_GRANTED  
}  
  
// method to request for permissions  
private void requestPermissions() {  
    ActivityCompat.requestPermissions(this, new String[] {  
        Manifest.permission.ACCESS_COARSE_LOCATION,  
        Manifest.permission.ACCESS_FINE_LOCATION},  
        PERMISSION_ID);  
}  
  
// method to check  
// if location is enabled  
private boolean isLocationEnabled() {  
    LocationManager locationManager = (LocationManager)  
getSystemService(Context.LOCATION_SERVICE);  
    return  
locationManager.isProviderEnabled(LocationManager.GPS_PROVIDER) ||  
locationManager.isProviderEnabled(LocationManager.NETWORK_PROVIDE  
R);  
}  
  
// If everything is alright then  
@Override  
public void  
onRequestPermissionsResult(int requestCode, @NonNull String[]  
permissions, @NonNull int[] grantResults) {  
    super.onRequestPermissionsResult(requestCode, permissions,
```

```
grantResults);

    if(requestCode == PERMISSION_ID) {
        if(grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
            getLastLocation();
        }
    }
}

@Override
public void onResume() {
    super.onResume();
    if(checkPermissions()) {
        getLastLocation();
    }
}
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/teal_700"
    android:gravity="center"
    android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

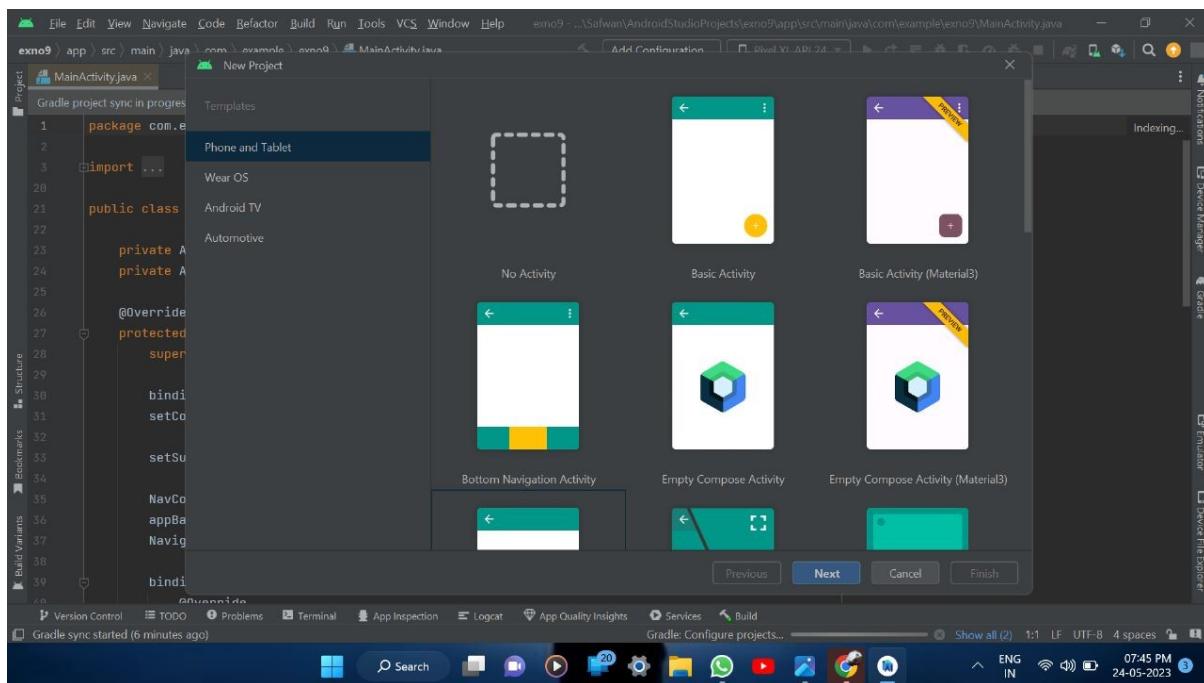
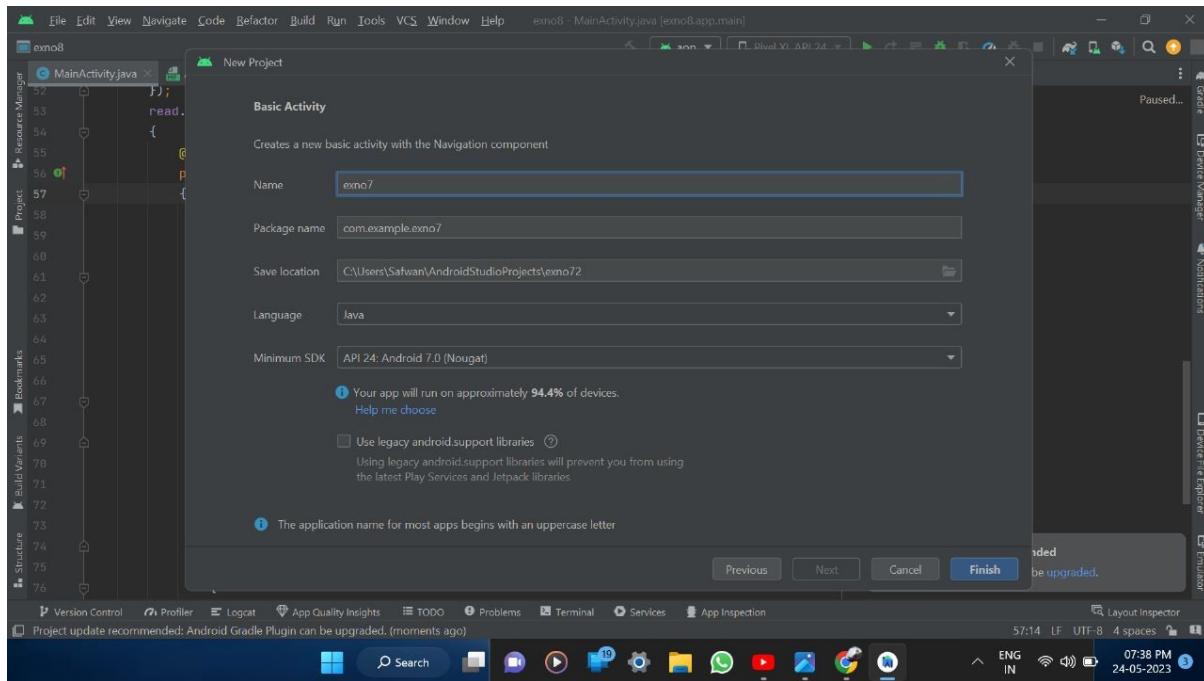
```
    android:fontFamily="sans-serif-black"
    android:text="Latitude:" />
<TextView
    android:id="@+id/latTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Latitude will be here! "
    android:textColor="#f5f5f5" />
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="sans-serif-black"
    android:text="Longitude:" />
<TextView
    android:id="@+id/lonTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Longitude will be here! "
    android:textColor="#f5f5f5" />
</LinearLayout>
```

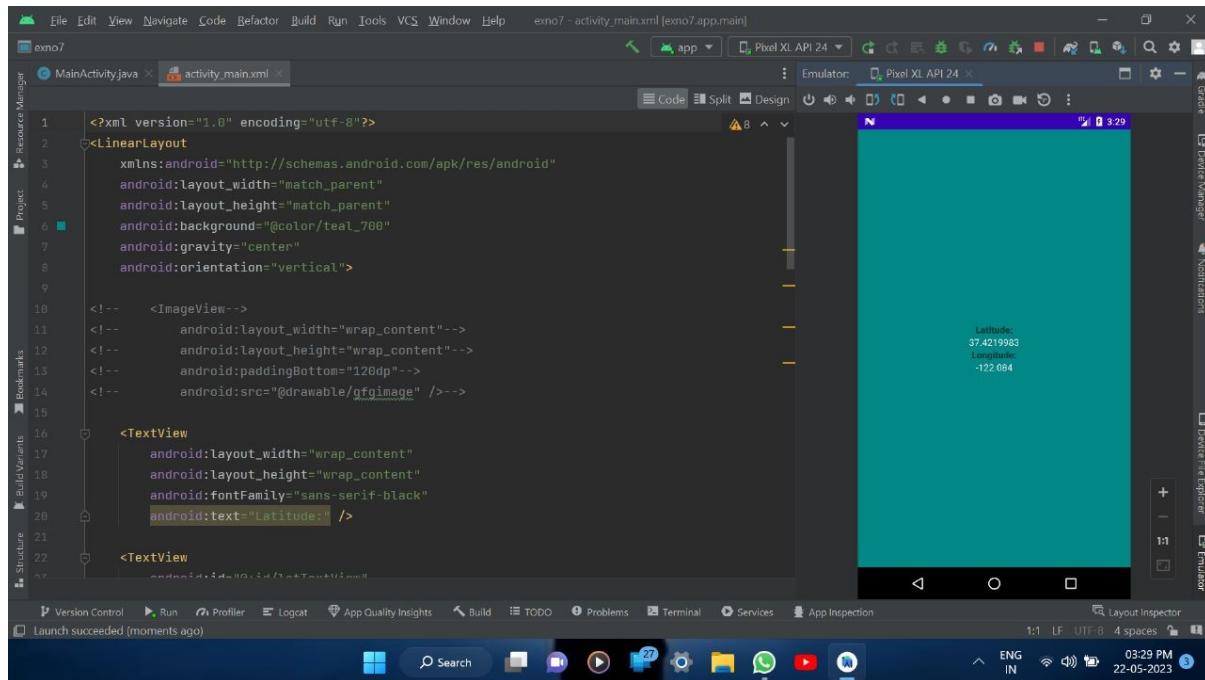
AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission
        android:name="android.permission.ACCESS_COARSE_LOCATION" />
    <uses-permission
        android:name="android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission android:name = "android.permission.INTERNET" />
```

```
<uses-permission  
    android:name="android.permission.ACCESS_COARSE_LOCATION" />  
  
<uses-permission  
    android:name="android.permission.ACCESS_FINE_LOCATION" />  
  
<uses-permission  
    android:name="android.permission.ACCESS_BACKGROUND_LOCATION"  
/>  
  
