**UI**

package com.example.uiagain;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.CheckBox;  
import android.widget.EditText;  
import android.widget.RadioButton;  
import android.widget.RadioGroup;  
import android.widget.Spinner;  
  
public class MainActivity extends AppCompatActivity {  
  
 EditText name, age, dob;  
 RadioGroup gender;  
 RadioButton male, female;  
 CheckBox ai, bc;  
 Button submit, reset;  
 Spinner year;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 name = findViewById(R.id.*editTextName*);  
 age = findViewById(R.id.*editTextAge*);  
 dob = findViewById(R.id.*editTextDob*);  
  
 gender = findViewById(R.id.*radioGroup*);  
 male = findViewById(R.id.*radioButtonMale*);  
 female = findViewById(R.id.*radioButtonFemale*);  
  
 ai = findViewById(R.id.*checkBoxAI*);  
 bc = findViewById(R.id.*checkBoxBC*);  
  
 submit = findViewById(R.id.*buttonSubmit*);  
 reset = findViewById(R.id.*buttonReset*);  
  
 year = findViewById(R.id.*spinnerYear*);  
  
 reset.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 name.setText("");  
 age.setText("");  
 dob.setText("");  
  
 gender.clearCheck();  
  
 if(ai.isChecked()) ai.toggle();  
 if(bc.isChecked()) bc.toggle();  
 }  
 });  
  
 submit.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(),DisplayActivity.class);  
 intent.putExtra("name", name.getText().toString());  
 int radioCh = gender.getCheckedRadioButtonId();  
 RadioButton choice = findViewById(radioCh);  
 intent.putExtra("gender",choice.getText().toString());  
 intent.putExtra("age",age.getText().toString());  
 intent.putExtra("dob", dob.getText().toString());  
  
 String subs = "";  
 if(ai.isChecked()) subs+="AI ";  
 if(bc.isChecked()) subs += "Block Chain";  
 intent.putExtra("subject",subs);  
  
 intent.putExtra("year",year.getSelectedItem().toString());  
  
 startActivity(intent);  
 }  
 });  
 }  
}

<resources>  
 <string name="app\_name">UIAgain</string>  
 <string-array name="year">  
 <item>Year 1</item>  
 <item>Year 2</item>  
 <item>Year 3</item>  
 <item>Year 4</item>  
 </string-array>  
</resources>

package com.example.uiagain;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class DisplayActivity extends AppCompatActivity {  
  
 TextView name, age, dob, gender, subject, year;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_display*);  
  
 Intent intent = getIntent();  
  
 name = findViewById(R.id.*textViewName*);  
 age = findViewById(R.id.*textViewAge*);  
 dob = findViewById(R.id.*textViewDob*);  
 gender = findViewById(R.id.*textViewGender*);  
 subject = findViewById(R.id.*textViewSubject*);  
 year = findViewById(R.id.*textViewYear*);  
  
 name.setText(intent.getStringExtra("name"));  
 age.setText(intent.getStringExtra("age"));  
 dob.setText(intent.getStringExtra("dob"));  
 gender.setText(intent.getStringExtra("gender"));  
 subject.setText(intent.getStringExtra("subject"));  
 year.setText(intent.getStringExtra("year"));  
  
 }  
}

**GRAPHICS**

package com.example.graphics;  
  
import androidx.annotation.RequiresApi;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.graphics.Bitmap;  
import android.graphics.Canvas;  
import android.graphics.Color;  
import android.graphics.Paint;  
import android.graphics.drawable.BitmapDrawable;  
import android.os.Build;  
import android.os.Bundle;  
import android.widget.ImageView;  
  
public class MainActivity extends AppCompatActivity {  
  
 ImageView image;  
  
 @RequiresApi(api = Build.VERSION\_CODES.*LOLLIPOP*)  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 image = findViewById(R.id.*imageView*);  
  
 Bitmap bitmap = Bitmap.*createBitmap*(400,600, Bitmap.Config.*ARGB\_8888*);  
  
 image.setBackgroundDrawable(new BitmapDrawable(bitmap));  
  
 Canvas canvas = new Canvas(bitmap);  
  
