ex_1

```
package com.example.ex_1;
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.graphics.drawable.ColorDrawable;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
    Button b1,b2,b3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=(Button)findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                b1.setBackgroundColor(Color.RED);
            }
        });
        b2=(Button)findViewById(R.id.button2);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                b2.setBackgroundColor(Color.BLUE);
            }
        });
        b3=(Button)findViewById(R.id.button3);
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                b3.setBackgroundColor(Color.YELLOW);
            }
        });
    }
}
```

ex_2

android:entries="@array/city"

```
package com.example.ex_2;
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;
public class MainActivity extends AppCompatActivity {
    EditText e1;
    Button b1;
    String a;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText) findViewById(R.id.editTextText2);
        b1=(Button) findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                a=e1.getText().toString();
                Toast.makeText(getApplicationContext(),"Welcome
Mr."+a,Toast.LENGTH_SHORT).show();
```

```
            }
        });
    }
}
```

ex_3

```
package com.example.ex_3;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16;
    EditText e1;
    char op;
    int a,b,r;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText) findViewById(R.id.editTextText);
        b1=(Button) findViewById(R.id.button);
        }
    public void zero(View view){
        e1.append("0");
    }
    public void one(View view){
        e1.append("1");
    }
    public void two(View view){
        e1.append("2");
    }
    public void three(View view){
        e1.append("3");
    }
    public void four(View view){
        e1.append("4");
    }
    public void five(View view){
        e1.append("5");
    }
    public void six(View view){
        e1.append("6");
    }
    public void seven(View view){
        e1.append("7");
    }
    public void eight(View view){
        e1.append("8");
    }
    public void nine(View view){
        e1.append("9");
    }
    public void add(View view){
        a=Integer.parseInt(e1.getText().toString());
        e1.setText("");
        op='+';
    }
    public void sub(View view){
        a=Integer.parseInt(e1.getText().toString());
        e1.setText("");
        op='-';
```

```
    }
    public void mul(View view){
        a=Integer.parseInt(e1.getText().toString());
        e1.setText("");
        op='*';
    }
    public void div(View view){
        a=Integer.parseInt(e1.getText().toString());
        e1.setText("");
        op='/';
    }
    public void clear(View view){
        e1.setText("");
    }
    public void equal(View view){
        b=Integer.parseInt(e1.getText().toString());
        e1.setText("");
        switch(op){
            case'+':
                r=a+b;
                e1.append(Integer.toString(r));
                break;
            case'-':
                r=a-b;
                e1.append(Integer.toString(r));
                break;
            case'*':
                r=a*b;
                e1.append(Integer.toString(r));
                break;
            case'/':
                r=a/b;
                e1.append(Integer.toString(r));
                break;
        }
    }
    }
```

ex_4

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:id="@+id/ImageView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>
</RelativeLayout>
```

java:

```
package com.example.ex_4;
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.widget.ImageView;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Bitmap bg=Bitmap.createBitmap(720,1280, Bitmap.Config.ARGB_8888);
        ImageView i = (ImageView) findViewById(R.id.ImageView);
        i.setBackgroundDrawable(new BitmapDrawable(bg));
        Canvas canvas=new Canvas(bg);
        Paint paint = new Paint();
        paint.setColor(Color.RED);
        paint.setTextSize(50);
        canvas.drawText("Rectangle",420,650,paint);
        canvas.drawRect(400,200,650,700,paint);
        canvas.drawText("Circle",120,150,paint);
        canvas.drawCircle(200,350,150,paint);
        canvas.drawText("Square",120,800,paint);
        canvas.drawRect(50,850,350,1150,paint);
        canvas.drawText("Line",480,800,paint);
        canvas.drawLine(520,850,520,1150,paint);
    }
}
```

ex_5

