**Practical 1**

AIM: Introduction to Android and Create “Custom Message” application. That will display “Custom Message” in the middle of the screen in the Black color with the Yellow background.

Source Code:

Java File/s:

MainActivity.java

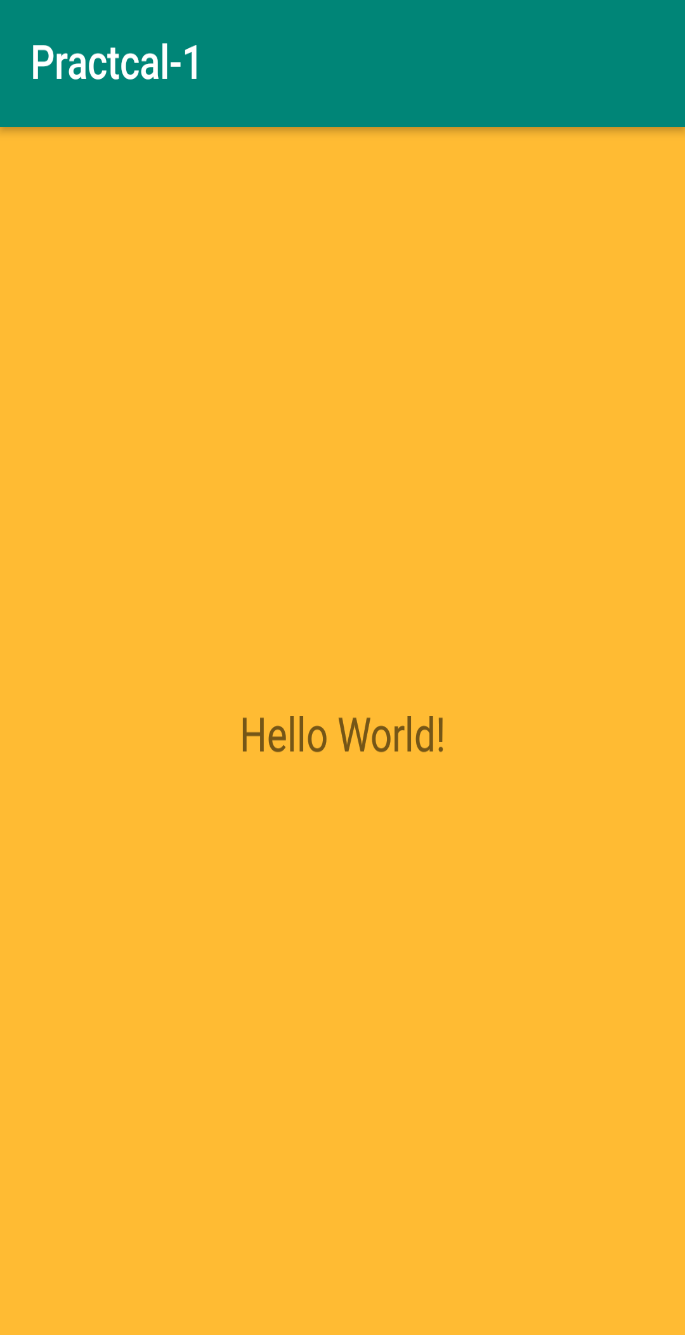
|  |
| --- |
| package com.example.myapplication5;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle;  public class MainActivity extends AppCompatActivity {   @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.activity\_main);  } } |

Layout File/s:

Activity\_main.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"  android:background="@android:color/holo\_orange\_light"  tools:context=".MainActivity">   <TextView  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="Hello World!"  android:textSize="20sp"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent" />  </androidx.constraintlayout.widget.ConstraintLayout> |

Output:



**Practical 2**

AIM: Create an android application to calculate the sum of two numbers and gives result in Toast Message.

Source Code:

Java File/s:

MainActivity.java

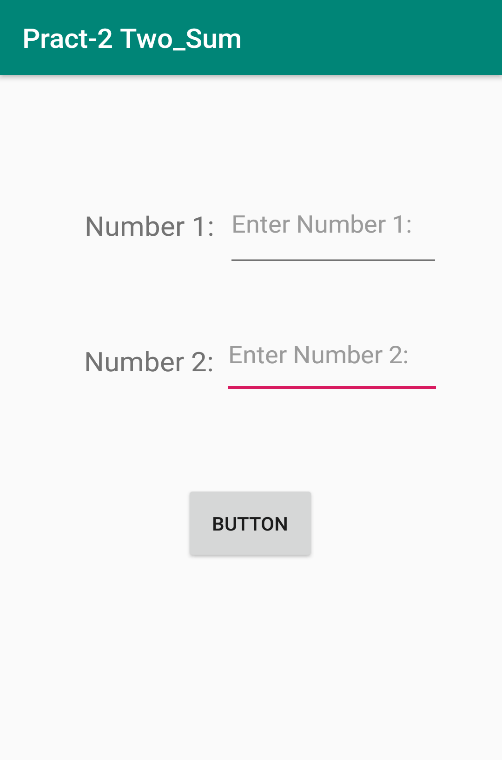
|  |
| --- |
| package com.example.pract\_2;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {   EditText number1;  EditText number2;  Button add\_button;  int ans = 0;   @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.activity\_main);  number1 = findViewById(R.id.editText\_first\_no);  number2 = findViewById(R.id.editText\_second\_no);  add\_button = findViewById(R.id.add\_button);  // used to create on click listener  if (!(number1.getText().toString().isEmpty() && number2.getText().toString().isEmpty())) {  add\_button.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View v) {  // num1 or num2 double type  // get data which is in edittext, convert it to string  // using parse Double convert it to Double type  double num1 = Double.parseDouble(number1.getText().toString());  double num2 = Double.parseDouble(number2.getText().toString());  // add both number and store it to sum  double sum = num1 + num2;  //Displaying Toast with Hello Javatpoint message  Toast.makeText(getApplicationContext(), "sum: " + sum, Toast.LENGTH\_SHORT).show();  }  });  }  } } |

Layout File/s:

Main\_activity.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\_1"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="Number 1:"  android:textSize="20sp"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.227"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.203" />   <EditText  android:id="@+id/editText\_first\_no"  android:layout\_width="154dp"  android:layout\_height="71dp"  android:hint="Enter Number 1:"  android:inputType="number"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.787"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.171" />   <TextView  android:id="@+id/textView\_2"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="Number 2:"  android:textSize="20sp"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.226"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.411" />   <EditText  android:id="@+id/editText\_second\_no"  android:layout\_width="157dp"  android:layout\_height="65dp"  android:hint="Enter Number 2:"  android:inputType="number"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.787"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.393" />   <Button  android:id="@+id/add\_button"  android:layout\_width="95dp"  android:layout\_height="59dp"  android:text="Button"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.498"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.672" /> </androidx.constraintlayout.widget.ConstraintLayout> |

Output:



**Practical 3**

AIM: Create an application that will display Toast (Message) on specific interval of time.

Source Code:

Java File/s:

MainActivity.java

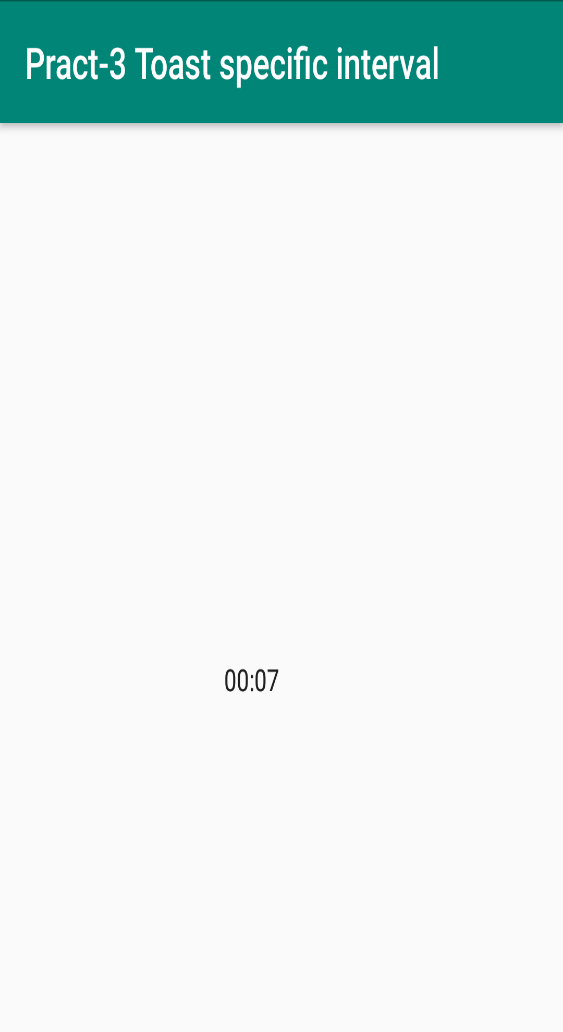
|  |
| --- |
| package com.example.pract\_3;  import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.widget.Chronometer; import android.widget.Toast; public class MainActivity extends AppCompatActivity {  Chronometer c;  int i = 0;  int duration = 10;  @Override  protected void onCreate (Bundle savedInstanceState){  super.onCreate(savedInstanceState);  setContentView(R.layout.activity\_main);  c = (Chronometer) findViewById(R.id.chronometer1);  c.start();  c.setOnChronometerTickListener(new Chronometer.OnChronometerTickListener() {  @Override  public void onChronometerTick(Chronometer arg0) {  i++;  if (i >= duration) {  Toast.makeText(getApplicationContext(), "Message" + (i / 10), Toast.LENGTH\_LONG).show();  duration = duration + 10;  }   }  });   } } |

Layout File/s:

Activity\_main.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">   <Chronometer  android:id="@+id/chronometer1"  android:layout\_width="122dp"  android:layout\_height="wrap\_content"  android:text="Chronometer"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.602"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  tools:ignore="MissingConstraints"></Chronometer>  </androidx.constraintlayout.widget.ConstraintLayout> |

Output:



**Practical 4**

AIM: Create a temperature converter Application. (Fahrenheit-Celsius).