 Paint paint = new Paint();  
  
 paint.setColor(Color.*RED*);  
 paint.setTextSize(20);  
  
 canvas.drawText("Line", 100, 100, paint);  
 canvas.drawLine(100, 150,100, 200, paint);  
  
 canvas.drawText("Rectangle", 300,100,paint);  
 canvas.drawRect(200, 150,300,200,paint);  
  
 canvas.drawCircle(100,300,50,paint);  
  
 canvas.drawArc(200, 300,300,500,90,45,true,paint);  
 }  
}

<?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">  
  
 <ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="0dp"  
 android:layout\_height="0dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**Animation**

package com.example.practice;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
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.view.View;  
import android.view.animation.Animation;  
import android.view.animation.AnimationUtils;  
import android.widget.Button;  
import android.widget.ImageView;  
  
public class MainActivity extends AppCompatActivity {  
  
 ImageView iv;  
 Button fw, bw, up, down, rot, zoom, fade;  
 float angle = 5;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 iv = findViewById(R.id.*imageView*);  
 fw = findViewById(R.id.*button*);  
 bw = findViewById(R.id.*button2*);  
 up = findViewById(R.id.*button3*);  
 down = findViewById(R.id.*button4*);  
 rot = findViewById(R.id.*button5*);  
 zoom = findViewById(R.id.*button6*);  
 fade = findViewById(R.id.*button7*);  
 Bitmap bitmap = Bitmap.*createBitmap*(400,600,Bitmap.Config.*ARGB\_8888*);  
  
 iv.setBackgroundDrawable(new BitmapDrawable(bitmap));  
  
 Canvas canvas = new Canvas(bitmap);  
 Paint paint = new Paint();  
  
 paint.setColor(Color.*BLACK*);  
 paint.setTextSize(20);  
  
 canvas.drawLine(30,180,30,250,paint);  
 canvas.drawLine(30,180,270,180,paint);  
 canvas.drawLine(270,180,270,250,paint);  
 canvas.drawLine(30,250,270,250,paint);  
 canvas.drawLine(100,130,200,130,paint);  
 canvas.drawLine(200,130,200,180,paint);  
 canvas.drawLine(200,180,100,180,paint);  
 canvas.drawLine(100,180,100,130,paint);  
 canvas.drawCircle(80,250,20, paint);  
 canvas.drawCircle(220,250,20, paint);  
  
 fw.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 move();  
 }  
 });  
  
 bw.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 back();  
 }  
 });  
  
 up.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 up();  
 }  
 });  
  
 down.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 down();  
 }  
 });  
  
 rot.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 rot();  
 }  
 });  
  
 zoom.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 zoom();  
 }  
 });  
  
 fade.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 fade();  
 }  
 });  
 }  
  
 void move(){  
 iv.animate().translationXBy(50f).setDuration(600);  
 angle\*=-1;  
 iv.animate().rotationBy(angle);  
 }  
  
 void back(){  
 iv.animate().translationXBy(-50f).setDuration(600);  
 angle\*=-1;  
 iv.animate().rotationBy(angle);  
 }  
  
 void up(){  
 iv.animate().translationYBy(-50f).setDuration(600);  
 }  
 void down(){  
 iv.animate().translationYBy(50f).setDuration(600);  
 }  
  
 void rot(){  
 iv.animate().rotationBy(360).setDuration(600);  
 }  
  
 void zoom(){  
 Animation zoom = AnimationUtils.*loadAnimation*(getApplicationContext(),R.anim.*zoom*);  
 iv.startAnimation(zoom);  
 }  
  
 void fade(){  
 Animation fade = AnimationUtils.*loadAnimation*(getApplicationContext(), R.anim.*fade*);  
 iv.startAnimation(fade);  
 }  
}

zoom

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
 <scale xmlns:android="http://schemas.android.com/apk/res/android"  
 android:fromXScale="1"  
 android:toXScale="2"  
 android:fromYScale="1"  
 android:toYScale="2"  
 android:duration="1000"  
 >  
 </scale>  
</set>

fade

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
 <alpha  
 android:fromAlpha="0"  
 android:toAlpha="1"  
 android:duration="1000">  
  
 </alpha>  
</set>

**DATABASE**

**MainActivity.java**

package com.example.employee;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
  
 Button create, insert, update, delete, retrieve;  
 SQLiteDatabase db;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
  
 create = findViewById(R.id.createBtn);  
 insert = findViewById(R.id.insertBtn);  
 update = findViewById(R.id.updateBtn);  
 delete = findViewById(R.id.deleteBtn);  
 retrieve = findViewById(R.id.retrieveBtn);  
  
 create.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 db = openOrCreateDatabase("DB",MODE\_PRIVATE, null);  
 db.execSQL("drop table if exists Employee");  
 db.execSQL("create table Employee(id number, name varchar)");  
 Toast.makeText(getApplicationContext(),"DB created",Toast.LENGTH\_SHORT).show();  
 }  
 });  
  
 insert.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(),InsertActivity.class);  
 startActivity(intent);  
 }  
 });  
  
 update.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(), UpdateActivity.class);  
 startActivity(intent);  
 }  
 });  
  
 delete.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(),DeleteActivity.class);  
 startActivity(intent);  
 }  
 });  
  
 retrieve.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(), RetrieveActivity.class);  
 startActivity(intent);  
 }  
 });  
 }  
  