```
package com.example.ex_5;
import androidx.appcompat.app.AppCompatActivity;
import android.app.AlertDialog;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.view.View;
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    SQLiteDatabase db;
    Button b1, b2, b3, b4, b5;
    EditText e1, e2, e3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1 = (Button) findViewById(R.id.button);
        b2 = (Button) findViewById(R.id.button2);
        b3 = (Button) findViewById(R.id.button3);
        b4 = (Button) findViewById(R.id.button4);
        e1 = (EditText) findViewById(R.id.editTextText);
        e2 = (EditText) findViewById(R.id.editTextText2);
        e3 = (EditText) findViewById(R.id.editTextText3);
    }
        public void Insert(View view){
            db = openOrCreateDatabase("StudentDB", MODE_PRIVATE, null);
            db.execSQL("CREATE TABLE IF NOT EXISTS students(rollno VARCHAR, name
VARCHAR, dept VARCHAR)");
            if(e1.getText().toString().trim().length()==0||
e2.getText().toString().trim().length()==0||
e3.getText().toString().trim().length()==0){
                Toast.makeText(getApplicationContext(),"Error Please Enter
values",Toast.LENGTH_LONG).show();
            }
            else {
                db.execSQL("Insert into students
values('"+e1.getText().toString()+"','"+e2.getText().toString()
+"','"+e3.getText().toString()+"');");
                Toast.makeText(getApplicationContext(),"Values added
successfully",Toast.LENGTH_SHORT).show();
            }
```

```
        }
        public void Delete(View view){
            db = openOrCreateDatabase("StudentDB", MODE_PRIVATE, null);
            db.execSQL("CREATE TABLE IF NOT EXISTS students(rollno VARCHAR, name
VARCHAR, dept VARCHAR)");
            if(e1.getText().toString().trim().length()==0||
e2.getText().toString().trim().length()==0||
e3.getText().toString().trim().length()==0){
                Toast.makeText(getApplicationContext(),"Enter some
values",Toast.LENGTH_SHORT).show();
            }
            else{
                db.execSQL("Delete from students where
rollno='"+e1.getText().toString()+"'");
                Toast.makeText(getApplicationContext(),"Deleted
successfully",Toast.LENGTH_SHORT).show();
            }
        }
        public void Update(View view){
            db = openOrCreateDatabase("StudentDB", MODE_PRIVATE, null);
            db.execSQL("CREATE TABLE IF NOT EXISTS students(rollno VARCHAR, name
VARCHAR, dept VARCHAR)");
            if(e1.getText().toString().trim().length()==0||
e2.getText().toString().trim().length()==0||
e3.getText().toString().trim().length()==0){
                Toast.makeText(getApplicationContext(),"Enter some
values",Toast.LENGTH_SHORT).show();
            }
            else{
                db.execSQL("Update students set name='"+e2.getText().toString()
+"'where rollno ='"+e1.getText().toString()+"';");
                Toast.makeText(getApplicationContext(),"Updated
successfully",Toast.LENGTH_SHORT).show();
            }
        }
    public void View(View view){
        db = openOrCreateDatabase("StudentDB", MODE_PRIVATE, null);
        db.execSQL("CREATE TABLE IF NOT EXISTS students(rollno VARCHAR, name
VARCHAR, dept VARCHAR)");
        Cursor c=db.rawQuery("Select * from students",null);
        if(c.getCount()==0){
            showMessage("Error" ,"No records found");
            return;
        }
        StringBuffer buffer = new StringBuffer();
        while (c.moveToNext()){
            buffer.append("Roll no:"+c.getString(0)+"\n");
            buffer.append("Name: "+c.getString(1)+"\n");
            buffer.append("Dept: "+c.getString(2)+"\n");
        }
        showMessage("Students Details",buffer.toString());
    }
    public void One(View view){
        db = openOrCreateDatabase("StudentDB", MODE_PRIVATE, null);
        db.execSQL("CREATE TABLE IF NOT EXISTS students(rollno VARCHAR, name
VARCHAR, dept VARCHAR)");
        Cursor c=db.rawQuery("Select * from students where rollno =
'"+e1.getText().toString()+"';",null);
        if(c.getCount()==0){
            showMessage("Error" ,"No records found");
            return;
        }
        StringBuffer buffer = new StringBuffer();
        while (c.moveToNext()){
```