<application  
    android:allowBackup="true"  
    android:dataExtractionRules="@xml/data_extraction_rules"  
    android:fullBackupContent="@xml/backup_rules"  
    android:icon="@mipmap/ic_launcher"  
    android:label="@string/app_name"  
    android:roundIcon="@mipmap/ic_launcher_round"  
    android:supportsRtl="true"  
    android:theme="@style/Theme.Exno7"  
    tools:targetApi="31">  
  
<activity  
    android:name=".MainActivity"  
    android:exported="true"  
    android:label="@string/app_name"  
    android:theme="@style/Theme.Exno7.NoActionBar">  
  
<intent-filter>  
    <action android:name="android.intent.action.MAIN" />  
    <category android:name="android.intent.category.LAUNCHER" />  
</intent-filter>  
  
<meta-data  
    android:name="android.app.lib_name"  
    android:value="" />  
</activity> </application></manifest>
```

OUTPUT





RESULT

Thus a simple Android native application that uses GPS location information is designed Implemented and executed sucessfully

PROGRAM 8:

MainActivity.java

```
package com.example.exno8;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStreamReader;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{
    EditText e1;
    Button write,read,clear;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1= (EditText) findViewById(R.id.editText);
        write= (Button) findViewById(R.id.button);
        read= (Button) findViewById(R.id.button2);
        clear= (Button) findViewById(R.id.button3);
        write.setOnClickListener(new View.OnClickListener()
```

```
{  
    @Override  
    public void onClick(View v)  
    {  
        String message=e1.getText().toString();  
        try  
        {  
            File file = getFilesDir();  
            System.out.println("seenuvasan phone file path"+file.toString());  
            File f=new File( file+"/myfile.txt");  
  
            f.createNewFile();  
            FileOutputStream fout=new FileOutputStream(f);  
            fout.write(message.getBytes());  
            fout.close();  
            Toast.makeText(getApplicationContext(),"Data Written in  
storage",Toast.LENGTH_LONG).show();  
        }  
        catch (Exception e)  
        {  
            Toast.makeText(getApplicationContext(),e.getMessage(),Toast.LENGTH_LONG).sho  
w();  
        }  
    }  
});  
read.setOnClickListener(new View.OnClickListener()  
{  
    @Override
```

```
public void onClick(View v)
{
    String message;
    String buf = "";
    try
    {
        File file = getFilesDir();
        File f = new File(file+"/myfile.txt");
        FileInputStream fin = new FileInputStream(f);
        BufferedReader br = new BufferedReader(new
InputStreamReader(fin));
        while ((message = br.readLine()) != null)
        {
            buf += message;
        }
        e1.setText(buf);
        br.close();
        fin.close();
        Toast.makeText(getApplicationContext(),"Data Received from
Storage",Toast.LENGTH_LONG).show();
    }
    catch (Exception e)
    {
        Toast.makeText(getApplicationContext(), e.getMessage(),
Toast.LENGTH_LONG).show();
    }
});
clear.setOnClickListener(new View.OnClickListener()
{
```

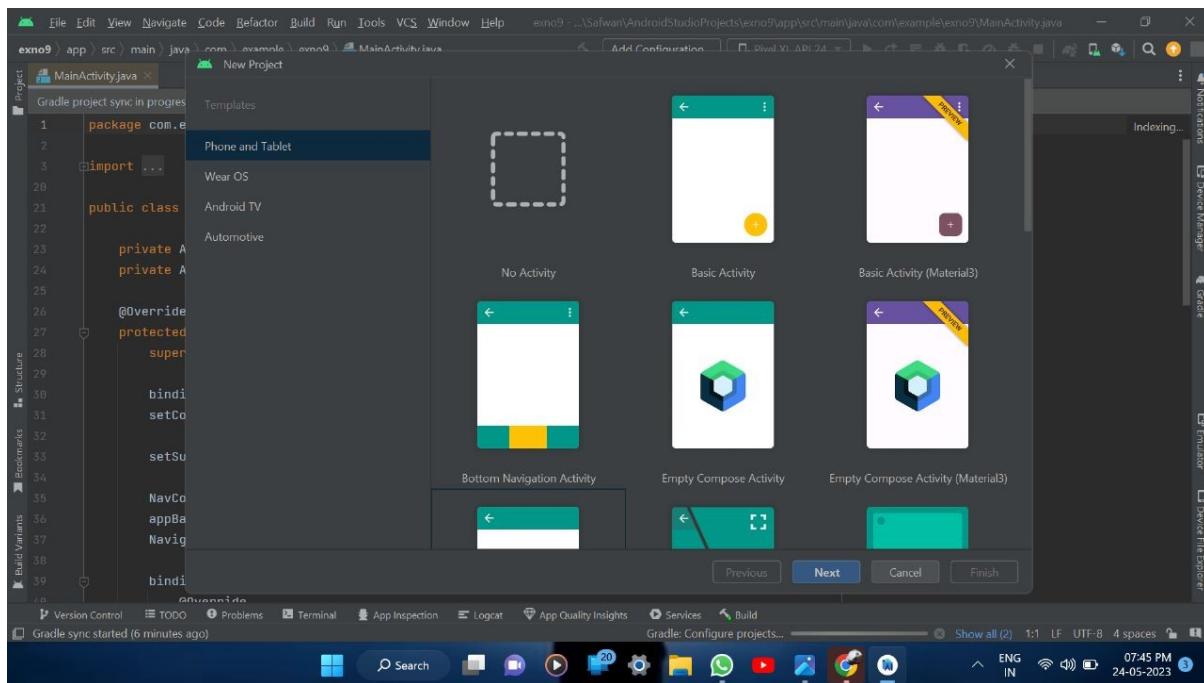
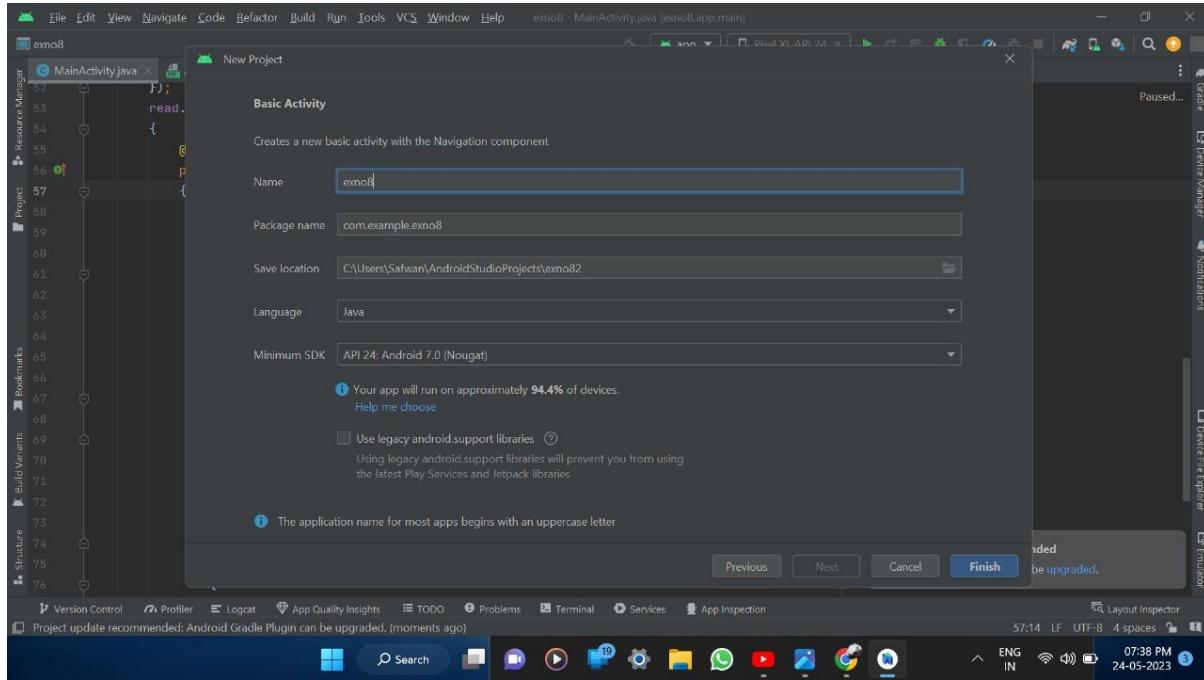
```
@Override  
public void onClick(View v)  
{  
    e1.setText("");  
}  
});  
}  
}
```

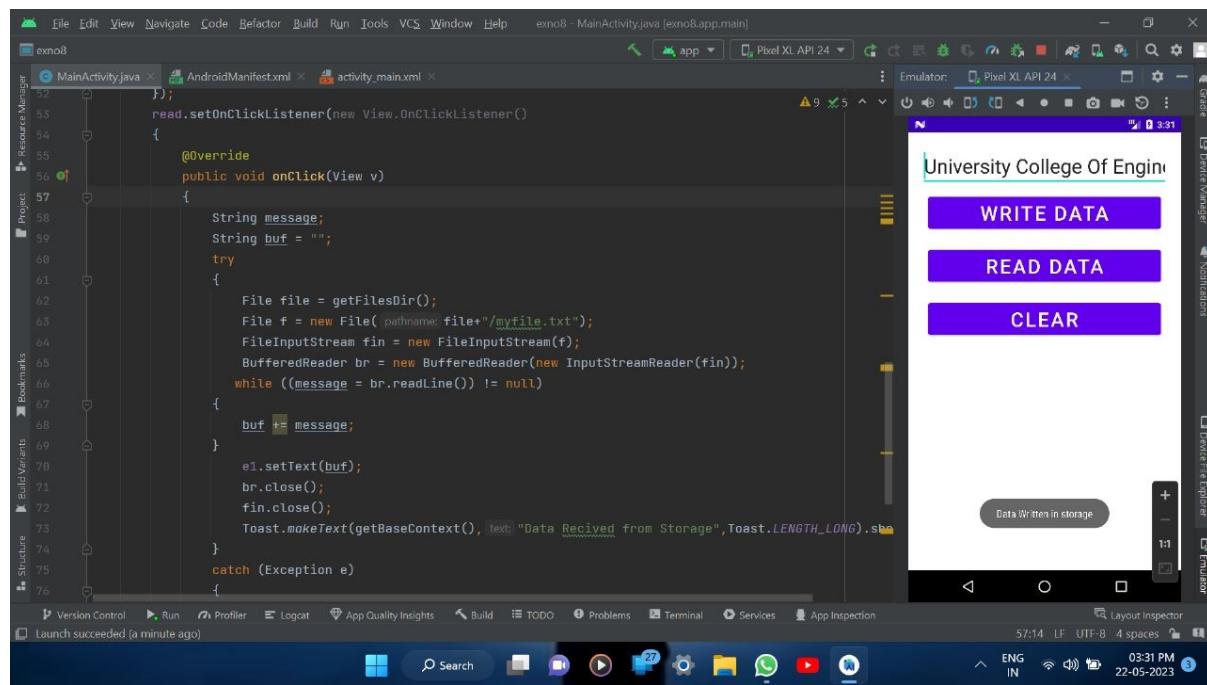
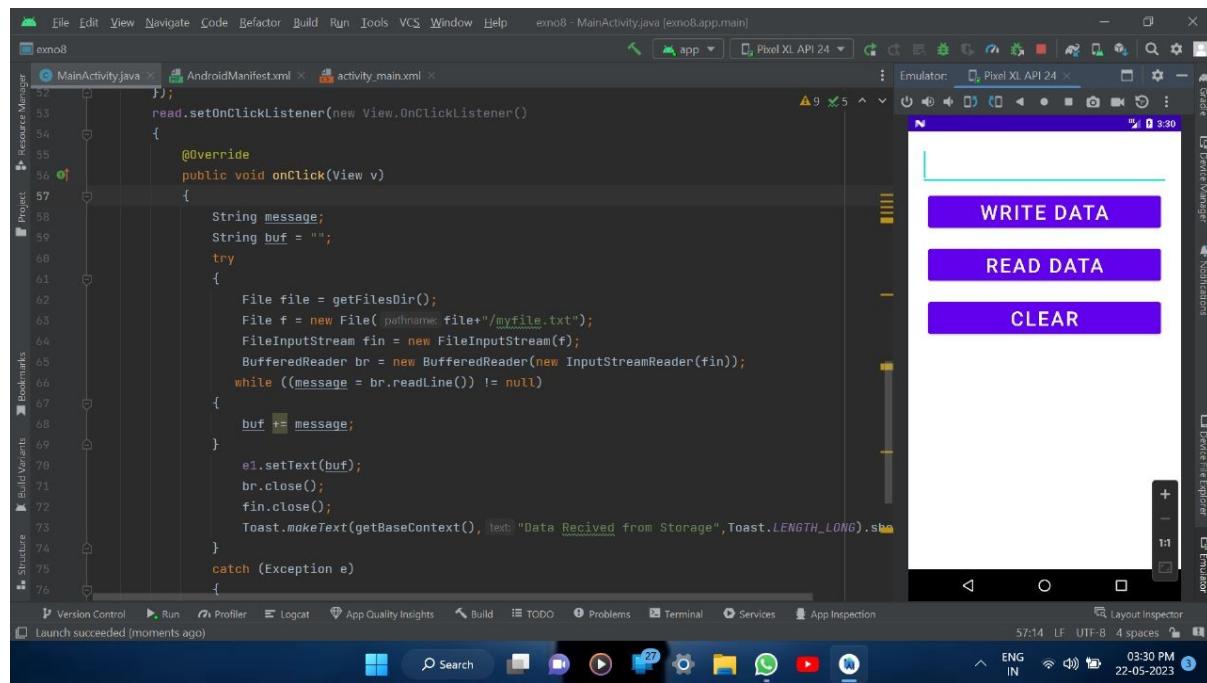
activity_main.xml

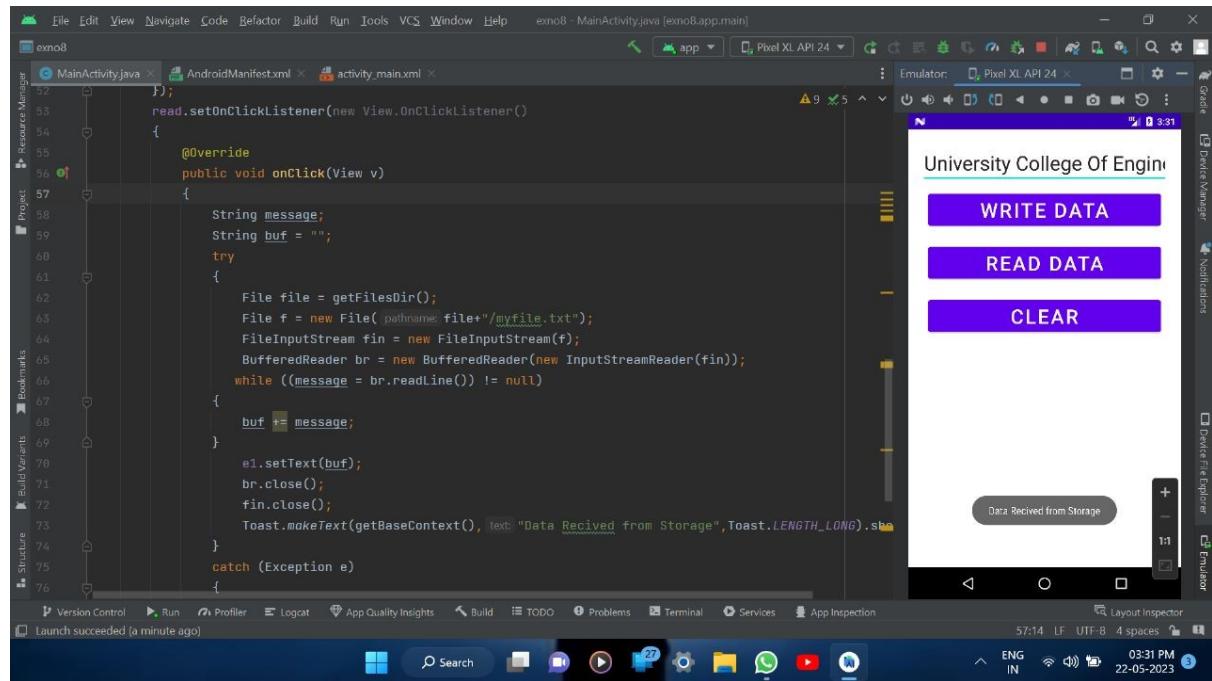
```
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:layout_margin="20dp"  
    android:orientation="vertical">  
    <EditText  
        android:id="@+id/editText"  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:singleLine="true"  
        android:textSize="30dp" />  
    <Button  
        android:id="@+id/button"  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:layout_margin="10dp"  
        android:text="Write Data"  
        android:textSize="30dp" />  
    <Button
```