Source Code:

Java File/s:

Main\_activity.java

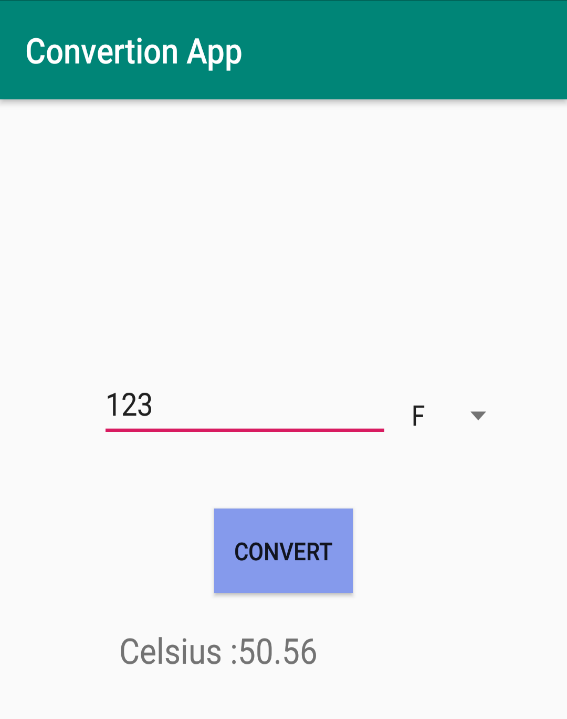
|  |
| --- |
| package com.example.pract\_4;  import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.AdapterView; import android.widget.ArrayAdapter; import android.widget.Spinner; import android.widget.TextView; import android.widget.Toast;  import androidx.appcompat.app.AppCompatActivity;   public class MainActivity extends AppCompatActivity implements AdapterView.OnItemSelectedListener {  EditText number1;  Button add\_button;  TextView textview;  String[] c ={"a"};  double num1,f;  String[] users = {"C","F"};  @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.activity\_main);  Spinner spin = (Spinner) findViewById(R.id.spinner1);  ArrayAdapter<String> adapter = new ArrayAdapter<String>(this, android.R.layout.simple\_spinner\_item, users);  adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);  spin.setAdapter(adapter);  spin.setOnItemSelectedListener(this);  number1 = findViewById(R.id.edit\_text);  add\_button = findViewById(R.id.button\_convert);  textview = findViewById(R.id.textView2);  // used to create on click listener  //if (!(number1.getText().toString().isEmpty())) {  add\_button.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View v) {  if(c[0].equals("F")){  num1 = Double.parseDouble(number1.getText().toString());  double f = (num1 - 32) \* 5 / 9;  textview.setText(String.format("Celsius :%.2f", f));  Toast.makeText(getApplicationContext(), "F: " + f, Toast.LENGTH\_SHORT).show();  }  else{  num1 = Double.parseDouble(number1.getText().toString());  double f = (num1 \* 9/5) + 32;  textview.setText(String.format("Fahrenheit :%.2f", f));  Toast.makeText(getApplicationContext(), "C: " + num1, Toast.LENGTH\_SHORT).show();  }  }  });  // }  }  @Override  public void onItemSelected(AdapterView<?> arg0, View arg1, int position,long id) {  c[0]=users[position];  }  @Override  public void onNothingSelected(AdapterView<?> arg0) {  // TODO - Custom Code  }   } |

Layout File/s:

Activity\_main.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">   <EditText  android:id="@+id/edit\_text"  android:layout\_width="185dp"  android:layout\_height="46dp"  android:layout\_marginEnd="112dp"  android:layout\_marginRight="112dp"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.264"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.321" />   <TextView  android:id="@+id/textView"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintHorizontal\_bias="0.414"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.131" />   <Spinner  android:id="@+id/spinner1"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:autofillHints="Select"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.887"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.342" />   <Button  android:id="@+id/button\_convert"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="Convert"  android:background="@color/button"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent" />   <TextView  android:id="@+id/textView2"  android:layout\_width="203dp"  android:layout\_height="67dp"  android:textSize="20sp"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.482"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.671" />  </androidx.constraintlayout.widget.ConstraintLayout> |

Output:



**Practical 5**

AIM: Create a login application with following features:

1. Successful Login message in TextView with Green background if Username & password is correct.

2. Failure message in TextView with Red background if Username or password is incorrect.

3. Disable Login Button after three wrong login attempts.

4. Close application if user selects Cancel Button.

Source Code:

Java File/s:

Main\_activity.java

|  |
| --- |
| package com.example.login;  import androidx.appcompat.app.AppCompatActivity;  import android.content.Intent; import android.graphics.Color; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.TextView; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {   EditText Username;  EditText Password;  int count=3;  Button button\_login;  TextView Register;  DatabaseHelper db;   @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.activity\_main);  db = new DatabaseHelper(this);  Username = (EditText)findViewById(R.id.Username);  Password = (EditText)findViewById(R.id.Password);  button\_login = (Button)findViewById(R.id.button\_login);  Register = (TextView)findViewById(R.id.Register);   Register.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View view) {  Intent register = new Intent(MainActivity.this,RegisterActivity.class);  startActivity(register);  }  });   button\_login.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View view) {  String user = Username.getText().toString()  .trim();  String pass = Password.getText().toString().trim();  TextView incorrect;  TextView attempts = (TextView)findViewById(R.id.textView2);  TextView lim = (TextView)findViewById(R.id.textView3);  Button logbtn;  Button closeapp = (Button)findViewById(R.id.closeapp);  Boolean res = db.checkUser(user,pass);  if(res==true){  Toast toast = Toast.makeText(MainActivity.this,"Successfully logged in :)",Toast.LENGTH\_SHORT);  view =toast.getView();  view.setBackgroundColor(Color.rgb(0,170,0));  TextView toastMessage = (TextView) toast.getView().findViewById(android.R.id.message);  toastMessage.setTextColor(Color.BLACK);  toast.show();  } else {  lim.setVisibility(View.VISIBLE);  attempts.setVisibility(View.VISIBLE);  lim.setBackgroundColor(Color.RED);  count--;  lim.setText(Integer.toString(count));  incorrect = (TextView)findViewById(R.id.incorrect);  incorrect.setVisibility(View.VISIBLE);  if(count==0){  logbtn = (Button)findViewById(R.id.button\_login);  logbtn.setText("Disabled");  logbtn.setEnabled(false);  }  closeapp.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View view) {  finish();  System.exit(0);  }  });  }  }  });    } } |

Database\_Helper.java

|  |
| --- |
| package com.example.login;  import android.content.ContentValues;  import android.content.Context;  import android.database.Cursor;  import android.database.sqlite.SQLiteDatabase;  import android.database.sqlite.SQLiteOpenHelper;  import androidx.annotation.Nullable;  public class DatabaseHelper extends SQLiteOpenHelper {  public static final String DATABASE\_NAME = "register.db";  public static final String TABLE\_NAME = "register\_user";  public static final String COL1\_NAME = "ID";  public static final String COL2\_NAME = "username";  public static final String COL3\_NAME = "password";  public DatabaseHelper(Context context) {  super(context, DATABASE\_NAME, null, 1);  }  @Override  public void onCreate(SQLiteDatabase sqLiteDatabase) {  sqLiteDatabase.execSQL("CREATE TABLE register\_user (ID INTEGER PRIMARY KEY AUTOINCREMENT,username TEXT,password TEXT)");  }  @Override  public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {  sqLiteDatabase.execSQL("drop table if exists " + TABLE\_NAME);  onCreate(sqLiteDatabase);  }  public long addUser(String user,String password){  SQLiteDatabase db = this.getWritableDatabase();  ContentValues contentValues = new ContentValues();  contentValues.put("username",user);  contentValues.put("password",password);  long res = db.insert("register\_user",null,contentValues);  db.close();  return res;  }  public boolean checkUser(String username,String password){  String[] columns = { COL1\_NAME };  SQLiteDatabase db = getReadableDatabase();  String selection = COL2\_NAME + "=?" + " and " + COL3\_NAME + "=?";  String[] selectionArgs = { username, password };  Cursor cursor = db.query(TABLE\_NAME,columns,selection,selectionArgs,null,null,null);  int count = cursor.getCount();  cursor.close();  db.close();  if(count>0){  return true;  } else {  return false;  }  }  } |