}

**Insert**

package com.example.employee;  
  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class InsertActivity extends AppCompatActivity {  
  
 EditText et1, et2;  
 Button insert;  
  
 SQLiteDatabase db;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_insert);  
  
 et1 = findViewById(R.id.editTextTextPersonName);  
 et2 = findViewById(R.id.editTextTextPersonName2);  
 insert = findViewById(R.id.button);  
  
 insert.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String name = et1.getText().toString();  
 String id = et2.getText().toString();  
  
 db = openOrCreateDatabase("DB", MODE\_PRIVATE, null);  
 try{  
 db.execSQL("insert into Employee values(?,?)",new String[]{id,name});  
 Toast.makeText(getApplicationContext(),"Insert success",Toast.LENGTH\_SHORT).show();  
 }  
 catch (Exception e){  
 Toast.makeText(getApplicationContext(),"Insert failed",Toast.LENGTH\_SHORT).show();  
 }  
  
  
  
  
 }  
 });  
 }  
}

**Delete**

package com.example.employee;  
  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class DeleteActivity extends AppCompatActivity {  
  
 EditText et5;  
 Button delete;  
  
 SQLiteDatabase db;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_delete);  
  
 et5 = findViewById(R.id.editTextTextPersonName5);  
 delete = findViewById(R.id.button3);  
  
 delete.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String id = et5.getText().toString();  
  
 db = openOrCreateDatabase("DB", MODE\_PRIVATE, null);  
 try  
 {  
 db.execSQL("delete from Employee where id = ?", new String[]{id});  
 Toast.makeText(getApplicationContext(),"Delete Success",Toast.LENGTH\_SHORT).show();  
 }  
 catch (Exception e){  
 Toast.makeText(getApplicationContext(),"Delete failed", Toast.LENGTH\_SHORT).show();  
 }  
 }  
 });  
 }  
}

**Retrieve:**

package com.example.employee;  
  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class RetrieveActivity extends AppCompatActivity {  
  
 EditText et6;  
 TextView tv;  
 Button retrieve;  
  
 SQLiteDatabase db;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_retrieve);  
  
 et6 = findViewById(R.id.editTextTextPersonName6);  
 retrieve = findViewById(R.id.button4);  
 tv = findViewById(R.id.textView);  
  
  
 retrieve.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String id = et6.getText().toString();  
 String name;  
 Cursor rs;  
 try  
 {  
 db = openOrCreateDatabase("DB", MODE\_PRIVATE, null);  
 rs = db.rawQuery("select \* from Employee where id = ?", new String[]{id});  
 while(rs.moveToNext()){  
 name = rs.getString(1);  
 tv.setText(name);  
 }  
 Toast.makeText(getApplicationContext(),"Retrieve success", Toast.LENGTH\_SHORT).show();  
 }  
 catch(Exception e){  
 Toast.makeText(getApplicationContext(),"Retrieve fail", Toast.LENGTH\_SHORT).show();  
 }  
  
 }  
 });  
 }  
}

**Update**

package com.example.employee;  
  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class UpdateActivity extends AppCompatActivity {  
  
 EditText et3, et4;  
 Button update;  
  
 SQLiteDatabase db;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_update);  
  
 update = findViewById(R.id.button2);  
 et3 = findViewById(R.id.editTextTextPersonName3);  
 et4 = findViewById(R.id.editTextTextPersonName4);  
  
 update.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
  
 String name = et3.getText().toString();  
 String id = et4.getText().toString();  
  
 db = openOrCreateDatabase("DB", MODE\_PRIVATE,null);  
 try{  
 db.execSQL("update Employee set id=?, name=? where id = ?", new String[]{id,name,id});  
 Toast.makeText(getApplicationContext(),"Update success", Toast.LENGTH\_SHORT).show();  
 }  
 catch(Exception e){  
 Toast.makeText(getApplicationContext(),"Update failed", Toast.LENGTH\_SHORT).show();  
 }  
 }  
 });  
  
  
 }  
}

**Retrieve All**

package com.example.dbagain;  
  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class RetrieveAllActivity extends AppCompatActivity {  
  