```
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Read data"
    android:textSize="30dp" />
<Button
    android:id="@+id/button3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Clear"
    android:textSize="30dp" />
</LinearLayout>
```

OUTPUT







RESULT

Thus a simple Android Application that writes data to the SD card is designed Implemented and executed sucessfully

PROGRAM 9:

MainActivity.java

```
package com.example.exno9;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Context;
import androidx.annotation.RequiresApi;
import androidx.core.app.NotificationCompat;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.Person;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import java.util.Date;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    NotificationManager notificationManager;
    NotificationCompat.Builder builder;
    NotificationChannel channel;
    CharSequence charSequence = "";
    EditText e;

    @RequiresApi(api = Build.VERSION_CODES.O)
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btnSimpleNotification = findViewById(R.id.Button);
```

```
e= (EditText) findViewById(R.id.editText);
String msg = e.toString();
btnSimpleNotification.setOnClickListener(this);
notificationManager = (NotificationManager)
getSystemService(Context.NOTIFICATION_SERVICE);
CharSequence name = "My Notification";
String description = "welcome seenuvasan";
int importance = NotificationManager.IMPORTANCE_DEFAULT;
channel = new NotificationChannel("1", name, importance);
channel.setDescription(description);
builder = new NotificationCompat.Builder(MainActivity.this,
channel.getId())
.setSmallIcon(R.mipmap.ic_launcher);
notificationManager.createNotificationChannel(channel);
}

@Override
public void onClick(View v) {
switch (v.getId()) {
case R.id.Button:
simpleNotification();
break;