Register\_Activity.java

|  |
| --- |
| package com.example.login;  import androidx.appcompat.app.AppCompatActivity;  import android.content.Intent;  import android.os.Bundle;  import android.view.View;  import android.widget.Button;  import android.widget.EditText;  import android.widget.TextView;  import android.widget.Toast;  public class RegisterActivity extends AppCompatActivity {  DatabaseHelper db;  EditText Username;  EditText Password;  EditText Cnf\_Password;  Button Register;  TextView ViewLogin;  @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.activity\_register);  db = new DatabaseHelper(this);  Username = (EditText)findViewById(R.id.Username);  Password = (EditText)findViewById(R.id.Password);  Cnf\_Password = (EditText)findViewById(R.id.Cnf\_Password);  Register = (Button)findViewById(R.id.button\_register);  ViewLogin = (TextView)findViewById(R.id.Login);  ViewLogin.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View view) {  Intent login = new Intent(RegisterActivity.this,MainActivity.class);  startActivity(login);  }  });  Register.setOnClickListener(new View.OnClickListener() {  @Override  public void onClick(View view) {  String user = Username.getText().toString()  .trim();  String pass = Password.getText().toString().trim();  String cnf\_pass = Cnf\_Password.getText().toString().trim();  if(pass.equals(cnf\_pass)){  Long val = db.addUser(user,pass);  if(val>0){  Toast.makeText(RegisterActivity.this,"Registration successful",Toast.LENGTH\_SHORT).show();  Intent movToLogin = new Intent(RegisterActivity.this,MainActivity.class);  startActivity(movToLogin);  } else {  Toast.makeText(RegisterActivity.this,"Register error!!",Toast.LENGTH\_SHORT).show();  }  } else {  Toast.makeText(RegisterActivity.this,"Password is not matching",Toast.LENGTH\_SHORT).show();  }  }  });  }  } |

Layout File/s:

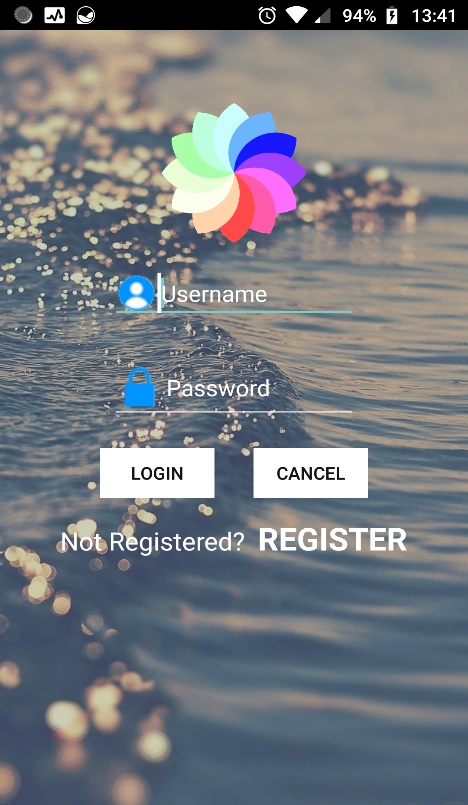
Activity\_register.xml

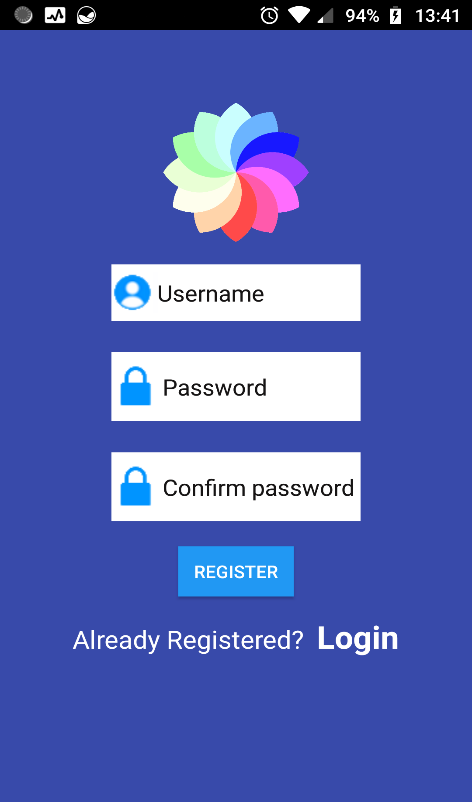
|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?>  <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  xmlns:app="http://schemas.android.com/apk/res-auto"  xmlns:tools="http://schemas.android.com/tools"  android:layout\_width="match\_parent"  android:background="#384AAA"  android:orientation="vertical"  android:gravity="center\_horizontal"  android:layout\_height="match\_parent"  tools:context=".RegisterActivity">  <ImageView  android:layout\_width="wrap\_content"  android:layout\_height="127dp"  android:src="@drawable/logo"  android:layout\_marginTop="50dp">  </ImageView>  <EditText  android:id="@+id/Username"  android:layout\_width="190dp"  android:layout\_height="45dp"  android:layout\_marginTop="10dp"  android:drawableLeft="@drawable/username"  android:textColorHint="#161414"  android:textColor="#171414"  android:background="#ffff"  android:hint="@string/username" />  <EditText  android:id="@+id/Password"  android:layout\_width="190dp"  android:layout\_height="55dp"  android:drawableLeft="@drawable/password"  android:textColorHint="#161414"  android:textColor="#171414"  android:background="#ffff"  android:layout\_marginTop="25dp"  android:hint="@string/password" />  <EditText  android:id="@+id/Cnf\_Password"  android:layout\_width="190dp"  android:layout\_height="55dp"  android:textColor="#171414"  android:drawableLeft="@drawable/password"  android:textColorHint="#161414"  android:background="#ffff"  android:layout\_marginTop="25dp"  android:hint="@string/conf\_password" />  <Button  android:id="@+id/button\_register"  android:layout\_width="wrap\_content"  android:layout\_height="40dp"  android:background="#2198F3"  android:layout\_marginTop="20dp"  android:text="@string/getRegistered"/>  <LinearLayout  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:layout\_marginTop="15dp"  android:orientation="horizontal">  <TextView  android:layout\_width="wrap\_content"  android:layout\_height="35dp"  android:textColor="#ffff"  android:textSize="20sp"  android:text="@string/already\_registered">  </TextView>  <TextView  android:id="@+id/Login"  android:layout\_width="wrap\_content"  android:textColor="#ffff"  android:layout\_height="35dp"  android:paddingLeft="10dp"  android:textSize="25sp"  android:textStyle="bold"  android:text="@string/thenlogin">  </TextView>  </LinearLayout>  </LinearLayout> |

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:gravity="center\_horizontal"  android:orientation="vertical"  tools:context=".MainActivity"  android:background="@drawable/img\_background">    <ImageView  android:layout\_width="wrap\_content"  android:layout\_height="127dp"  android:src="@drawable/logo"  android:layout\_marginTop="50dp">  </ImageView>    <EditText  android:id="@+id/Username"  android:layout\_width="190dp"  android:layout\_height="45dp"  android:layout\_marginTop="10dp"  android:drawableLeft="@drawable/username"  android:textColorHint="#ffff"  android:hint="@string/username" />  <EditText  android:id="@+id/Password"  android:layout\_width="190dp"  android:layout\_height="55dp"  android:drawableLeft="@drawable/password"  android:textColorHint="#ffff"  android:layout\_marginTop="25dp"  android:hint="@string/password" />  <TextView  android:id="@+id/incorrect"  android:layout\_width="200dp"  android:layout\_marginTop="20dp"  android:layout\_height="25dp"  android:textColor="#ffff"  android:layout\_marginBottom="15dp"  android:textAlignment="center"  android:background="#FF1818"  android:text="Incorrect credentials!"  android:visibility="gone" />  <LinearLayout  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:orientation="horizontal">  <TextView  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="Attempts Left:"  android:id="@+id/textView2"  android:visibility="gone"  android:layout\_alignParentLeft="true"  android:layout\_alignParentStart="true"  android:textSize="25dp" />  <TextView  android:layout\_width="50dp"  android:layout\_height="wrap\_content"  android:text="New Text"  android:textAlignment="center"  android:id="@+id/textView3"  android:visibility="gone"  android:textSize="25dp"  />  </LinearLayout>  <LinearLayout  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:orientation="horizontal">  <Button  android:id="@+id/button\_login"  android:layout\_width="wrap\_content"  android:layout\_height="40dp"  android:background="#ffff"  android:textColor="#171212"  android:layout\_marginTop="20dp"  android:text="@string/login"/>  <Button  android:layout\_width="wrap\_content"  android:layout\_height="40dp"  android:id="@+id/closeapp"  android:background="#ffff"  android:layout\_marginLeft="30dp"  android:textColor="#171212"  android:layout\_marginTop="20dp"  android:text="Cancel">  </Button>  </LinearLayout>  <LinearLayout  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:layout\_marginTop="15dp"  android:orientation="horizontal">  <TextView  android:layout\_width="wrap\_content"  android:layout\_height="35dp"  android:textColor="#ffff"  android:textSize="20sp"  android:text="@string/not\_registered">  </TextView>  <TextView  android:id="@+id/Register"  android:layout\_width="wrap\_content"  android:textColor="#ffff"  android:layout\_height="35dp"  android:paddingLeft="10dp"  android:textSize="25sp"  android:textStyle="bold"  android:text="@string/register">  </TextView>  </LinearLayout>  </LinearLayout> |

Output:





**Practical 6**

AIM: Create an application which turns ON or OFF Torch/Flashlight of Camera.

