1. Setting up the development Enviroment.

step-1 - Install the latest Canary build or Stable build of Android Studio.

Step-2 - In Android Studio, go to Tool>SDK Manager.

step-3 - In the SDK Platforms tab, select Android TiramisuPrivacy Sandbox Preview.

step-4 - In the SDK Tools tab, select Android SDK Build - Tools 33.

step-5 - Click OK to install the SDK.

2, Implement an android application that demonstrates the use of scroll view for text with HTML formatting.

```
<Scrollview>
  <Linearlayout Vertical>
    <Textview/>
    <Button/>
    <HTML/>

  </Linearlayout Vertical>
  </Scrollview>.
```

3. Develop an application that uses GUI Components, Font & Colour:-

```xml
<?xml version = "1.0" encoding = utf-8?>
<LinearLayout xmlns:android=" http://schema
.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:gravity = " center"
    android:layout_margin = " 30 dp"
    android:text =" Hello World!"
    android:textSize = "25 sp "
    android:textStyle =" bold" />

<Button
    android:id ="@+id/button1"
    android:layout_width ="match_parent"
```

```
android:layout_height=" wrap_content"
android: layout_margin ="20 dp"
android: gravity =" center"
android: text = "Change font Size"
android: textSize = "25 sp"    />

<Button
 android:layout_width="match Parent"
 android: id = "@+id / button2"
 android: layout_height =" wrap_content"
 android : layout_margin =" 20dp"
 android : gravity =" center"
 android: text =" Change Color"
 android : textSize = " 25 sp"    />

</ LinearLayout>
```

4. Develop an application that uses Layout Manager and event listeners.

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

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

```xml
    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 = "150 dp"
    android : text = "Submit"  />
      </RelativeLayout>.


    package com. example. exno2 ;


    import android. content. Intent ;
    import android. support. v7.app. App Compt
        Activity;
    import android. os. Bundle ;
    import android .widget. TextView .
```

```java
public class SecondActivity extends AppCom-
    patActivity {
    TextView t1, t2, t3;
    String name, reg, dept;
    @Override
    protected void onCreate (Bundle savedInst
    anceState) {
    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);

    Intent i = getIntent ();

    name = i.getStringExtra ("name_key");
    reg = i.getStringExtra ("reg_key");
    dept = i.getStringExtra ("dept_key");

    t1.setText (name);
    t2.setText (reg);
    t3.setText (dept);
    }
}
```

5. Write an application that draws basic graphical primitives on the screen.

```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>
```

```java
package com.example.exno4;
import android.app.Activity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.drawable;
```

```java
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);

    Bitmap bg = Bitmap.createBitmap (720,
    1280, Bitmap.Config.ARG_8888);

    ImageView i = (ImageView) findViewById
        (R.id.imageView);
    i.setBackgroundDrawable (new BitmapD
        rawable (bg));

    Canvas canvas = new Canvas(bg);

    Paint paint = new Paint ();
    paint.setColor (color.Blue);
    paint.setTextSize (50);
```
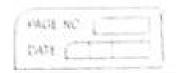
```
Canvas.drawText ("Rectangle", 420, 150, paint);
Canvas.drawRect (400, 200, 650, 700, paint);

Canvas.drawText ("Circle", 120, 150, paint);
Canvas.drawRect ("200, 350, 150, paint);

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

canvas.drawText ("Line", 480, 800, paint);
canvas.drawRect ("520, 850, 520, 1150, paint);
    }
}
```

6 Develop an application that makes use of database.

```
package Com.example.exno5;
import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.cursor;
import android.database.sqlite.SQLite
       Database;
import android.os.Bundle;
import android.view.View;

public class MainActivity extends Activity
    implements OnClickListener
  {
    EditText Rollno, Name, Marks;
Button Insert, Delete, Update, View, ViewAll;
sQLiteDatabase db;
@Override
public void onCreate( Bundle SavedInstance
     State)
  {
```

```java
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);

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

Insert.setOnClickListener(this);
Delete.setOnClickListener(this);
Update.setOnClickListener(this);
View.setOnClickListener(this);
ViewAll.setOnClickListener(this);

db = openOrCreateDatabase("StudentDB",
    Context.MODE_PRIVATE, null);
db = execSQL("CREATE TABLE IF NOT EXIST
    student (rollno VARCHAR, name VARCHA
    marks VARCHAR); ");
}
```

```java
public void onClick (View view)
{
    if ( view == Insert)
    {
        if (Rollno.getText().toString().trim().length()
            ==0 || Name.getText().toString().trim().length
            ==0 || Marks.getText().toString().trim().length==0)
        {
            showMessage ("Error", "Please enter all value");
            return;
        }
        db. execSQL ("INSERT INTO student VALUES ('"
            + Rollno.getText()+"','"+Name.getText() +
            "','"+Marks.getText() +"')");
        showMessage ("Success", "Record added");
        clearText();
    }
    if (view == Delete)
    {
        if (Rollno.getText().toString().trim().length()=0)
        {
            showMessage("Error", "Please enter Rollno");
            return;
        }
    }
```

```java
Cursor c=db.rawQuery ("SELECT * FROM student
WHERE rollno="'"+ Rollno.getText()+"'", null);
if (c.moveTofirst())
{
    db.execSQL ("DELETE FROM student WHERE
    rollno ='" + Rollno.getText()+'");
    showMessage ("Success", "Record Deleted");
}
else
{
    showMessage ("Error","Invalid Rollno");
}
clearText();
}
if (view = ViewAll)
{
    Cursor c=db.rawQuery ("SELECT FROM student,
    null);
    if (c.getCount() ==0)
    {
        showMessage ("Error", "No records found);
        return;
    }
    StringBuffer buffer new StringBuffer();
```

```java
while (c.moveToNext())
{
    buffer.append("Rollno:" + c.getString(0)+
        "\n");
    buffer.append("Name:" + c.getString(1)+
        "\n");
    buffer.append("Marks:" + c.getString(2)+
        "\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 ();
    }
}
```