}
}

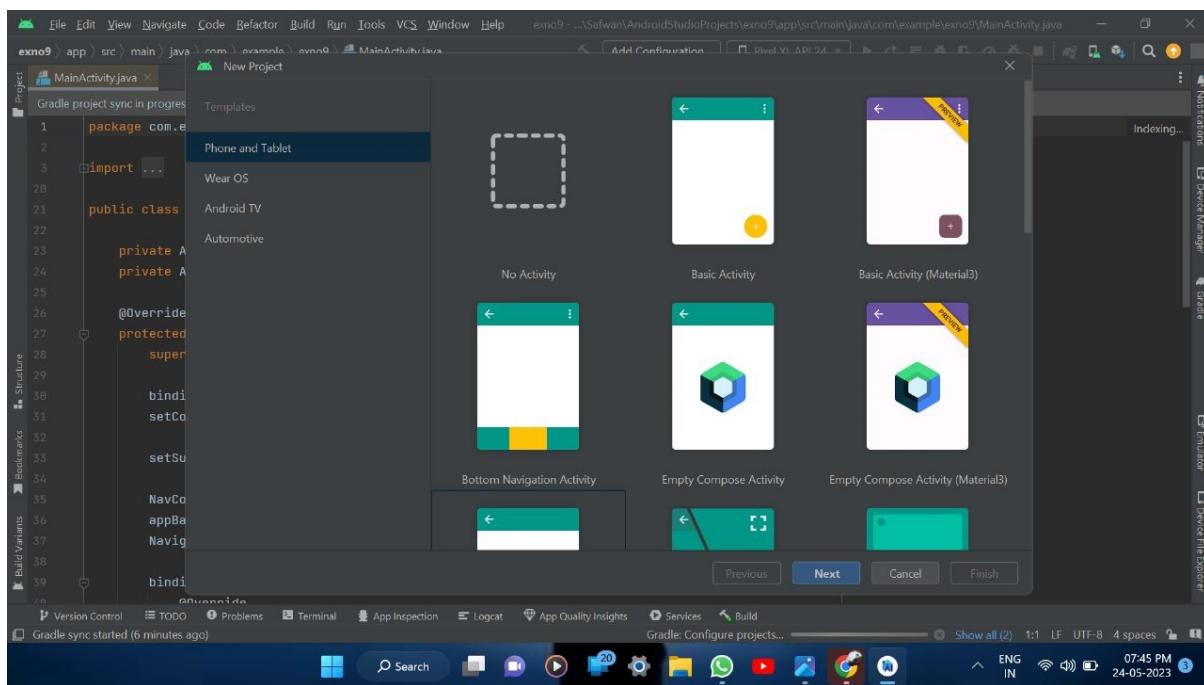
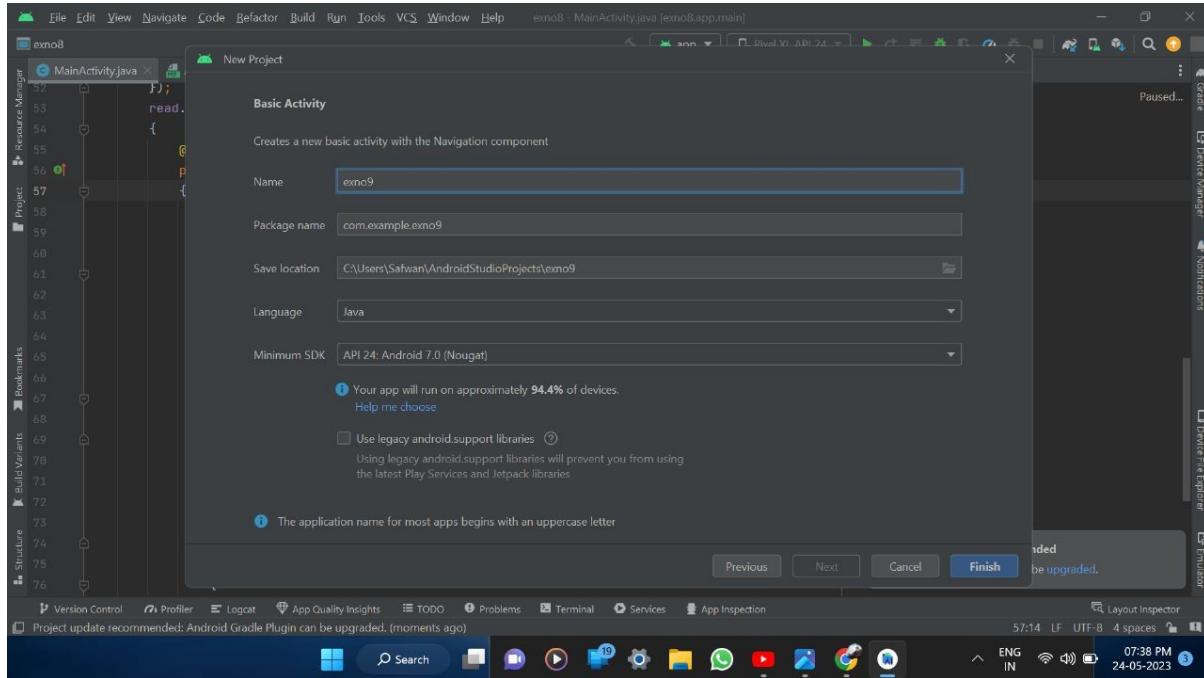
private void simpleNotification() {
Person jd = new
Person.Builder().setName("allert") .setImportant(true) .build();
new NotificationCompat.MessagingStyle(jd)
.addMessage(e.getText(), new Date().getTime(),
jd) .setBuilder(builder);
```

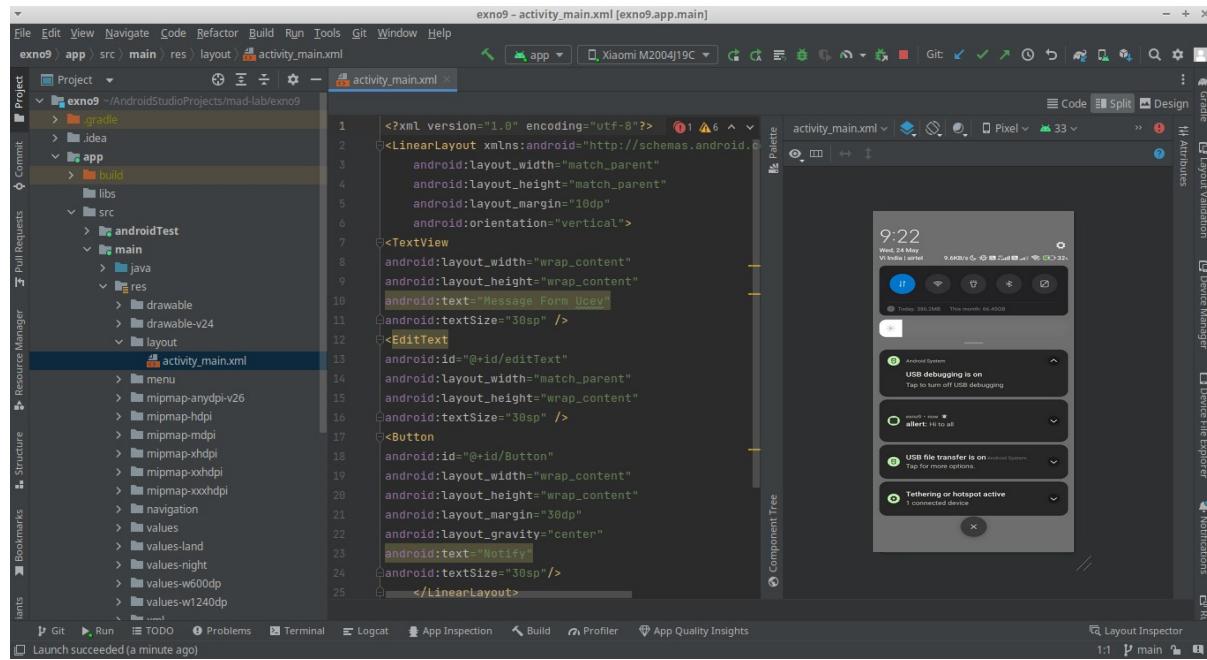
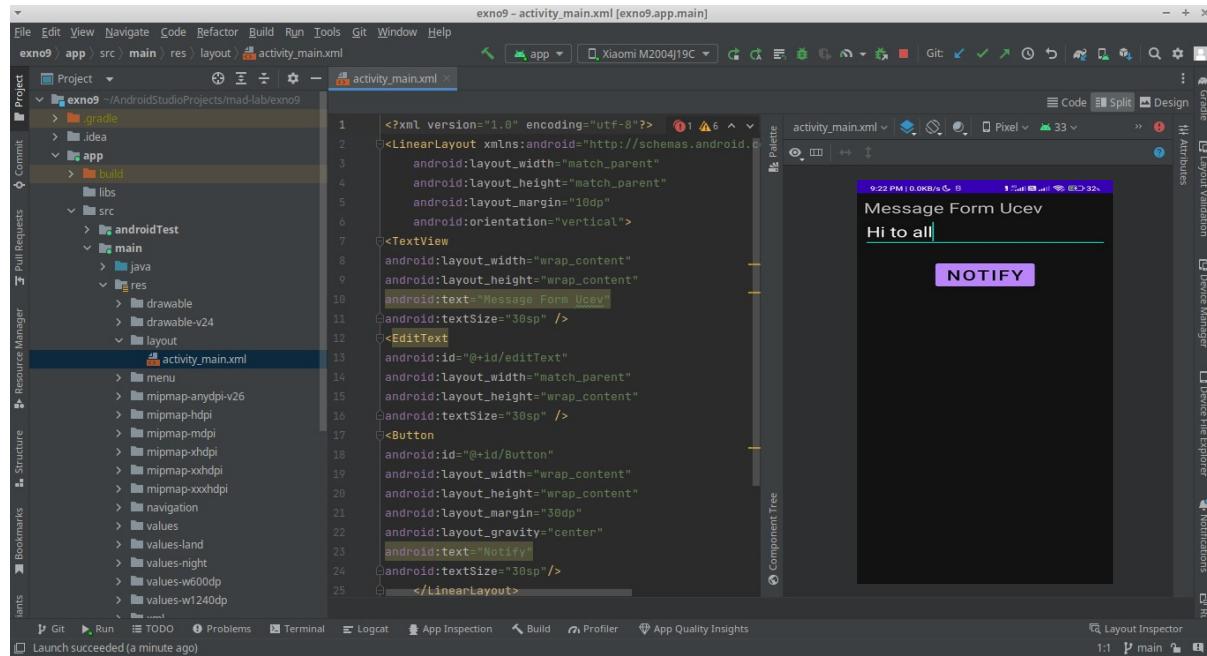
```
    notificationManager.notify(1, builder.build());  
}  
  
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:layout_margin="10dp"  
    android:orientation="vertical">  
  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Message Form Ucev"  
        android:textSize="30sp" />  
  
    <EditText  
        android:id="@+id/editText"  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:textSize="30sp" />  
  
    <Button  
        android:id="@+id/Button"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_margin="30dp"  
        android:layout_gravity="center"  
        android:text="Notify"  
        android:textSize="30sp"/>  </LinearLayout>
```

OUTPUT





RESULT

Thus a simple Android Application that creates an alert upon receiving a message is designed Implemented and executed sucessfully

PROGRAM 10:

MainActivity.java

```
package com.example.exno10;  
import android.app.ListActivity;  
import android.content.Intent;  
import android.net.Uri;  
import android.os.AsyncTask;  
import android.os.AsyncTask;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.ArrayAdapter;  
import android.widget.ListView;  
import org.xmlpull.v1.XmlPullParser;  
import org.xmlpull.v1.XmlPullParserException;  
import org.xmlpull.v1.XmlPullParserFactory;  
import java.io.IOException;  
import java.io.InputStream;  
import java.net.MalformedURLException;  
import java.net.URL;  
import java.util.ArrayList;  
import java.util.List;  
public class MainActivity extends ListActivity  
{  
    List headlines;  
    List links;  
    @Override  
    protected void onCreate(Bundle savedInstanceState)  
    {  
        super.onCreate(savedInstanceState);
```