Source Code:

Java File/s:

Main\_activity.java

|  |
| --- |
| package com.example.practical6;  import androidx.annotation.RequiresApi; import androidx.appcompat.app.AlertDialog;  import androidx.appcompat.app.AppCompatActivity; import android.content.Context;  import android.content.DialogInterface; import android.content.pm.PackageManager;  import android.hardware.camera2.CameraAccessException; import android.hardware.camera2.CameraManager;  import android.os.Build; import android.os.Bundle;  import android.widget.CompoundButton; import android.widget.ToggleButton;  @RequiresApi(api = Build.VERSION\_CODES.LOLLIPOP)  public class MainActivity extends AppCompatActivity {  private CameraManager mCameraManager; private String mCameraId;  private ToggleButton toggleButton;  @RequiresApi(api = Build.VERSION\_CODES.LOLLIPOP) @Override  protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);  boolean isFlashAvailable = getApplicationContext().getPackageManager()  .hasSystemFeature(PackageManager.FEATURE\_CAMERA\_FLASH);  if (!isFlashAvailable) {  showNoFlashError();  }  mCameraManager = (CameraManager) getSystemService(Context.CAMERA\_SERVICE); try {  mCameraId = mCameraManager.getCameraIdList()[0];  } catch (CameraAccessException e) { e.printStackTrace();  }  toggleButton = findViewById(R.id.toggleButton); toggleButton.setOnCheckedChangeListener(new  CompoundButton.OnCheckedChangeListener() { @RequiresApi(api = Build.VERSION\_CODES.M) @Override  public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) { switchFlashLight(isChecked);  }  });  }  public void showNoFlashError() {  AlertDialog alert = new AlertDialog.Builder(this)  .create(); alert.setTitle("Oops!");  alert.setMessage("Flash not available in this device..."); alert.setButton(DialogInterface.BUTTON\_POSITIVE, "OK", new  DialogInterface.OnClickListener() {  public void onClick(DialogInterface dialog, int which) { finish();  }  });  alert.show();  } |

Layout File/s:

Activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?>  <androidx.constraintlayout.widget.ConstraintLayout  xmlns:android="http://schemas.android.com/apk/res/android"  xmlns:tools="http://schemas.android.com/tools"  xmlns:app="http://schemas.android.com/apk/res-auto"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent"  tools:context=".MainActivity">  <TextView  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintHorizontal\_bias="0.414"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.131" />  <Spinner  android:id="@+id/spinner1"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:autofillHints="Select"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.603"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:layout\_constraintVertical\_bias="0.236" />  </androidx.constraintlayout.widget.ConstraintLayout> |

Output:



**Practical 7**

AIM: Create an application that will change the color of the screen, based on selected

options from the menu.

Source Code:

Java File/s:

Main\_activity.java

|  |
| --- |
| package com.example.pract\_7;  import androidx.appcompat.app.AppCompatActivity; import androidx.core.content.ContextCompat;  import android.os.Bundle; import android.view.Menu; import android.view.MenuItem; import android.view.View; import android.widget.Toast;   public class MainActivity extends AppCompatActivity {   @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.*activity\_main*);  }   @Override  public boolean onCreateOptionsMenu(Menu menu) {  getMenuInflater().inflate(R.menu.*options\_menu*, menu);  return true;  }   @Override  public boolean onOptionsItemSelected(MenuItem item) {  Toast.*makeText*(this, "Selected Item: " + item.getTitle(), Toast.*LENGTH\_SHORT*).show();  switch (item.getItemId()) {  case R.id.*search\_item*:  View someView = findViewById(R.id.*main\_layout*);  View root = someView.getRootView();  root.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*orange*));  return true;  case R.id.*upload\_item*:  View someView1 = findViewById(R.id.*main\_layout*);  View root1 = someView1.getRootView();  root1.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*color1*));  return true;  case R.id.*copy\_item*:  View someView2 = findViewById(R.id.*main\_layout*);  View root2 = someView2.getRootView();  root2.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*color2*));  return true;  case R.id.*print\_item*:  View someView3 = findViewById(R.id.*main\_layout*);  View root3 = someView3.getRootView();  root3.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*color3*));  return true;  default:  return super.onOptionsItemSelected(item);  }  } } |

Layout File/s:

option\_menu.xml

|  |
| --- |
| *<?*xml version="1.0" encoding="utf-8"*?>* <menu xmlns:android="http://schemas.android.com/apk/res/android" >  <item android:id="@+id/search\_item"  android:title="Red" />  <item android:id="@+id/upload\_item"  android:title="Orange" />  <item android:id="@+id/copy\_item"  android:title="Blue" />  <item android:id="@+id/print\_item"  android:title="Green" /> </menu> |

Activity\_main.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:id="@+id/main\_layout"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent"  tools:context=".MainActivity">   <TextView  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="Hello World!"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent" />  </androidx.constraintlayout.widget.ConstraintLayout> |

Output:

### 

**Practical 8**

AIM: Create an application with the help of a fragment.

Source Code:

Java File/s:

main.xml

|  |
| --- |
| package com.example.pract\_8;  import androidx.appcompat.app.AppCompatActivity; import androidx.core.content.ContextCompat;  import android.os.Bundle; import android.view.Menu; import android.view.MenuItem; import android.view.View; import android.widget.Toast;   public class MainActivity extends AppCompatActivity {   @Override  protected void onCreate(Bundle savedInstanceState) {  super.onCreate(savedInstanceState);  setContentView(R.layout.*activity\_main*);  }   @Override  public boolean onCreateOptionsMenu(Menu menu) {  getMenuInflater().inflate(R.menu.*options\_menu*, menu);  return true;  }   @Override  public boolean onOptionsItemSelected(MenuItem item) {  Toast.*makeText*(this, "Selected Item: " + item.getTitle(), Toast.*LENGTH\_SHORT*).show();  switch (item.getItemId()) {  case R.id.*search\_item*:  View someView = findViewById(R.id.*main\_layout*);  View root = someView.getRootView();  root.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*orange*));  return true;  case R.id.*upload\_item*:  View someView1 = findViewById(R.id.*main\_layout*);  View root1 = someView1.getRootView();  root1.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*color1*));  return true;  case R.id.*copy\_item*:  View someView2 = findViewById(R.id.*main\_layout*);  View root2 = someView2.getRootView();  root2.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*color2*));  return true;  case R.id.*print\_item*:  View someView3 = findViewById(R.id.*main\_layout*);  View root3 = someView3.getRootView();  root3.setBackgroundColor(ContextCompat.*getColor*(this, R.color.*color3*));  return true;  default:  return super.onOptionsItemSelected(item);  }  } } |
|  |

Layout File/s:

Activity\_main.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"  android:id="@+id/container"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent"  android:paddingTop="?attr/actionBarSize">   <com.google.android.material.bottomnavigation.BottomNavigationView  android:id="@+id/nav\_view"  android:layout\_width="0dp"  android:layout\_height="wrap\_content"  android:layout\_marginStart="0dp"  android:layout\_marginEnd="0dp"  android:background="?android:attr/windowBackground"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:menu="@menu/bottom\_nav\_menu" />   <fragment  android:id="@+id/nav\_host\_fragment"  android:name="androidx.navigation.fragment.NavHostFragment"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent"  app:defaultNavHost="true"  app:layout\_constraintBottom\_toTopOf="@id/nav\_view"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent"  app:navGraph="@navigation/mobile\_navigation" />  </androidx.constraintlayout.widget.ConstraintLayout> |

Home\_menu.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"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent">   <TextView  android:id="@+id/text\_home"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:layout\_marginEnd="8dp"  android:textAlignment="center"  android:textSize="20sp"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

Dashboard\_menu.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"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent">   <TextView  android:id="@+id/text\_dashboard"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:layout\_marginEnd="8dp"  android:textAlignment="center"  android:textSize="20sp"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

notify\_menu.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"  android:layout\_width="match\_parent"  android:layout\_height="match\_parent">   <TextView  android:id="@+id/text\_notifications"  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:layout\_marginEnd="8dp"  android:textAlignment="center"  android:textSize="20sp"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

Output:

**PRACTICAL 9**

AIM - Create an application with the help of web view.