```
            buffer.append("Roll no:"+c.getString(0)+"\n");
            buffer.append("Name: "+c.getString(1)+"\n");
            buffer.append("Dept: "+c.getString(2)+"\n");
        }
        showMessage("Students Details",buffer.toString());
    }
        public void showMessage(String title, String message){
        AlertDialog.Builder builder = new AlertDialog.Builder(this);
        builder.setCancelable(true);
        builder.setTitle(title);
        builder.setMessage(message);
        builder.show();
    }
}
```

ex_6

xml:

```
<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" >
    <ListView
        android:id="@+id/listView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_centerVertical="true" >
    </ListView>
</RelativeLayout>
```

manifest:

```
<?xml version="1.0" encoding="UTF-8"?>
<manifest xmlns:tools="http://schemas.android.com/tools"
    android:versionName="1.0" android:versionCode="1"
    package="com.example.ex_6"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <uses-sdk android:targetSdkVersion="18" android:minSdkVersion="9"
        tools:ignore="GradleOverrides,OldTargetApi" />
    <uses-permission android:name="android.permission.RECORD_AUDIO"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:theme="@style/Theme.AppCompat"
        android:label="@string/app_name"
        android:icon="@drawable/ic_launcher_background"
        android:allowBackup="true">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN"/>
                <category android:name="android.intent.category.LAUNCHER"/>
            </intent-filter>
        </activity>
    </application>
</manifest>
```

java:

```
package com.example.ex_6;
import java.io.IOException;
import java.io.InputStream;
import java.net.MalformedURLException;
```

```
import java.net.URL;
import java.util.ArrayList;
import org.xmlpull.v1.XmlPullParser;
import org.xmlpull.v1.XmlPullParserException;
import org.xmlpull.v1.XmlPullParserFactory;
import android.net.Uri;
import android.os.AsyncTask;
import android.os.Bundle;
import android.app.Activity;
import android.app.ProgressDialog;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
public class MainActivity extends Activity {
    ListView L1;
    ArrayList<String> titles;
    ArrayList<String> links;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        L1 = (ListView)findViewById(R.id.listView1);
        titles = new ArrayList<String>();
        links =  new ArrayList<String>();
        L1.setOnItemClickListener(new AdapterView.OnItemClickListener(){
            @Override
            public void onItemClick(AdapterView<?> arg0, View arg1, int arg2,long
arg3) {
                // TODO Auto-generated method stub
                Uri uri = Uri.parse(links.get(arg2));
                Intent intent = new Intent(Intent.ACTION_VIEW, uri);
                startActivity(intent);
            }
        });
        new ProcessInBackground().execute();
    }
    public InputStream getInputStream(URL url) {
        try {
            return url.openConnection().getInputStream();
        } catch (IOException e) {
            return null;
        }
    }
    public class ProcessInBackground extends AsyncTask<Integer, Void, Exception>
{
        ProgressDialog progressDialog = new ProgressDialog(MainActivity.this);
        Exception exception = null;
        @Override
        protected void onPreExecute() {
            super.onPreExecute();
            progressDialog.setMessage("Loading RSS feed ...");
            progressDialog.show();
        }
        @Override
        protected Exception doInBackground(Integer... arg0) {
            // TODO Auto-generated method stub
            try {
                URL url = new URL("https://codingconnect.net/feed");
                XmlPullParserFactory factory =
XmlPullParserFactory.newInstance();
                factory.setNamespaceAware(false);
```