```
        new MyAsyncTask().execute();
    }

    class MyAsyncTask extends AsyncTask<Object,Void,ArrayAdapter>
    {
        @Override
        protected ArrayAdapter doInBackground(Object[] params)
        {
            headlines = new ArrayList();
            links = new ArrayList();
            try
            {
                URL url = new URL("https://codingconnect.net/feed");
                XmlPullParserFactory factory = XmlPullParserFactory.newInstance();
                factory.setNamespaceAware(false);
                XmlPullParser xpp = factory.newPullParser();
                // We will get the XML from an input stream
                xpp.setInput(getInputStream(url), "UTF_8");
                boolean insideItem = false;
                // Returns the type of current event: START_TAG, END_TAG, etc..
                int eventType = xpp.getEventType();
                while (eventType != XmlPullParser.END_DOCUMENT)
                {
                    if (eventType == XmlPullParser.START_TAG)
                    {
                        if (xpp.getName().equalsIgnoreCase("item"))
                        {
                            insideItem = true;
                        }
                        else if (xpp.getName().equalsIgnoreCase("title"))
                        {
                            headline = xpp.getText();
                            headlines.add(headline);
                        }
                    }
                    eventType = xpp.next();
                }
            }
            catch (Exception e)
            {
                e.printStackTrace();
            }
        }

        @Override
        protected void onPostExecute(ArrayAdapter result)
        {
            adapter = result;
            listView.setAdapter(adapter);
        }
    }
}
```

```
{  
    if (insideItem)  
        headlines.add(xpp.nextText()); //extract the headline  
    }  
    else if (xpp.getName().equalsIgnoreCase("link"))  
    {  
        if (insideItem)  
            links.add(xpp.nextText()); //extract the link of article  
        }  
    }  
    else  
if(eventType==XmlPullParser.END_TAG&&xpp.getName().equalsIgnoreCase  
("item"))  
{  
    insideItem=false;  
}  
eventType = xpp.next(); //move to next element  
}  
}  
catch (MalformedURLException e)  
{  
    e.printStackTrace();  
}  
catch (XmlPullParserException e)  
{  
    e.printStackTrace();  
}  
catch (IOException e)  
{
```

```
        e.printStackTrace();
    }
    return null;
}
protected void onPostExecute(ArrayAdapter adapter)
{
    adapter = new ArrayAdapter(MainActivity.this,
        android.R.layout.simple_list_item_1,
        headlines);
    setListAdapter(adapter);
}
@Override
protected void onListItemClick(ListView l, View v, int position, long id)
{
    Uri uri = Uri.parse((links.get(position)).toString());
    Intent intent = new Intent(Intent.ACTION_VIEW, uri);
    startActivity(intent);
}
public InputStream getInputStream(URL url)
{
    try
    {
        return url.openConnection().getInputStream();
    }
    catch (IOException e)
    {
        return null;
    }
}
```

activity_main.xml

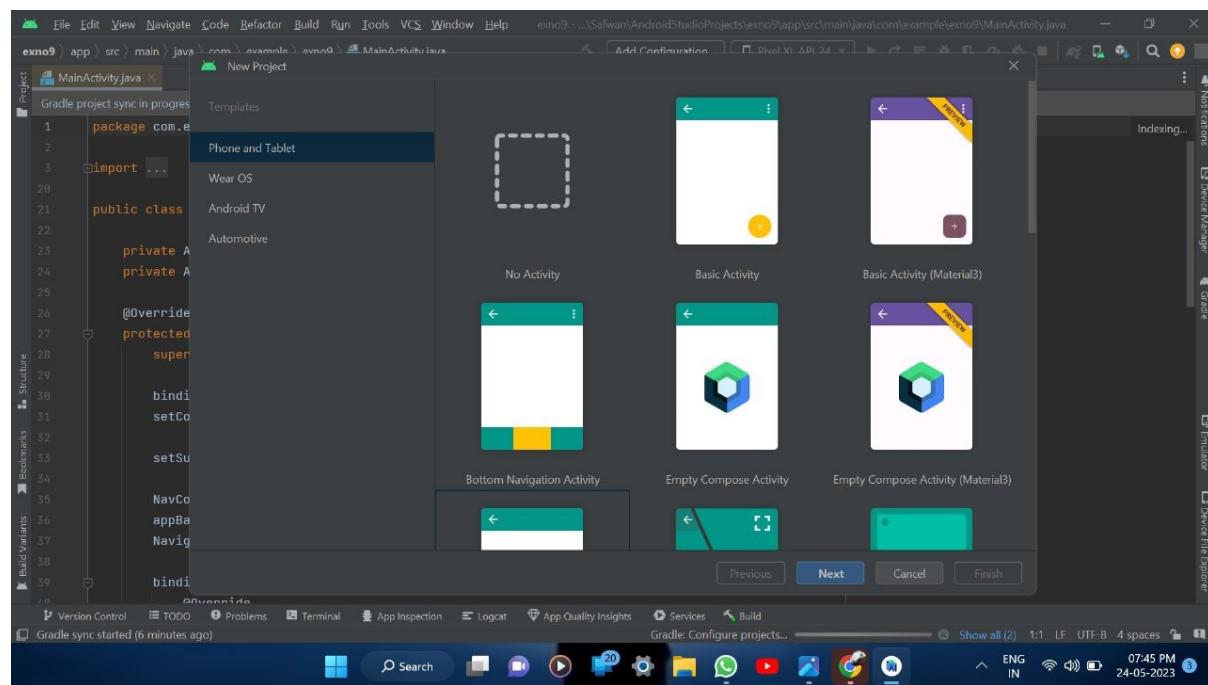
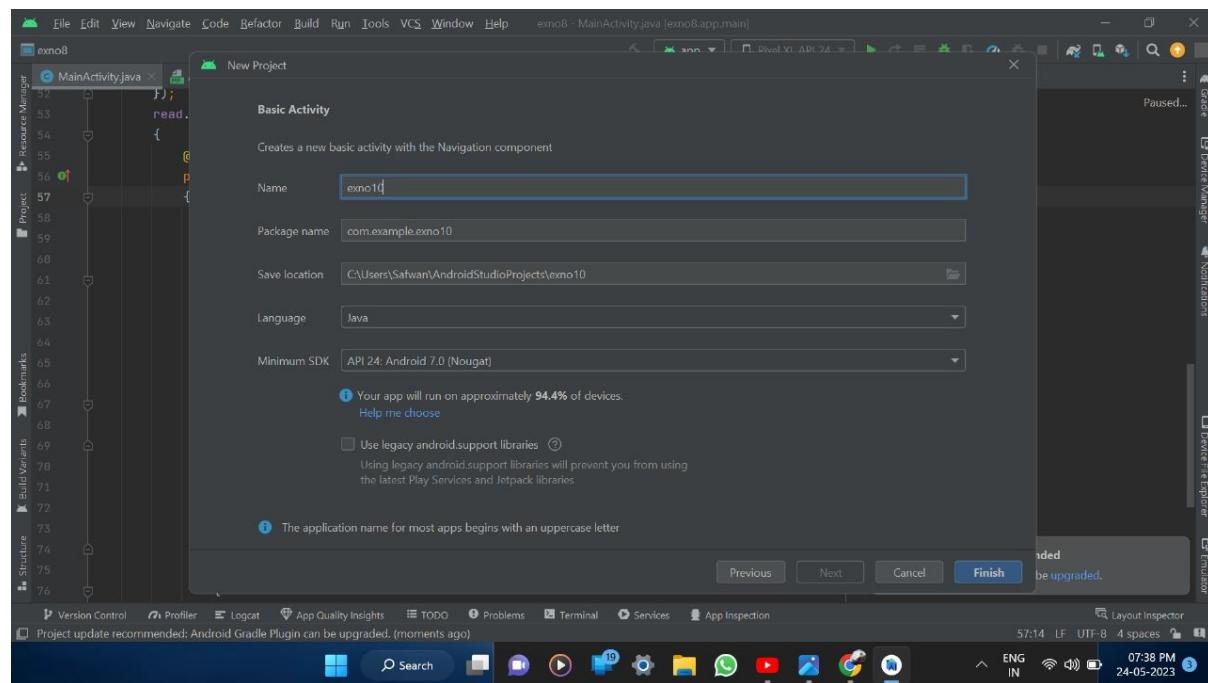
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical" >
    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"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

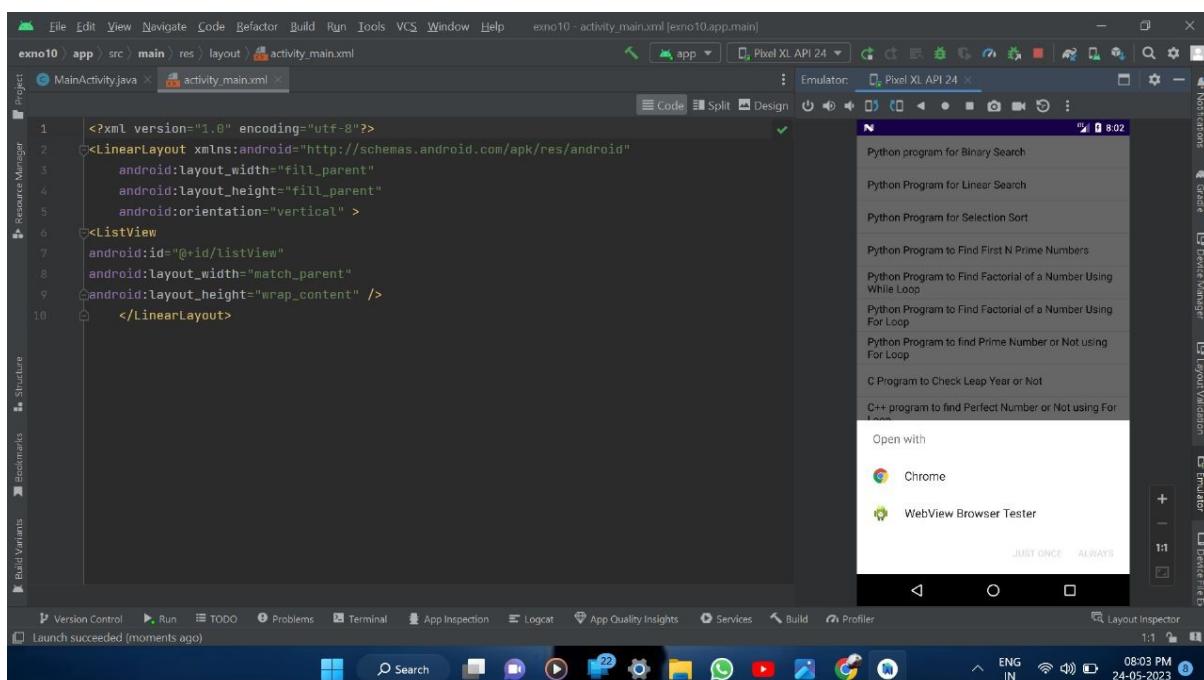
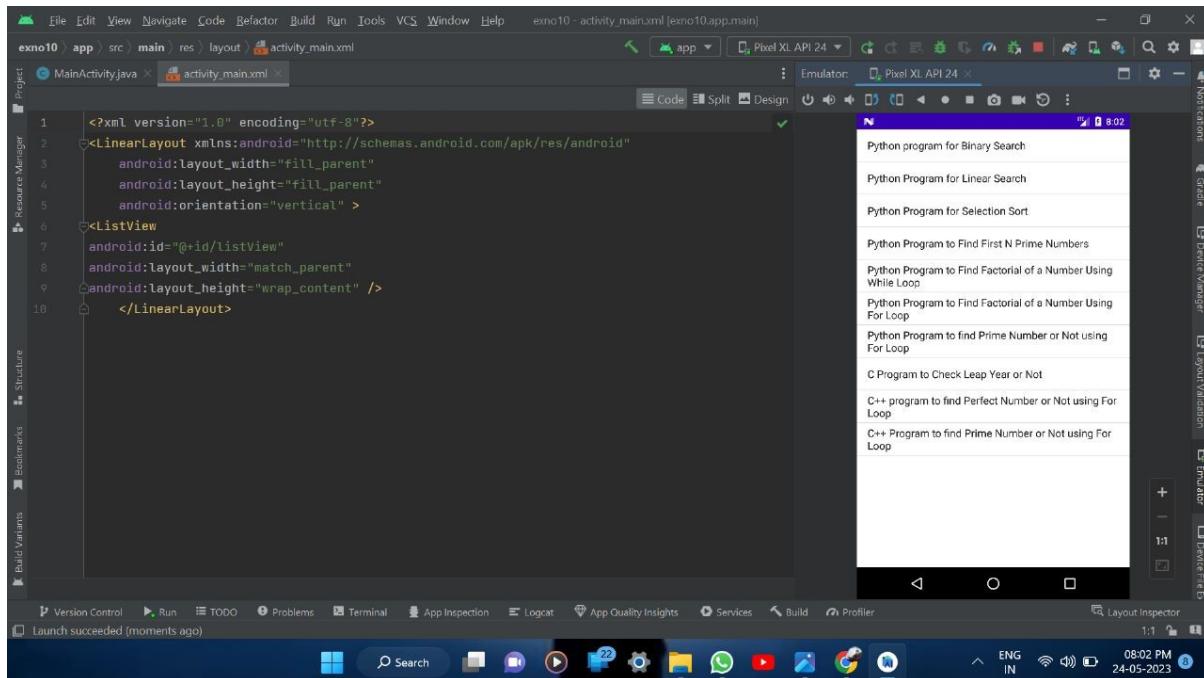
AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Exno10"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true"
            android:label="@string/app_name"
```

```
    android:theme="@style/Theme.Exno10.NoActionBar">
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
<meta-data
    android:name="android.app.lib_name"
    android:value="" />
</activity>
</application>
<uses-permission android:name="android.permission.INTERNET"/>
</manifest>
```