Activity\_main.xml

*<?***xml version="1.0" encoding="utf-8"***?>*<**RelativeLayout 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="com.example.administrator.prac9\_webview.MainActivity"**>  
  
 <**TextView android:text="WebView" android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/textview"  
 android:textSize="35dp"  
 android:layout\_alignParentTop="true"  
 android:layout\_centerHorizontal="true"** />  
  
 <**TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="35dp"  
 android:text="charusat website"  
 android:textColor="#ff7aff24"  
 android:textSize="35dp"** />  
  
 <**EditText  
 android:id="@+id/editText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_below="@+id/textView"  
 android:layout\_marginTop="11dp"  
 android:focusable="true"  
 android:hint="Enter Text"  
 android:textColorHighlight="#ff7eff15"  
 android:textColorHint="#ffff25e6"** />  
  
 <**ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
  
 android:layout\_alignEnd="@+id/textView"  
 android:layout\_below="@+id/button"  
 android:src="@drawable/abc"** />  
  
 <**Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editText"  
 android:layout\_centerHorizontal="true"  
 android:text="Enter"** />  
  
 <**WebView  
 android:id="@+id/webView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignStart="@+id/textview"  
 android:layout\_marginBottom="0dp"  
 android:layout\_marginLeft="0dp"  
 android:layout\_marginRight="100dp"  
 android:layout\_marginTop="404dp"  
 android:visibility="visible"** />  
  
  
</**RelativeLayout**>

Mainactivity.java

**package** com.example.administrator.prac9\_webview;  
  
**import** android.support.v7.app.AppCompatActivity;  
**import** android.os.Bundle;  
  
**import** android.view.View;  
**import** android.webkit.WebView;  
**import** android.webkit.WebViewClient;  
**import** android.widget.Button;  
**import** android.widget.EditText;  
  
**public class** MainActivity **extends** AppCompatActivity  
{  
 Button **b1**;  
 EditText **ed1**;  
 **private** WebView **wv1**;  
  
 **protected void** onCreate(Bundle savedInstanceState)  
 {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 **b1**=(Button)findViewById(R.id.***button***);  
 **ed1**=(EditText)findViewById(R.id.***editText***);  
  
 **wv1**=(WebView)findViewById(R.id.***webView***);  
 **wv1**.setWebViewClient(**new** MyBrowser());  
  
 **b1**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 String url = **ed1**.getText().toString();  
  
 **wv1**.getSettings().setLoadsImagesAutomatically(**true**);  
 **wv1**.getSettings().setJavaScriptEnabled(**true**);  
 **wv1**.setScrollBarStyle(View.***SCROLLBARS\_INSIDE\_OVERLAY***);  
 **wv1**.loadUrl(url);  
 }  
 });  
 }  
  
  
 **private class** MyBrowser **extends** WebViewClient {  
 @Override  
 **public boolean** shouldOverrideUrlLoading(WebView view, String url) {  
 view.loadUrl(url);  
 **return true**;  
 }  
 }  
}

Output



**PRACTICAL 10**

**AIM:**

Create an application with the help of the database.

**CODE:**

**activity\_main.xml:**

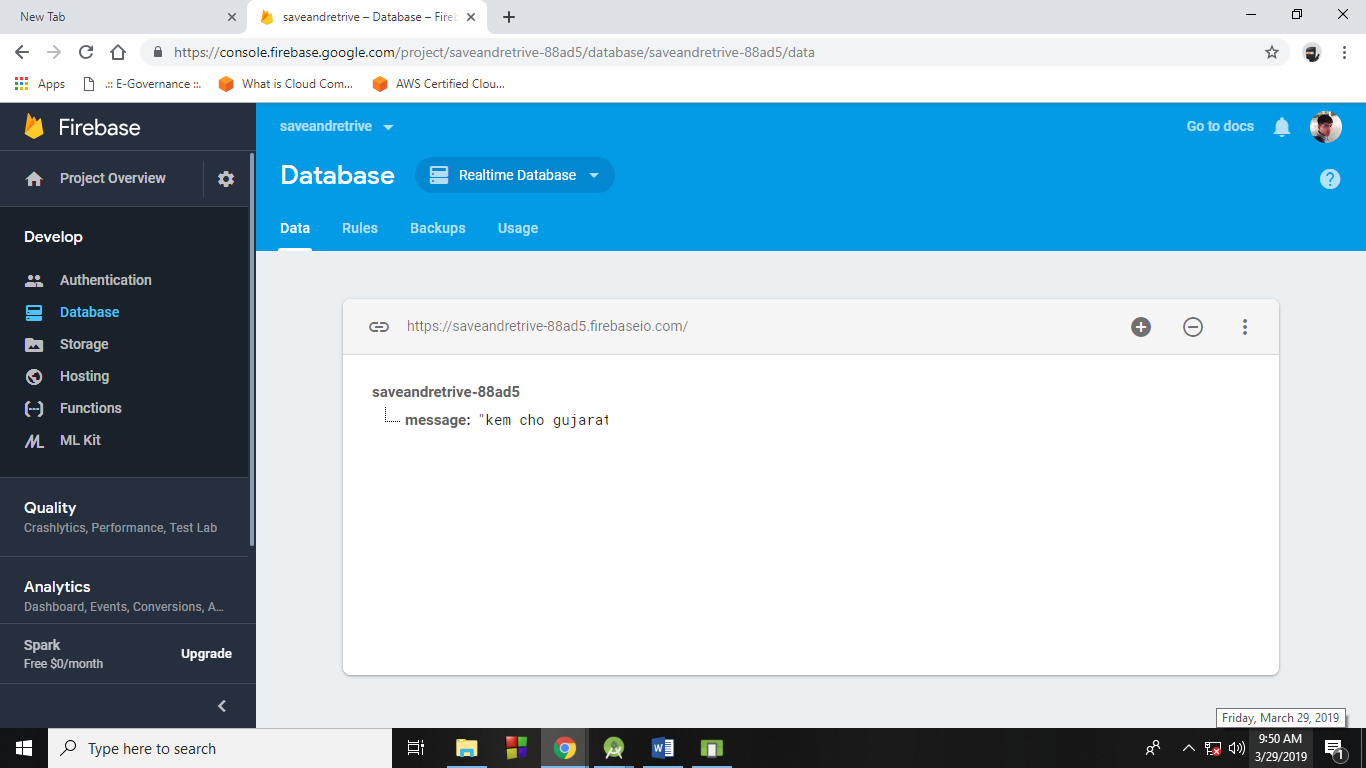
*<?*xml version="1.0" encoding="utf-8"*?>*<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context="com.example.admin1.saveandretrive.MainActivity">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="kem cho gujarat"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintLeft\_toLeftOf="parent"  
 app:layout\_constraintRight\_toRightOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
</android.support.constraint.ConstraintLayout>

**MainActivity.java:**

package com.example.admin1.saveandretrive;  
  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import com.google.firebase.database.DatabaseReference;  
import com.google.firebase.database.FirebaseDatabase;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 FirebaseDatabase database = FirebaseDatabase.*getInstance*();  
 DatabaseReference myRef = database.getReference("message");  
  
 myRef.setValue("kem cho gujarat");  
 }  
}

**OUTPUT:**





**PRACTICAL 11**

**AIM:**Creating an application that provides Single Sign-on (SSO) with Chrome CustomTabs via theAppAuth library, and optionally push managed configuration toprovide a user loginhint.<https://codelabs.developers.google.com/codelabs/signin/index.html?index=..%2F..index#0>

Activity\_main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<android.support.constraint.ConstraintLayoutxmlns: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="com.example.app\_1.signin\_1.MainActivity">  
  
<LinearLayout  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:orientation="vertical"  
android:padding="2dip">  
<com.google.android.gms.common.SignInButton  
android:id="@+id/sign\_in\_button"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:enabled="false" />  
  
<Button  
android:id="@+id/sign\_out\_button"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Sign Out"  
android:enabled="true" />  
  
<Button  
android:id="@+id/revoke\_access\_button"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Revoke Access"  
android:enabled="true" />  
  
<TextView  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:id="@+id/statuslabel"  
android:text="Status"/>  
</LinearLayout>  
  
</android.support.constraint.ConstraintLayout>

mainactivity.java

package com.google.codelabs.appauth;

import android.app.PendingIntent;

import android.app.admin.DevicePolicyManager;

import android.content.BroadcastReceiver;

import android.content.Context;

import android.content.Intent;

import android.content.IntentFilter;

import android.content.RestrictionsManager;

import android.net.Uri;

import android.os.AsyncTask;

import android.os.Bundle;

import android.os.PersistableBundle;

import android.os.UserManager;

import android.support.annotation.NonNull;

import android.support.annotation.Nullable;

import android.support.design.widget.Snackbar;

import android.support.v7.app.AppCompatActivity;

import android.support.v7.widget.AppCompatButton;

import android.support.v7.widget.AppCompatTextView;

import android.text.TextUtils;

import android.util.Log;

import android.view.View;

import android.widget.Button;

import android.widget.ImageView;

import android.widget.Toast;

import com.squareup.picasso.Picasso;

import net.openid.appauth.AuthState;

import net.openid.appauth.AuthorizationException;

import net.openid.appauth.AuthorizationRequest;

import net.openid.appauth.AuthorizationResponse;

import net.openid.appauth.AuthorizationService;

import net.openid.appauth.AuthorizationServiceConfiguration;

import net.openid.appauth.TokenResponse;

import org.json.JSONException;

import org.json.JSONObject;

import java.util.HashMap;

import java.util.Map;

import okhttp3.OkHttpClient;

import okhttp3.Request;

import okhttp3.Response;

import static com.google.codelabs.appauth.MainApplication.LOG\_TAG;

public class MainActivity extends AppCompatActivity {

private static final String SHARED\_PREFERENCES\_NAME = "AuthStatePreference";

private static final String AUTH\_STATE = "AUTH\_STATE";

private static final String USED\_INTENT = "USED\_INTENT";

private static final String LOGIN\_HINT = "login\_hint";

MainApplication mMainApplication;