```
                XmlPullParser xpp = factory.newPullParser();
                xpp.setInput(getInputStream(url), "UTF_8");
                boolean insideItem = false;
                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"))
                        {
                            if (insideItem)
                            {
                                titles.add(xpp.nextText());
                            }
                        }
                        else if (xpp.getName().equalsIgnoreCase("link"))
                        {
                            if (insideItem)
                            {
                                links.add(xpp.nextText());
                            }
                        }
                    }
                    else if (eventType == XmlPullParser.END_TAG  &&
                            xpp.getName().equalsIgnoreCase("item"))
                    {
                        insideItem = false;
                    }
                    eventType = xpp.next();
                }
            }
            catch (MalformedURLException e) {
                exception = e;
            } catch (XmlPullParserException e) {
                exception = e;
            } catch (IOException e) {
                exception = e;
            }
            return exception;
        }
        @Override
        protected void onPostExecute(Exception s) {
            // TODO Auto-generated method stub
            super.onPostExecute(s);
            ArrayAdapter<String> adapter = new ArrayAdapter<String>(
                    MainActivity.this, android.R.layout.simple_list_item_1,
titles);
            L1.setAdapter(adapter);
            progressDialog.dismiss();
        }
    }
    @Override
    public View findViewById(int id) {
        // TODO Auto-generated method stub
        return super.findViewById(id);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        return true;
```

```
    }
}
```

ex_7

xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="144dp"
        android:text="Latitude :"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="64dp"
        android:text="Longitude :"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.193" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

manifest:

```
<?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_FINE_LOCATION"/>
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <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.Ex_7"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

java:

```
package com.example.ex_7;
import android.Manifest;
import android.annotation.SuppressLint;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
public class MainActivity extends AppCompatActivity {
    private static final int LOCATION_PERMISSION_REQUEST_CODE = 1;
    private TextView latitudeTextView;
    private TextView longitudeTextView;
    private LocationManager locationManager;
    private LocationListener locationListener;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
        latitudeTextView = findViewById(R.id.textView);
        longitudeTextView = findViewById(R.id.textView2);
        locationManager = (LocationManager) getSystemService(LOCATION_SERVICE);
        if (checkLocationPermission()) {
            requestLocationUpdates();
        }
    }
    private boolean checkLocationPermission() {
        if (ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION)
                != PackageManager.PERMISSION_GRANTED)
{ ActivityCompat.requestPermissions(this,
                new String[] {Manifest.permission.ACCESS_FINE_LOCATION},
                LOCATION_PERMISSION_REQUEST_CODE); return false;
        }
        return true;
    }
    private void requestLocationUpdates() {
        locationListener = new LocationListener() {
            @Override
            public void onLocationChanged(Location location) {
                double latitude = location.getLatitude();
                double longitude = location.getLongitude();
                latitudeTextView.setText("Latitude: " + latitude);
                longitudeTextView.setText("Longitude: " + longitude);
            } @Override
            public void onStatusChanged(String provider, int status,
                                        Bundle extras) {
            }
            @Override
            public void onProviderEnabled(String provider) {
            }
            @Override
            public void onProviderDisabled(String provider) {
            }
        };
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANTED &&
ActivityCompat.checkSelfPermission(this,
```

```
Manifest.permission.ACCESS_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED)
{
            return; }
        locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 0,
0, locationListener);
    }
    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull
    String[] permissions, @NonNull int[] grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions,
                grantResults);
        if (requestCode == LOCATION_PERMISSION_REQUEST_CODE) {
            if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
                requestLocationUpdates();
            }
        } }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        if (locationManager != null && locationListener != null) {
            locationManager.removeUpdates(locationListener);
        }
    } }
```

ex_8

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"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/tvText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="10dp"
        android:text=""
        android:textSize="18sp" />
    <ImageButton
        android:id="@+id/btnSpeak"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:contentDescription="@string/app_name"/>
</LinearLayout>
```

manifest:

```
<?xml version="1.0" encoding="UTF-8"?>
<manifest xmlns:tools="http://schemas.android.com/tools"
    android:versionName="1.0" android:versionCode="1"
    package="com.example.ex_8"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <uses-sdk android:targetSdkVersion="18" android:minSdkVersion="9"
        tools:ignore="GradleOverrides,OldTargetApi" />
    <uses-permission android:name="android.permission.RECORD_AUDIO"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:theme="@style/Theme.AppCompat"
        android:label="@string/app_name"
```