OUTPUT





RESULT

Thus a simple Android Application that makes use of RSS feed is designed Implemented and executed sucessfully a

PROGRAM 11:

MainActivity.java

```
package com.example.exno11;  
import android.content.Intent;  
import android.os.Bundle;  
import android.widget.Button;  
import android.widget.EditText;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity {  
    // define objects for edit text and button  
    Button button;  
    EditText sendto, subject, body;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        // Getting instance of edittext and button  
        sendto = findViewById(R.id.editText1);  
        subject = findViewById(R.id.editText2);  
        body = findViewById(R.id.editText3);  
        button = findViewById(R.id.button);  
        // attach setOnClickListener to button with Intent object define in it  
        button.setOnClickListener(view -> {  
            String emailsend = sendto.getText().toString();  
            String emailsubject = subject.getText().toString();  
            String emailbody = body.getText().toString();  
            // define Intent object with action attribute as ACTION_SEND  
            Intent intent = new Intent(Intent.ACTION_SEND);  
            // add three fields to intent using putExtra function
```

```
        intent.putExtra(Intent.EXTRA_EMAIL, new String[]{emailsend});  
        intent.putExtra(Intent.EXTRA_SUBJECT, emailsubject);  
        intent.putExtra(Intent.EXTRA_TEXT, emailbody);  
        // set type of intent  
        intent.setType("message/rfc822");  
        // startActivity with intent with chooser as Email client using  
createChooser function  
        startActivity(Intent.createChooser(intent, "Choose an Email client :"));  
    };  
}  
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<!-- Relative Layout -->  
<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">  
    <!-- Edit text for email id -->  
    <EditText  
        android:id="@+id/editText1"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_alignParentTop="true"  
        android:layout_alignParentRight="true"  
        android:layout_marginTop="18dp"  
        android:layout_marginRight="22dp" />  
    <!-- Edit text for email subject -->
```

```
<EditText  
    android:id="@+id/editText2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_below="@+id/editText1"  
    android:layout_alignLeft="@+id/editText1"  
    android:layout_marginTop="20dp" />  
<!-- Edit text for email body -->  
<EditText  
    android:id="@+id/editText3"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_below="@+id/editText2"  
    android:layout_alignLeft="@+id/editText2"  
    android:layout_marginTop="30dp" />  
<!-- text Views for label -->  
<TextView  
    android:id="@+id/textView1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_alignBaseline="@+id/editText1"  
    android:layout_alignBottom="@+id/editText1"  
    android:layout_alignParentLeft="true"  
    android:text="Send To:"  
    android:textColor="#0F9D58" />  
<TextView  
    android:id="@+id/textView2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"
```