// state

AuthState mAuthState;

// views

AppCompatButton mAuthorize;

AppCompatButton mMakeApiCall;

AppCompatButton mSignOut;

AppCompatTextView mGivenName;

AppCompatTextView mFamilyName;

AppCompatTextView mFullName;

ImageView mProfileView;

// login hint

protected String mLoginHint;

// broadcast receiver for app restrictions changed broadcast

BroadcastReceiver mRestrictionsReceiver;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

mMainApplication = (MainApplication) getApplication();

mAuthorize = (AppCompatButton) findViewById(R.id.authorize);

mMakeApiCall = (AppCompatButton) findViewById(R.id.makeApiCall);

mSignOut = (AppCompatButton) findViewById(R.id.signOut);

mGivenName = (AppCompatTextView) findViewById(R.id.givenName);

mFamilyName = (AppCompatTextView) findViewById(R.id.familyName);

mFullName = (AppCompatTextView) findViewById(R.id.fullName);

mProfileView = (ImageView) findViewById(R.id.profileImage);

enablePostAuthorizationFlows();

// wire click listeners

mAuthorize.setOnClickListener(new AuthorizeListener(this));

// Retrieve app restrictions and take appropriate action

getAppRestrictions();

}

@Override

protected void onResume(){

super.onResume();

// Retrieve app restrictions and take appropriate action

getAppRestrictions();

// Register a receiver for app restrictions changed broadcast

registerRestrictionsReceiver();

}

@Override

protected void onStop(){

super.onStop();

// Unregister receiver for app restrictions changed broadcast

unregisterReceiver(mRestrictionsReceiver);

}

@Override

protected void onNewIntent(Intent intent) {

checkIntent(intent);

}

private void checkIntent(@Nullable Intent intent) {

if (intent != null) {

String action = intent.getAction();

switch (action) {

case "com.google.codelabs.appauth.HANDLE\_AUTHORIZATION\_RESPONSE":

if (!intent.hasExtra(USED\_INTENT)) {

handleAuthorizationResponse(intent);

intent.putExtra(USED\_INTENT, true);

}

break;

default:

// do nothing

}

}

}

@Override

protected void onStart() {

super.onStart();

checkIntent(getIntent());

// Register a receiver for app restrictions changed broadcast

registerRestrictionsReceiver();

}

private void enablePostAuthorizationFlows() {

mAuthState = restoreAuthState();

if (mAuthState != null && mAuthState.isAuthorized()) {

if (mMakeApiCall.getVisibility() == View.GONE) {

mMakeApiCall.setVisibility(View.VISIBLE);

mMakeApiCall.setOnClickListener(new MakeApiCallListener(this, mAuthState, new AuthorizationService(this)));

}

if (mSignOut.getVisibility() == View.GONE) {

mSignOut.setVisibility(View.VISIBLE);

mSignOut.setOnClickListener(new SignOutListener(this));

}

} else {

mMakeApiCall.setVisibility(View.GONE);

mSignOut.setVisibility(View.GONE);

}

}

/\*\*

\* Exchanges the code, for the {@link TokenResponse}.

\*

\* @param intent represents the {@link Intent} from the Custom Tabs or the System Browser.

\*/

private void handleAuthorizationResponse(@NonNull Intent intent) {

AuthorizationResponse response = AuthorizationResponse.fromIntent(intent);

AuthorizationException error = AuthorizationException.fromIntent(intent);

final AuthState authState = new AuthState(response, error);

if (response != null) {

Log.i(LOG\_TAG, String.format("Handled Authorization Response %s ", authState.toJsonString()));

AuthorizationService service = new AuthorizationService(this);

service.performTokenRequest(response.createTokenExchangeRequest(), new AuthorizationService.TokenResponseCallback() {

@Override

public void onTokenRequestCompleted(@Nullable TokenResponse tokenResponse, @Nullable AuthorizationException exception) {

if (exception != null) {

Log.w(LOG\_TAG, "Token Exchange failed", exception);

} else {

if (tokenResponse != null) {

authState.update(tokenResponse, exception);

persistAuthState(authState);

Log.i(LOG\_TAG, String.format("Token Response [ Access Token: %s, ID Token: %s ]", tokenResponse.accessToken, tokenResponse.idToken));

}

}

}

});

}

}

private void persistAuthState(@NonNull AuthState authState) {

getSharedPreferences(SHARED\_PREFERENCES\_NAME, Context.MODE\_PRIVATE).edit()

.putString(AUTH\_STATE, authState.toJsonString())

.commit();

enablePostAuthorizationFlows();

}

private void clearAuthState() {

getSharedPreferences(SHARED\_PREFERENCES\_NAME, Context.MODE\_PRIVATE)

.edit()

.remove(AUTH\_STATE)

.apply();

}

@Nullable

private AuthState restoreAuthState() {

String jsonString = getSharedPreferences(SHARED\_PREFERENCES\_NAME, Context.MODE\_PRIVATE)

.getString(AUTH\_STATE, null);

if (!TextUtils.isEmpty(jsonString)) {

try {

return AuthState.fromJson(jsonString);

} catch (JSONException jsonException) {

// should never happen

}

}

return null;

}

/\*\*

\* Kicks off the authorization flow.

\*/

public static class AuthorizeListener implements Button.OnClickListener {

private final MainActivity mMainActivity;

public AuthorizeListener(@NonNull MainActivity mainActivity) {

mMainActivity = mainActivity;

}

@Override

public void onClick(View view) {

AuthorizationServiceConfiguration serviceConfiguration = new AuthorizationServiceConfiguration(

Uri.parse("https://accounts.google.com/o/oauth2/v2/auth") /\* auth endpoint \*/,

Uri.parse("https://www.googleapis.com/oauth2/v4/token") /\* token endpoint \*/

);

AuthorizationService authorizationService = new AuthorizationService(view.getContext());

String clientId = "511828570984-fuprh0cm7665emlne3rnf9pk34kkn86s.apps.googleusercontent.com";

Uri redirectUri = Uri.parse("com.google.codelabs.appauth:/oauth2callback");

AuthorizationRequest.Builder builder = new AuthorizationRequest.Builder(

serviceConfiguration,

clientId,

AuthorizationRequest.RESPONSE\_TYPE\_CODE,

redirectUri

);

builder.setScopes("profile");

if(mMainActivity.getLoginHint() != null){

Map loginHintMap = new HashMap<String, String>();

loginHintMap.put(LOGIN\_HINT,mMainActivity.getLoginHint());

builder.setAdditionalParameters(loginHintMap);

Log.i(LOG\_TAG, String.format("login\_hint: %s", mMainActivity.getLoginHint()));

}

AuthorizationRequest request = builder.build();

String action = "com.google.codelabs.appauth.HANDLE\_AUTHORIZATION\_RESPONSE";

Intent postAuthorizationIntent = new Intent(action);

PendingIntent pendingIntent = PendingIntent.getActivity(view.getContext(), request.hashCode(), postAuthorizationIntent, 0);

authorizationService.performAuthorizationRequest(request, pendingIntent);

}

}

public static class SignOutListener implements Button.OnClickListener {

private final MainActivity mMainActivity;

public SignOutListener(@NonNull MainActivity mainActivity) {

mMainActivity = mainActivity;

}

@Override

public void onClick(View view) {

mMainActivity.mAuthState = null;

mMainActivity.clearAuthState();

mMainActivity.enablePostAuthorizationFlows();

}

}

public static class MakeApiCallListener implements Button.OnClickListener {

private final MainActivity mMainActivity;

private AuthState mAuthState;

private AuthorizationService mAuthorizationService;

public MakeApiCallListener(@NonNull MainActivity mainActivity, @NonNull AuthState authState, @NonNull AuthorizationService authorizationService) {

mMainActivity = mainActivity;

mAuthState = authState;

mAuthorizationService = authorizationService;

}

@Override

public void onClick(View view) {

mAuthState.performActionWithFreshTokens(mAuthorizationService, new AuthState.AuthStateAction() {

@Override

public void execute(@Nullable String accessToken, @Nullable String idToken, @Nullable AuthorizationException exception) {

new AsyncTask<String, Void, JSONObject>() {

@Override

protected JSONObject doInBackground(String... tokens) {

OkHttpClient client = new OkHttpClient();

Request request = new Request.Builder()

.url("https://www.googleapis.com/oauth2/v3/userinfo")

.addHeader("Authorization", String.format("Bearer %s", tokens[0]))

.build();

try {

Response response = client.newCall(request).execute();

String jsonBody = response.body().string();

Log.i(LOG\_TAG, String.format("User Info Response %s", jsonBody));

return new JSONObject(jsonBody);

} catch (Exception exception) {

Log.w(LOG\_TAG, exception);

}

return null;

}

@Override

protected void onPostExecute(JSONObject userInfo) {

if (userInfo != null) {

String fullName = userInfo.optString("name", null);

String givenName = userInfo.optString("given\_name", null);

String familyName = userInfo.optString("family\_name", null);

String imageUrl = userInfo.optString("picture", null);

if (!TextUtils.isEmpty(imageUrl)) {

Picasso.with(mMainActivity)

.load(imageUrl)

.placeholder(R.drawable.ic\_account\_circle\_black\_48dp)

.into(mMainActivity.mProfileView);

}

if (!TextUtils.isEmpty(fullName)) {

mMainActivity.mFullName.setText(fullName);

}

if (!TextUtils.isEmpty(givenName)) {

mMainActivity.mGivenName.setText(givenName);

}

if (!TextUtils.isEmpty(familyName)) {

mMainActivity.mFamilyName.setText(familyName);

}

String message;

if (userInfo.has("error")) {

message = String.format("%s [%s]", mMainActivity.getString(R.string.request\_failed), userInfo.optString("error\_description", "No description"));

} else {

message = mMainActivity.getString(R.string.request\_complete);

}

Snackbar.make(mMainActivity.mProfileView, message, Snackbar.LENGTH\_SHORT)

.show();

}

}

}.execute(accessToken);

}

});

}

}

private void getAppRestrictions(){

RestrictionsManager restrictionsManager =

(RestrictionsManager) this

.getSystemService(Context.RESTRICTIONS\_SERVICE);

Bundle appRestrictions = restrictionsManager.getApplicationRestrictions();

// Block user if KEY\_RESTRICTIONS\_PENDING is true, and save login hint if available

if(!appRestrictions.isEmpty()){

if(appRestrictions.getBoolean(UserManager.