```
        android:icon="@drawable/ic_launcher_background"
        android:allowBackup="true">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN"/>
                <category android:name="android.intent.category.LAUNCHER"/>
            </intent-filter>
        </activity>
    </application>
</manifest>
```

java:

```
package com.example.ex_8;
import androidx.annotation.*;
import androidx.appcompat.app.AppCompatActivity;
import android.content.ActivityNotFoundException;
import android.content.Intent;
import android.os.Bundle;
import android.speech.RecognizerIntent;
import android.view.View;
import android.widget.ImageButton;
import android.widget.TextView;
import android.widget.Toast;
import java.util.ArrayList;
public class MainActivity extends AppCompatActivity {
    protected static final int RESULT_SPEECH = 1; private TextView tvText;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main); tvText =(TextView)
findViewById(R.id.tvText); ImageButton btnSpeak = (ImageButton)
                findViewById(R.id.btnSpeak);
        btnSpeak.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new
Intent(RecognizerIntent.ACTION_RECOGNIZE_SPEECH);
                intent.putExtra(RecognizerIntent.EXTRA_LANGUAGE_MODEL,
RecognizerIntent.LANGUAGE_MODEL_FREE_FORM);
                intent.putExtra(RecognizerIntent.EXTRA_LANGUAGE, "en-US");
                try {
                    startActivityForResult(intent, RESULT_SPEECH);
tvText.setText("");
                }
                catch (ActivityNotFoundException e) {
                    Toast.makeText(getApplicationContext(), "Your device does not
support Speech to Text",
                            Toast.LENGTH_SHORT).show();
                    e.printStackTrace();
                }
            } });
    }
    @Override
    protected void onActivityResult(int requestCode, int resultCode,
                                    @Nullable Intent data) {
        super.onActivityResult(requestCode, resultCode, data); if (requestCode ==
RESULT_SPEECH) {
            if (resultCode == RESULT_OK && data != null) { ArrayList<String> text
=
                    data.getStringArrayListExtra(RecognizerIntent.EXTRA_RESULTS);
assert text != null;
                tvText.setText(text.get(0));
```

```
            }
        } }
}
```

ex_9

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"
        android:textSize="30sp" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
        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>
```

manifest:

```
<?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.POST_NOTIFICATIONS"></uses-
permission>
    <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.Ex_9"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

java:

```
package com.example.ex_9;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    Button notify;
    EditText e;
    public static final String NOTIFICATION_CHANNEL_ID = "10001" ; private final
static String default_notification_channel_id =
            "default" ;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        createNotificationChannel(); super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main); notify= findViewById(R.id.button);
        e= findViewById(R.id.editText); notify.setOnClickListener(new
View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                Intent intent = new Intent(MainActivity.this,
                        MainActivity.class);
                intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK |
Intent.FLAG_ACTIVITY_CLEAR_TASK);
                PendingIntent pending =
PendingIntent.getActivity(MainActivity.this, 0, intent,
                        PendingIntent.FLAG_IMMUTABLE); NotificationCompat.Builder
builder = new
                    NotificationCompat.Builder(MainActivity.this,
"10001") .setSmallIcon(R.mipmap.ic_launcher) .setContentTitle("New
Message") .setContentText(e.getText().toString()) .setPriority(NotificationCompat
.PRIORITY_DEFAULT)
                    .setContentIntent(pending)
                    .setAutoCancel(true);
                builder.setContentIntent(pending);
                NotificationManager manager = (NotificationManager)
                        getSystemService(Context.NOTIFICATION_SERVICE);
manager.notify(0, builder.build());
            } });
    }
    private void createNotificationChannel() {
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) { CharSequence name =
"Notification";
            String description = "New Notification";
            int importance = NotificationManager.IMPORTANCE_DEFAULT;
NotificationChannel channel = new
                    NotificationChannel("10001", name, importance);
            channel.setDescription(description);
            NotificationManager notificationManager =
                    getSystemService(NotificationManager.class);
            notificationManager.createNotificationChannel(channel);
        }
    } }
```