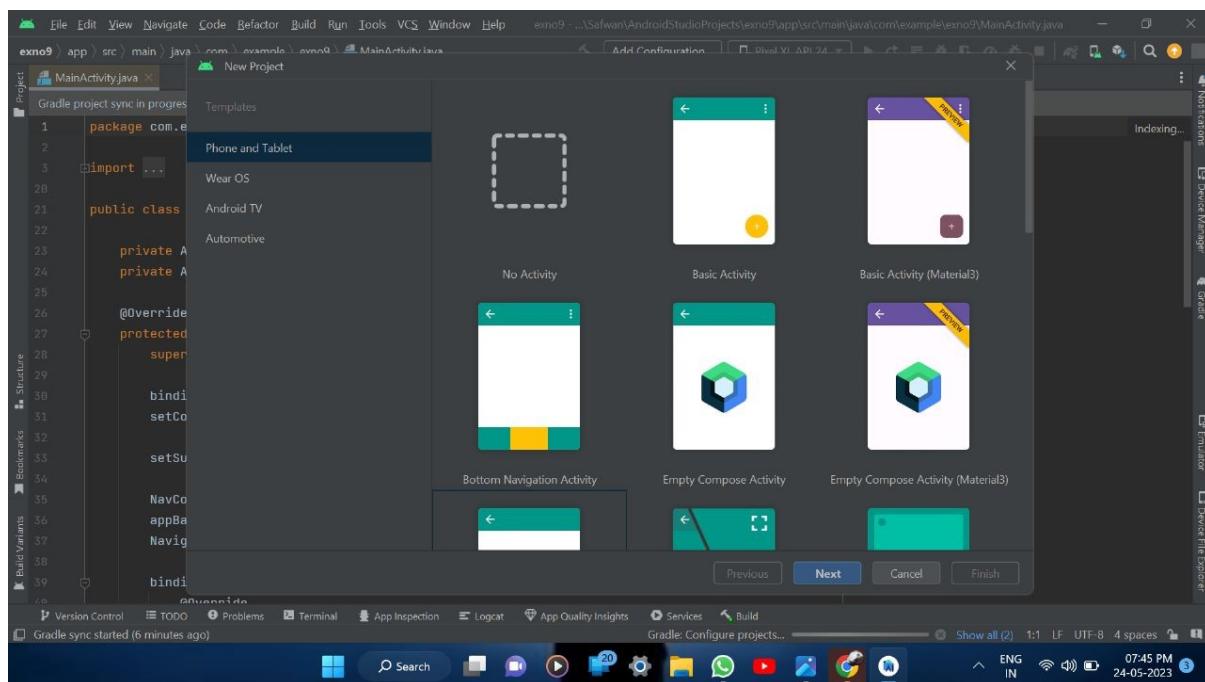
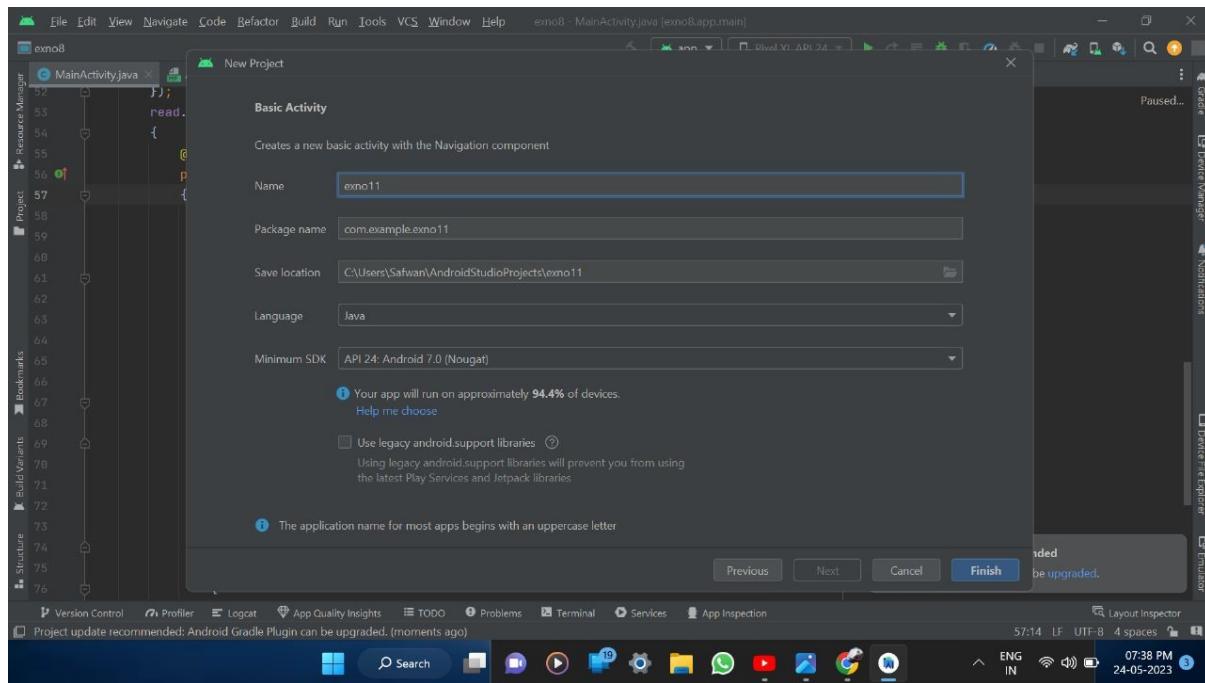
```
    android:layout_alignBaseline="@+id/editText2"
    android:layout_alignBottom="@+id/editText2"
    android:layout_alignParentLeft="true"
    android:text="Email Subject:"
    android:textColor="#0F9D58" />

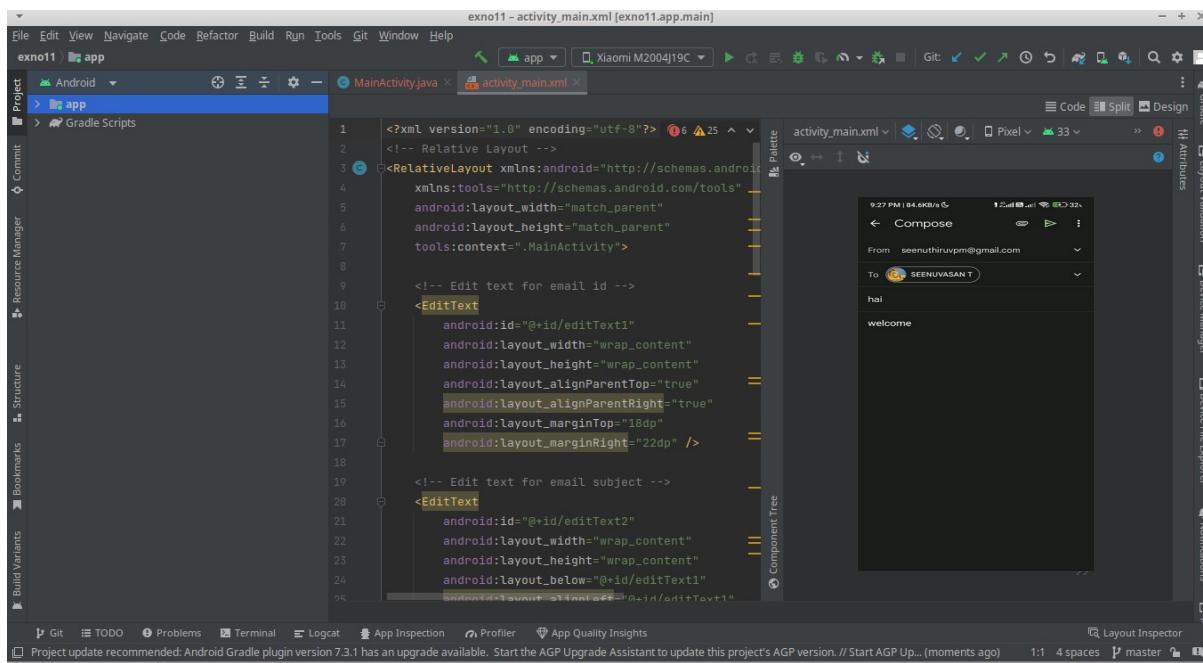
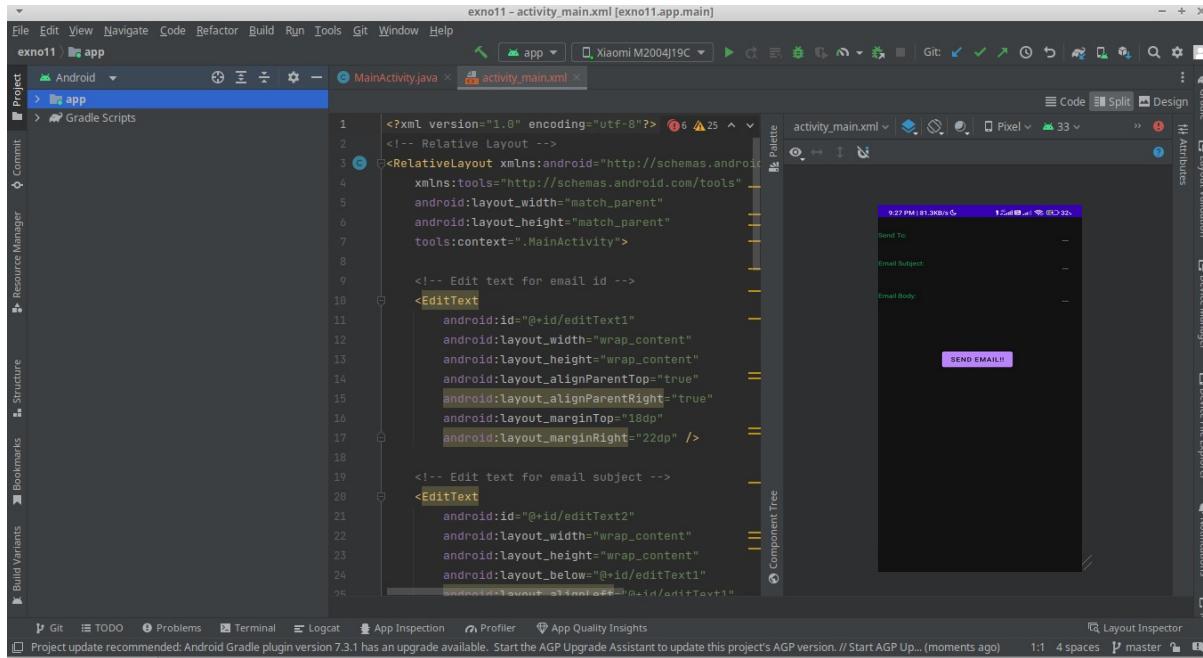
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/editText3"
    android:layout_alignBottom="@+id/editText3"
    android:text="Email Body:"
    android:textColor="#0F9D58" />

<!-- Button to send email -->
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText3"
    android:layout_alignLeft="@+id/editText3"
    android:layout_marginLeft="76dp"
    android:layout_marginTop="20dp"
    android:text="Send email!!" />

</RelativeLayout>
```

OUTPUT





RESULT

Thus a simple Android Application that to send an email is designed Implemented and executed sucessfully a

PROGRAM 12 :

MainActivity.java

```
package com.example.exno12;
import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity implements
OnClickListener
{
    //Defining the Views
    EditText Num1;
    EditText Num2;
    Button Add;
    Button Sub;
    Button Mul;
    Button Div;
    TextView Result;
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //Referring the Views
```

```
Num1 = (EditText) findViewById(R.id.editText1);
Num2 = (EditText) findViewById(R.id.editText2);
Add = (Button) findViewById(R.id.Add);
Sub = (Button) findViewById(R.id.Sub);
Mul = (Button) findViewById(R.id.Mul);
Div = (Button) findViewById(R.id.Div);
Result = (TextView) findViewById(R.id.textView);
// set a listener
Add.setOnClickListener(this);
Sub.setOnClickListener(this);
Mul.setOnClickListener(this);
Div.setOnClickListener(this);
}
@Override
public void onClick (View v)
{
    float num1 = 0;
    float num2 = 0;
    float result = 0;
    String oper = "";
    // check if the fields are empty
    if (TextUtils.isEmpty(Num1.getText().toString()) ||
        TextUtils.isEmpty(Num2.getText().toString()))
        return;
    // read EditText and fill variables with numbers
    num1 = Float.parseFloat(Num1.getText().toString());
    num2 = Float.parseFloat(Num2.getText().toString());
    // defines the button that has been clicked and performs the corresponding
    operation
```

```
// write operation into oper, we will use it later for output
switch (v.getId())
{
    case R.id.Add:
        oper = "+";
        result = num1 + num2;
        break;
    case R.id.Sub:
        oper = "-";
        result = num1 - num2;
        break;
    case R.id.Mul:
        oper = "*";
        result = num1 * num2;
        break;
    case R.id.Div:
        oper = "/";
        result = num1 / num2;
        break;
    default:
        break;
}
// form the output line
Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
}
```