KEY\_RESTRICTIONS\_PENDING)!=true){

mLoginHint = appRestrictions.getString(LOGIN\_HINT);

}

else {

Toast.makeText(this,R.string.restrictions\_pending\_block\_user,

Toast.LENGTH\_LONG).show();

finish();

}

}

}

private void registerRestrictionsReceiver(){

IntentFilter restrictionsFilter =

new IntentFilter(Intent.ACTION\_APPLICATION\_RESTRICTIONS\_CHANGED);

mRestrictionsReceiver = new BroadcastReceiver() {

@Override

public void onReceive(Context context, Intent intent) {

getAppRestrictions();

}

};

registerReceiver(mRestrictionsReceiver, restrictionsFilter);

}

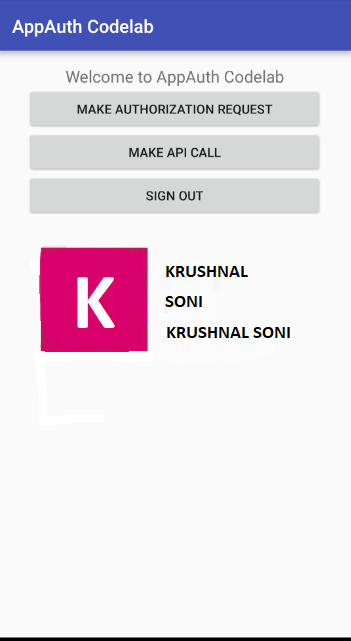
public String getLoginHint(){

return mLoginHint;

}

}

**OUTPUT:**



**PRACTICAL 12**

**AIM:Create an application to handle support voice interaction.**

**Source Code:**

**Program: activity\_main.xml**

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?>  <android.support.constraint.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="com.example.prac12.MainActivity">  <TextView  android:id="@+id/textView"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:layout\_marginTop="168dp"  android:text="Wait till Question PopUP!!"  android:textSize="24sp"  app:layout\_constraintHorizontal\_bias="0.501"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toTopOf="parent" />  <TextView  android:id="@+id/textView1"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:layout\_marginBottom="8dp"  android:layout\_marginEnd="8dp"  android:layout\_marginStart="8dp"  android:layout\_marginTop="8dp"  android:text="Speak your answer"  android:textSize="24sp"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintEnd\_toEndOf="parent"  app:layout\_constraintHorizontal\_bias="0.501"  app:layout\_constraintStart\_toStartOf="parent"  app:layout\_constraintTop\_toBottomOf="@+id/textView"  app:layout\_constraintVertical\_bias="0.171" />  </android.support.constraint.ConstraintLayout> |

**Program: MainActivity.java**

package com.example.prac12;

import android.content.Intent;

import android.speech.RecognizerIntent;

import android.speech.tts.TextToSpeech;

import android.support.v7.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.TextView;

import java.util.List;

import java.util.Locale;

public class MainActivity extends AppCompatActivity {

private TextToSpeech t1;

private final int REQUEST\_SPEECH\_RECOGNIZER = 3000;

private TextView question, answer;

private final String mQuestion = "Who is the owner of this phone?";

private String mAnswer = "";

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

question = (TextView) findViewById(R.id.textView);

answer = (TextView) findViewById(R.id.textView1);

t1=new TextToSpeech(getApplicationContext(), new TextToSpeech.OnInitListener() {

@Override

public void onInit(int status) {

if(status != TextToSpeech.ERROR) {

t1.setLanguage(Locale.UK);

}

}

});

startSpeechRecognizer();

}

private void startSpeechRecognizer() {

Intent intent = new Intent

(RecognizerIntent.ACTION\_RECOGNIZE\_SPEECH);

intent.putExtra(RecognizerIntent.EXTRA\_LANGUAGE\_MODEL,

RecognizerIntent.LANGUAGE\_MODEL\_FREE\_FORM);

intent.putExtra(RecognizerIntent.EXTRA\_PROMPT, mQuestion);

startActivityForResult(intent, REQUEST\_SPEECH\_RECOGNIZER);

}

@Override

protected void onActivityResult(int requestCode, int resultCode,

Intent data) {

super.onActivityResult(requestCode, resultCode, data);

if (requestCode == REQUEST\_SPEECH\_RECOGNIZER) {

if (resultCode == RESULT\_OK) {

List<String> results = data.getStringArrayListExtra

(RecognizerIntent.EXTRA\_RESULTS);

mAnswer = results.get(0);

question.setText(mQuestion);

answer.setText(mAnswer);

if (mAnswer.toUpperCase().indexOf("SMIT") > -1) {

t1.speak("Great You are correct", TextToSpeech.QUEUE\_FLUSH, null, "adfvsfgbrsgh");

}

else {

t1.speak("Wrong answer submit this phone to my owner Smit", TextToSpeech.QUEUE\_FLUSH, null, "adfvsfgbrsgh");

}

}

}

}

@Override

public void onPause(){

if(t1 !=null){

t1.stop();

t1.shutdown();

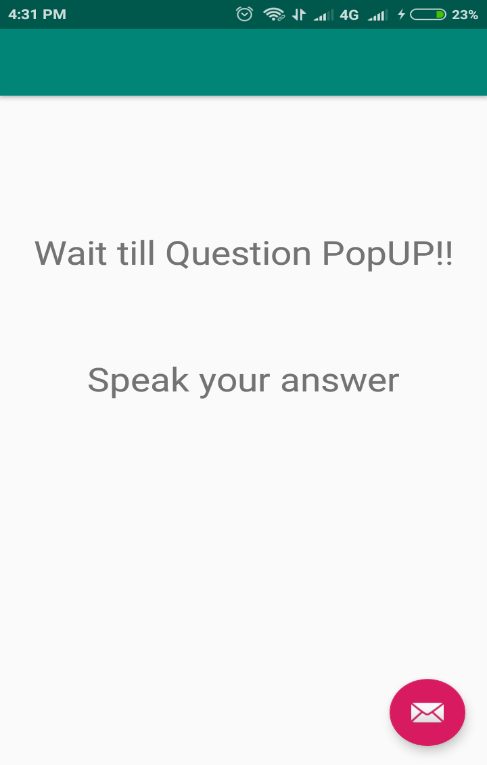
}

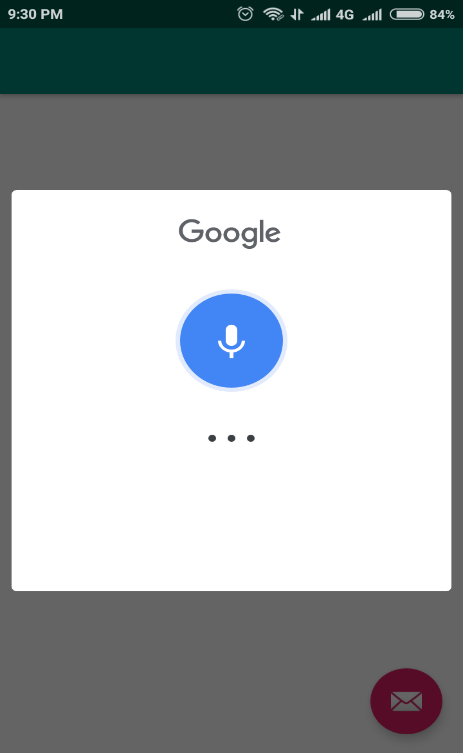
super.onPause();