 TextView tvDetails;  
 SQLiteDatabase db;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_retrieve\_all*);  
  
 tvDetails = findViewById(R.id.*textView*);  
  
 String details = "";  
  
 db = openOrCreateDatabase("db",*MODE\_PRIVATE*, null);  
 Cursor res;  
 res = db.rawQuery("select \* from Emp", new String[]{});  
  
 while(res.moveToNext()){  
 details+=res.getString(0)+"\n"+ res.getString(1)+"\n"+res.getString(2)+"\n"+res.getString(3)+"\n";  
 details+="\n";  
 }  
  
 tvDetails.setText(details);  
 }  
}

**SMS**

package com.example.smsagain;  
  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.app.ActivityCompat;  
  
import android.app.PendingIntent;  
import android.content.Intent;  
import android.os.Bundle;  
import android.telephony.SmsManager;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Toast;  
  
import static android.Manifest.permission.*READ\_PHONE\_STATE*;  
import static android.Manifest.permission.*READ\_SMS*;  
import static android.Manifest.permission.*RECEIVE\_SMS*;  
import static android.Manifest.permission.*SEND\_SMS*;  
  
public class MainActivity extends AppCompatActivity {  
  
 EditText etNumber, etMessage;  
 Button send;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 etNumber = findViewById(R.id.*editTextNumber*);  
 etMessage = findViewById(R.id.*editTextMessage*);  
 send = findViewById(R.id.*buttonSend*);  
  
 ActivityCompat.*requestPermissions*(MainActivity.this,new String[]{*READ\_SMS*, *SEND\_SMS*, *RECEIVE\_SMS*, *READ\_PHONE\_STATE*},1);  
  
 send.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String number = etNumber.getText().toString();  
 String message = etMessage.getText().toString();  
  
 PendingIntent sentPI = PendingIntent.*getBroadcast*(getApplicationContext(),0,new Intent("Message sent"),0);  
 PendingIntent deliveredPI = PendingIntent.*getBroadcast*(getApplicationContext(),0,new Intent("Message delivered"),0);  
  
 SmsManager sm = SmsManager.*getDefault*();  
 sm.sendTextMessage(number,null,message,sentPI, deliveredPI);  
 Toast.*makeText*(getApplicationContext(), "Message Sent", Toast.*LENGTH\_SHORT*).show();  
 }  
 });  
 }  
}

<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 package="com.example.sms">  
 <uses-permission android:name="android.permission.READ\_SMS"/>  
 <uses-permission android:name="android.permission.SEND\_SMS"/>  
 <uses-permission android:name="android.permission.RECEIVE\_SMS"/>  
 <uses-permission android:name="android.permission.READ\_PHONE\_STATE"/>  
  
 <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.SMS">  
 <activity android:name=".MainActivity">  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
 </application>  
  
</manifest>

**SD CARD:**

package com.example.sdcard;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
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.FileOutputStream;  
import java.io.FileReader;  
  
public class MainActivity extends AppCompatActivity {  
  
 EditText name, content;  
 Button read, write;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 name = findViewById(R.id.*fileName*);  
 content = findViewById(R.id.*fileContent*);  
 read = findViewById(R.id.*readBtn*);  
 write = findViewById(R.id.*writeBtn*);  
  
 write.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 File file = new File(getFilesDir(), name.getText().toString());  
 try{  
 FileOutputStream fileOutputStream = new FileOutputStream((file));  
 fileOutputStream.write(content.getText().toString().getBytes());  
 fileOutputStream.close();  
 content.setText("");  
 Toast.*makeText*(getApplicationContext(),"File written",Toast.*LENGTH\_SHORT*).show();  
 }  
 catch (Exception e){  
 Toast.*makeText*(getApplicationContext(),"Write failed",Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 });  
  
 read.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String line, text = "";  
 File file = new File(getFilesDir(), name.getText().toString());  
 try{  
 BufferedReader bufferedReader = new BufferedReader(new FileReader(file));  
  
 while((line = bufferedReader.readLine()) != null){  
 text += line;  
 }  
 content.setText(text);  
 Toast.*makeText*(getApplicationContext(),"File read",Toast.*LENGTH\_SHORT*).show();  
 }  
 catch(Exception e){  
 Toast.*makeText*(getApplicationContext(),"Read failed",Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 });  
 }  
}

<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 package="com.example.sdcard">  
 <uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE"/>  
 <uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE"/>  
 <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.SDCard">  
 <activity android:name=".MainActivity">  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
 </application>  
  