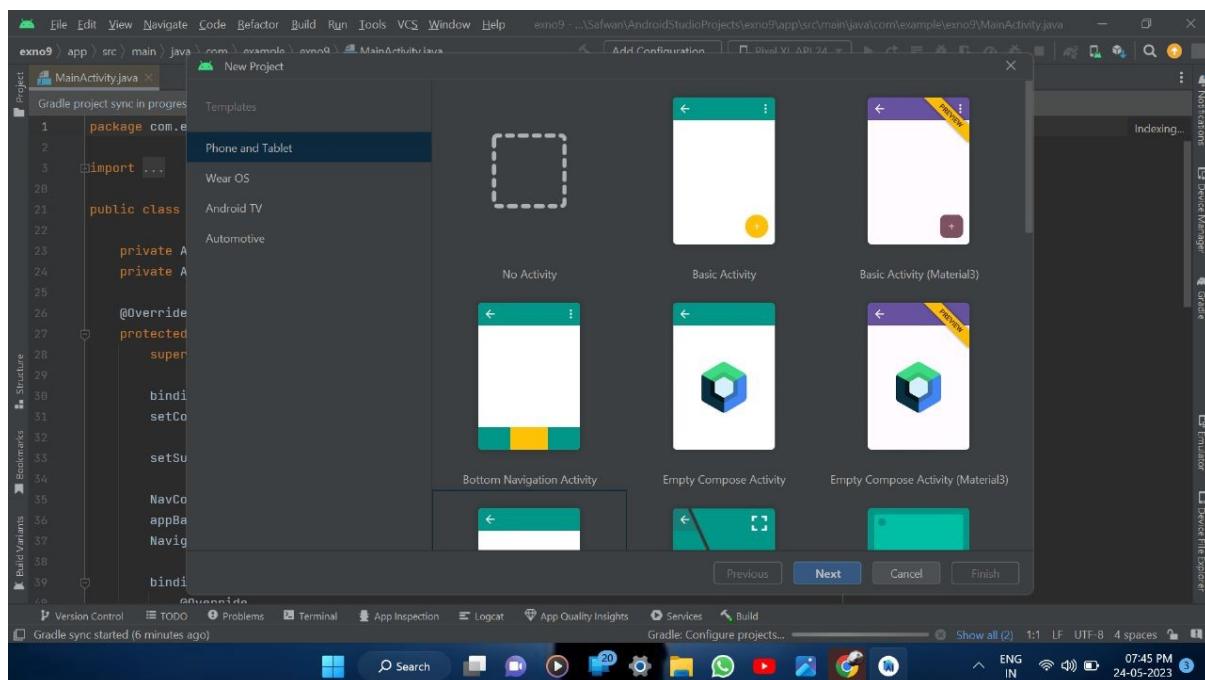
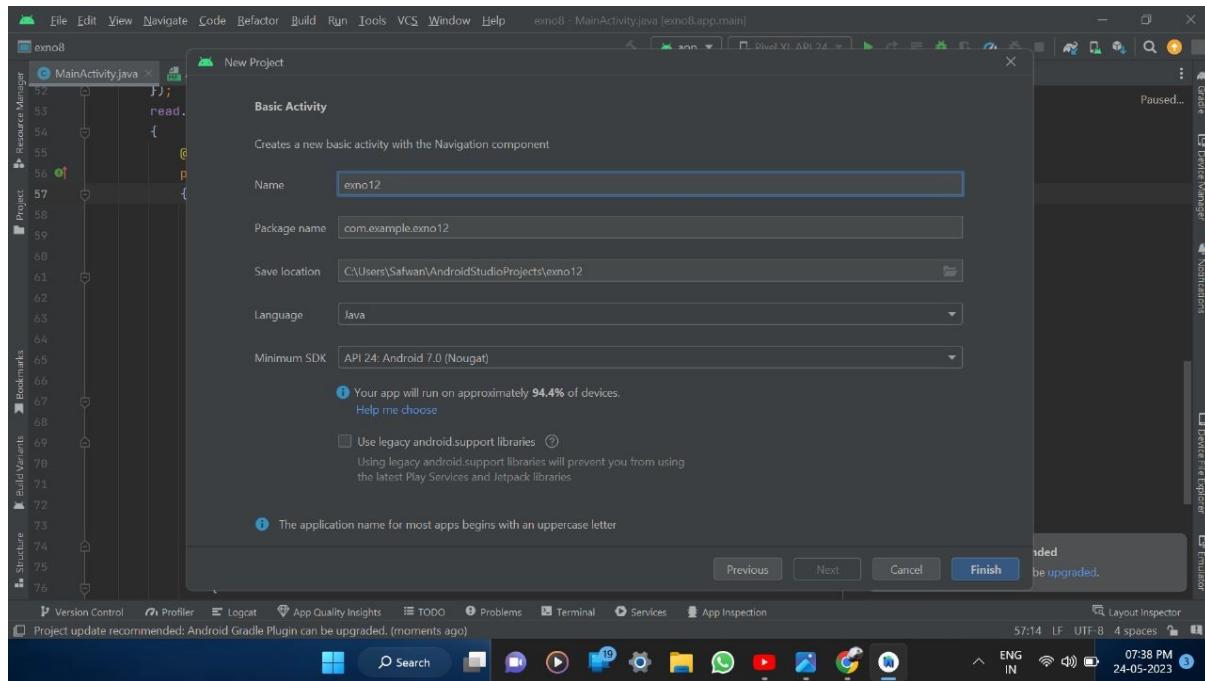
activity_main.xml

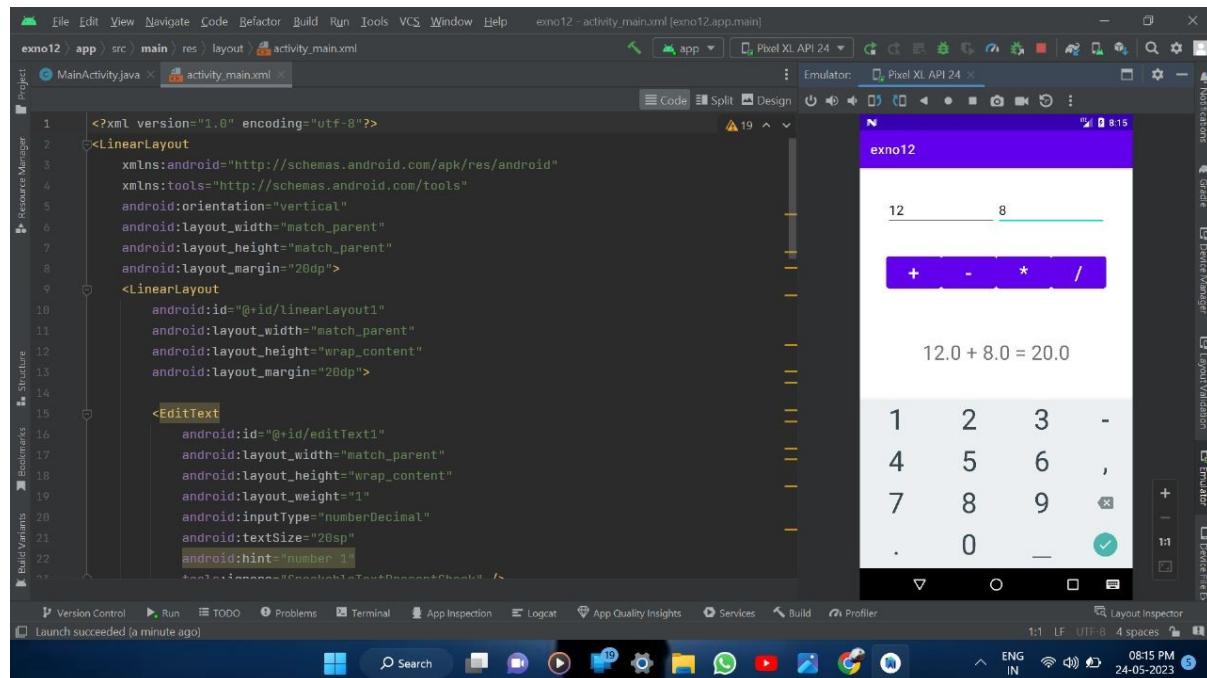
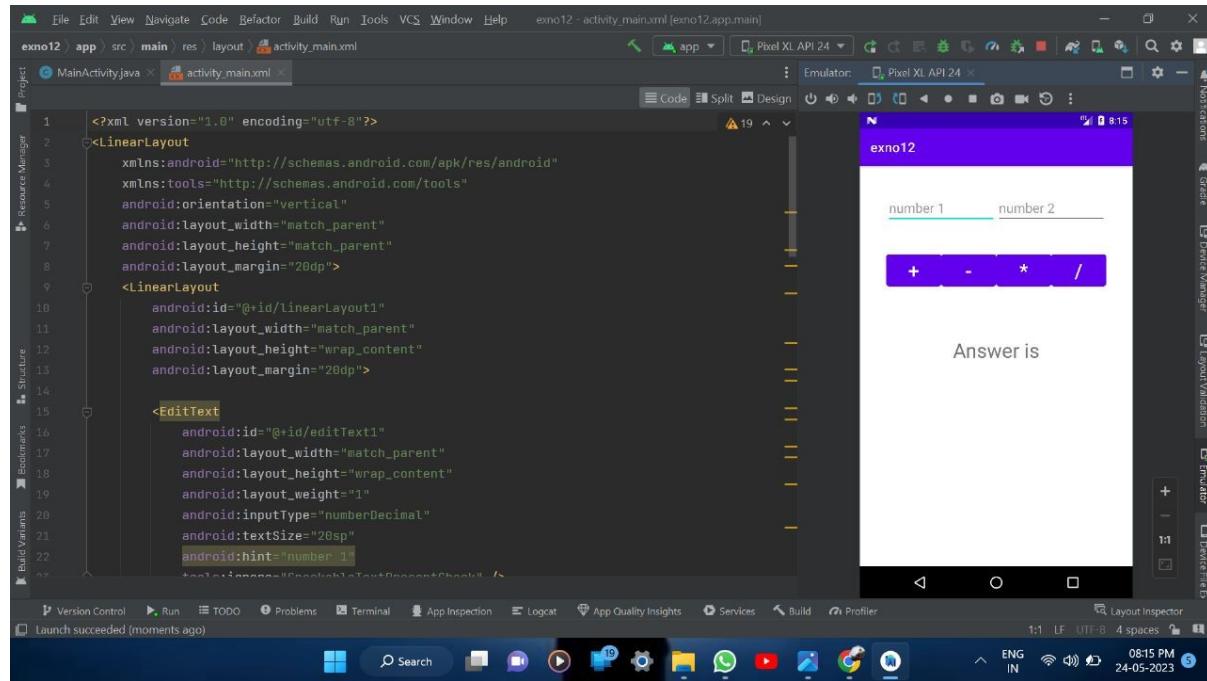
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="20dp">
    <LinearLayout
        android:id="@+id/linearLayout1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp">
        <EditText
            android:id="@+id/editText1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:inputType="numberDecimal"
            android:textSize="20sp"
            android:hint="number 1"
            tools:ignore="SpeakableTextPresentCheck" />
        <EditText
            android:id="@+id/editText2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:hint="number 2" />
```

```
        android:inputType="numberDecimal"
        android:textSize="20sp" />
    </LinearLayout>
    <LinearLayout
        android:id="@+id/linearLayout2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp">
        <Button
            android:id="@+id/Add"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="+"
            android:textSize="30sp"/>
        <Button
            android:id="@+id/Sub"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="-"
            android:textSize="30sp"/>
        <Button
            android:id="@+id/Mul"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="*"
            android:textSize="30sp"/>
```

```
<Button  
    android:id="@+id/Div"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_weight="1"  
    android:text="/"  
    android:textSize="30sp"/>  
</LinearLayout>  
<TextView  
    android:id="@+id/textView"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginTop="50dp"  
    android:text="Answer is"  
    android:textSize="30sp"  
    android:gravity="center"/>  
</LinearLayout>
```

OUTPUT





RESULT

Thus a simple Android Application that for simple needs (calculator app) is designed Implemented and executed sucessfully