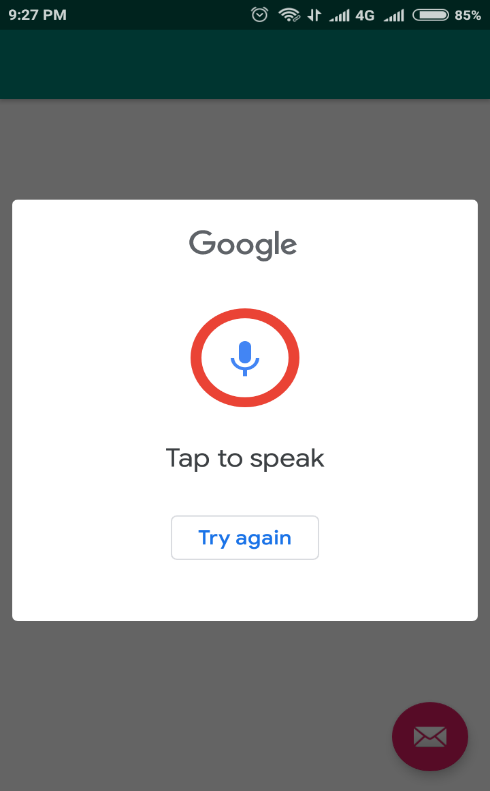
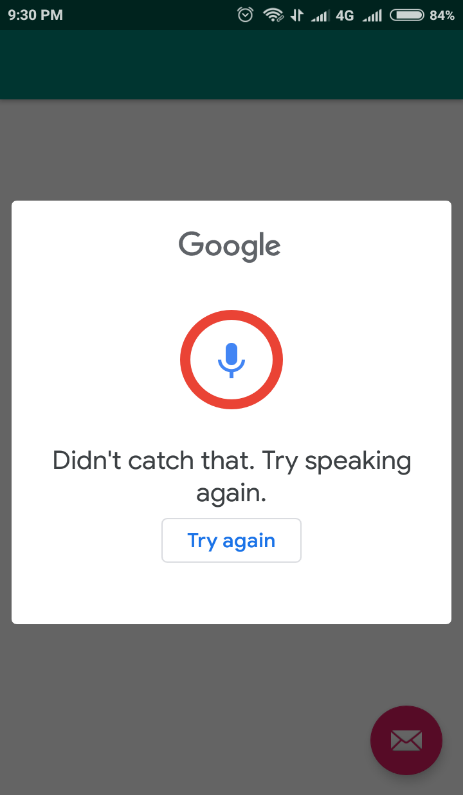
}

}

**Output:**

****

****

** **

**PRACTICAL 13**

**AIM:Create an application to play video using the YouTube API in PIP mode.**

**Source Code:**

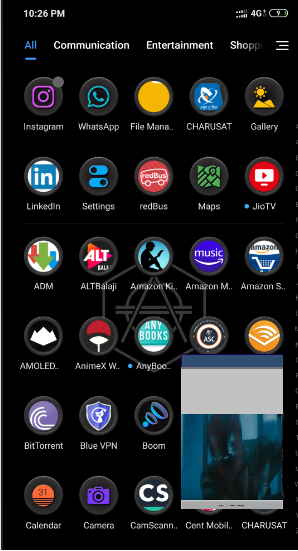
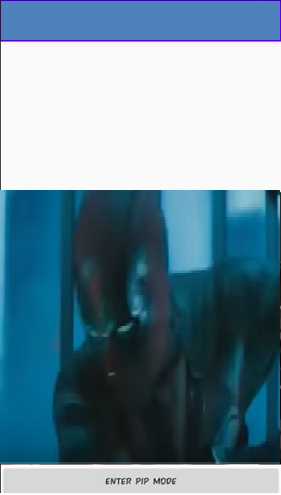
**Program: activity\_main.xml**

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?>  <RelativeLayout  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"> <VideoView  android:layout\_width="match\_parent"  android:layout\_height="match\_parent"  android:id="@+id/video"  android:layout\_above="@id/pipbtn"/> <Button  android:layout\_width="match\_parent"  android:layout\_height="wrap\_content"  android:text="Enter PIP mode"  android:layout\_alignParentBottom="true"  android:id="@+id/pipbtn"/> </RelativeLayout> |

**Program: MainActivity.java**

package com.example.practical13;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.app.ActionBar;  
import android.app.Notification;  
import android.app.PictureInPictureParams;  
import android.drm.DrmStore;  
import android.graphics.Point;  
import android.net.Uri;  
import android.os.Bundle;  
import android.util.Rational;  
import android.view.Display;  
import android.view.View;  
import android.widget.Button;  
import android.widget.MediaController;  
import android.widget.VideoView;  
  
public class MainActivity extends AppCompatActivity {  
  
 Button pipbtn;  
 String path = "/storage/DCIM/Camera/movie.mp4";  
 ActionBar actionBar;  
 VideoView video;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 video = (VideoView)findViewById(R.id.*video*);  
 actionBar = getActionBar();  
 MediaController mediaController= new MediaController(this);  
 mediaController.setAnchorView(video);  
 video.setMediaController(mediaController);  
 video.setVideoURI(Uri.*parse*(path));  
 video.requestFocus();  
 video.start();  
  
 pipbtn = (Button)findViewById(R.id.*pipbtn*);  
  
 pipbtn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Display display = getWindowManager().getDefaultDisplay();  
 Point point = new Point();  
 display.getSize(point);  
 int width = point.x;  
 int height = point.y;  
 Rational ratio = new Rational(width,height);  
 PictureInPictureParams.Builder pip\_builder = new PictureInPictureParams.Builder();  
 pip\_builder.setAspectRatio(ratio).build();  
 pipbtn.setVisibility(View.*INVISIBLE*);  
 enterPictureInPictureMode(pip\_builder.build());  
  
 }  
 });  
}  
}

**Output:**



**PRACTICAL 14**

**AIM:** Create an application that uses the end-to-end process of training a machine  
learning model that can recognize handwritten characters images with TensorFlow and  
deploy it to an Android app.

Ref:  
<https://codelabs.developers.google.com/codelabs/digit-classifiertflite/index.html?index=..%2F..index#0>

**Source Code:**

**Program: activity\_main.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">  <com.divyanshu.draw.widget.DrawView  android:id="@+id/draw\_view"  android:layout\_width="match\_parent"  android:layout\_height="0dp"  app:layout\_constraintDimensionRatio="1:1"  app:layout\_constraintTop\_toTopOf="parent"/>  <TextView  android:id="@+id/predicted\_text"  android:textStyle="bold"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="@string/prediction\_text\_placeholder"  android:textSize="20sp"  app:layout\_constraintBottom\_toTopOf="@id/clear\_button"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"  app:layout\_constraintTop\_toBottomOf="@id/draw\_view"/>  <Button  android:id="@+id/clear\_button"  android:layout\_width="wrap\_content"  android:layout\_height="wrap\_content"  android:text="@string/clear\_button\_text"  app:layout\_constraintBottom\_toBottomOf="parent"  app:layout\_constraintLeft\_toLeftOf="parent"  app:layout\_constraintRight\_toRightOf="parent"/>  </androidx.constraintlayout.widget.ConstraintLayout> |

**Program: MainActivity.java**

|  |
| --- |
| package org.tensorflow.lite.codelabs.digitclassifier  import android.annotation.SuppressLint  import android.graphics.Color  import android.os.Bundle  import androidx.appcompat.app.AppCompatActivity  import android.util.Log  import android.view.MotionEvent  import android.widget.Button  import android.widget.TextView  import com.divyanshu.draw.widget.DrawView  class MainActivity : AppCompatActivity() {  private var drawView: DrawView? = null  private var clearButton: Button? = null  private var predictedTextView: TextView? = null  private var digitClassifier = DigitClassifier(this)  @SuppressLint("ClickableViewAccessibility")  override fun onCreate(savedInstanceState: Bundle?) {  super.onCreate(savedInstanceState)  setContentView(R.layout.activity\_main)  // Setup view instances.  drawView = findViewById(R.id.draw\_view)  drawView?.setStrokeWidth(70.0f)  drawView?.setColor(Color.WHITE)  drawView?.setBackgroundColor(Color.BLACK)  clearButton = findViewById(R.id.clear\_button)  predictedTextView = findViewById(R.id.predicted\_text)  // Setup clear drawing button.  clearButton?.setOnClickListener {  drawView?.clearCanvas()  predictedTextView?.text = getString(R.string.prediction\_text\_placeholder)  }  // Setup classification trigger so that it classify after every stroke drew.  drawView?.setOnTouchListener { \_, event ->  // As we have interrupted DrawView's touch event,  // we first need to pass touch events through to the instance for the drawing to show up.  drawView?.onTouchEvent(event)  // Then if user finished a touch event, run classification  if (event.action == MotionEvent.ACTION\_UP) {  classifyDrawing()  }  true  }  // Setup digit classifier.  digitClassifier  .initialize()  .addOnFailureListener { e -> Log.e(TAG, "Error to setting up digit classifier.", e) }  }  override fun onDestroy() {  // Sync DigitClassifier instance lifecycle with MainActivity lifecycle,  // and free up resources (e.g. TF Lite instance) once the activity is destroyed.  digitClassifier.close()  super.onDestroy()  }  private fun classifyDrawing() {  val bitmap = drawView?.getBitmap()  if ((bitmap != null) && (digitClassifier.isInitialized)) {  digitClassifier  .classifyAsync(bitmap)  .addOnSuccessListener { resultText -> predictedTextView?.text = resultText }  .addOnFailureListener { e ->  predictedTextView?.text = getString(  R.string.classification\_error\_message,  e.localizedMessage  )  Log.e(TAG, "Error classifying drawing.", e)  }  }  }  companion object {  private const val TAG = "MainActivity"  }  } |

**Output:**



**Github Link**: <https://github.com/krushnal111/WCMC_practical-directory/upload/master>