</manifest>

**MULITHREADING**

package com.example.multiagain;  
import androidx.appcompat.app.AppCompatActivity;  
import android.graphics.Color;  
import android.os.Bundle;  
import android.os.Handler;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
import java.util.Random;  
  
public class MainActivity extends AppCompatActivity {  
  
 public Button startButton, resetButton, colorButton;  
  
 public TextView tv;  
 public final Handler ha = new Handler();  
 int idx = 0;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 tv = findViewById(R.id.*textView2*);  
  
 startButton = findViewById(R.id.*startButton*);  
 resetButton = findViewById(R.id.*resetButton*);  
 colorButton = findViewById(R.id.*leftButton*);  
  
  
 startButton.setOnClickListener(new View.OnClickListener(){  
 public void onClick(View v){  
 runnable.run();  
 }  
 });  
  
 resetButton.setOnClickListener(new View.OnClickListener(){  
 public void onClick(View v){  
 ha.removeCallbacks(runnable);  
 }  
 });  
  
 colorButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 new Thread(new Runnable() {  
 @Override  
 public void run() {  
 try{  
 tv.setTextColor(getRandomColor());  
 tv.setBackgroundColor(getRandomColor());  
 }  
 catch (Exception e){  
 //toast error  
 }  
 }  
 }).start();  
 }  
 });  
  
 }  
  
 public int getRandomColor(){  
 Random rnd = new Random();  
 return Color.*argb*(255, rnd.nextInt(256), rnd.nextInt(256), rnd.nextInt(256));  
 }  
  
 public String getSomeText(){  
 String name[] = {"Hi","this","is","a","scrolling","text"};  
 String t = name[idx];  
 idx = (idx+1)%6;  
 return t;  
 }  
  
 Runnable runnable = new Runnable() {  
 @Override  
 public void run() {  
 try {  
 doTask();  
 }catch (Exception e){  
 e.printStackTrace();  
 } finally {  
 ha.postDelayed(runnable, 500);  
 }  
 }  
 };  
  
 public void doTask() {  
 tv.setText(getSomeText());  
 }  
}

**LOCATION**

package com.example.locationagain;  
  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.app.ActivityCompat;  
  
import android.Manifest;  
import android.content.Context;  
import android.content.pm.PackageManager;  
import android.location.Location;  
import android.location.LocationListener;  
import android.location.LocationManager;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity implements LocationListener {  
  
 TextView latitude, longitude;  
 LocationManager locationManager;  
 Button get;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 get = findViewById(R.id.*buttonGet*);  
  
 get.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 getLocation();  
 }  
 });  
 }  
  
 void getLocation() {  
 try {  
 locationManager = (LocationManager) getSystemService(Context.*LOCATION\_SERVICE*);  
 locationManager.requestLocationUpdates(“gps”, 1000, 5, (LocationListener) this);  
 }  
 catch(SecurityException e) {  
 //error toast  
 }  
 }  
  
 @Override  
 public void onLocationChanged(Location location) {  
  
 latitude = findViewById(R.id.*latitude*);  
 longitude = findViewById(R.id.*longitude*);  
  
 latitude.setText("Latitude " +location.getLatitude());  
 longitude.setText("Longitude "+location.getLongitude());  
 }  
  
}

<uses-permission android:name="android.permission.ACCESS\_COARSE\_LOCATION" />

**FAKE ALARM**

package com.example.alarmclock;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.app.AlarmManager;  
import android.app.PendingIntent;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TimePicker;  
import android.widget.Toast;  
  
import java.util.Calendar;  
  
public class MainActivity extends AppCompatActivity {  
  
 TimePicker alarm;  
 Button set;

@Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 alarm = findViewById(R.id.*alarmClock*);  
 set = findViewById(R.id.*buttonSet*);  
  
 set.setOnClickListener(new View.OnClickListener() {  
 long time;  
 @Override  
 public void onClick(View v) {  
  
 Calendar calendar = Calendar.*getInstance*();  
 calendar.set(Calendar.*HOUR\_OF\_DAY*, alarm.getCurrentHour());  
 calendar.set(Calendar.*MINUTE*, alarm.getCurrentMinute());  
  
 time = (calendar.getTimeInMillis() - System.*currentTimeMillis*());  
  
 Toast.*makeText*(getApplicationContext(),"Alarm set",Toast.*LENGTH\_SHORT*).show();  
 try {  
 Thread.*sleep*(time);  
 Toast.*makeText*(getApplicationContext(),"WAKE UP",Toast.*LENGTH\_LONG*).show();  
 } catch (InterruptedException e) {  
 e.printStackTrace();  
 }  
  
 }  
 });  
 }  
}