

***Department of Data Science & Technology***

***Certificate***

***Masters in Computer Applications***

***Semester II (2023 – 24)***

***This is to certify that Ms. Pranjal Pradeep Sawant Roll No. 17030923047 of MCA, has satisfactorily completed the practical course “Mobile Application Development Lab” prescribed by the College for the Partial fulfillment of the Degree by the Somaiya Vidyavihar University, during the academic year 2023-25.***

***Signature of the Faculty-Incharge Signature of the Programme Coordinator***

***Prof. Sudarshan Sirsat Dr. Bharati Wukkadada***

***Date of Examination Signature of the External Examiner/s***

***21st June 2024***

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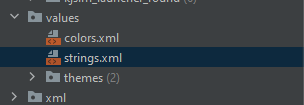
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### **Session 1 - Basics of Android**

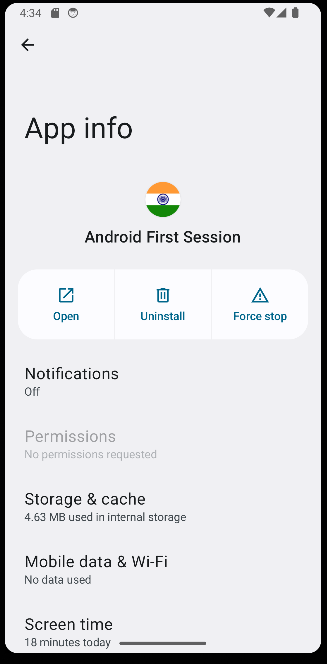
**Changing Name Of the App :**



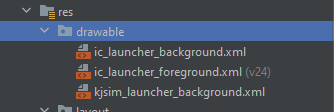
<resources>

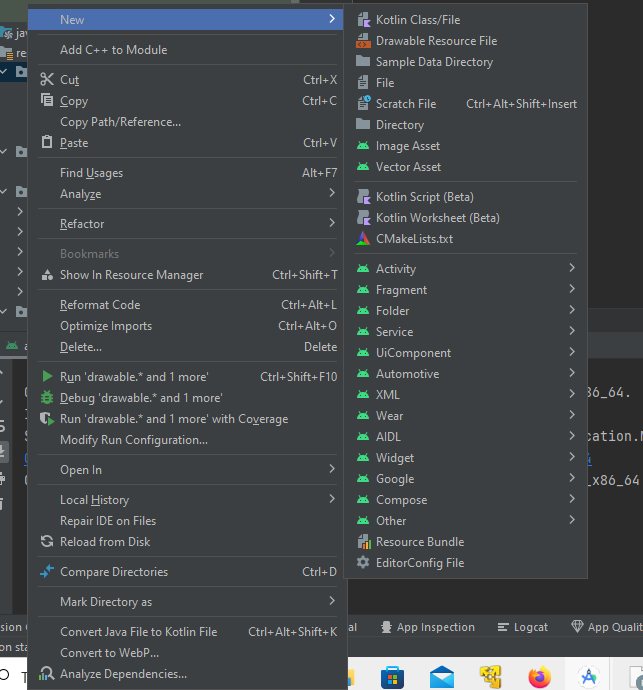
<string name="app\_name">Android First Session</string>

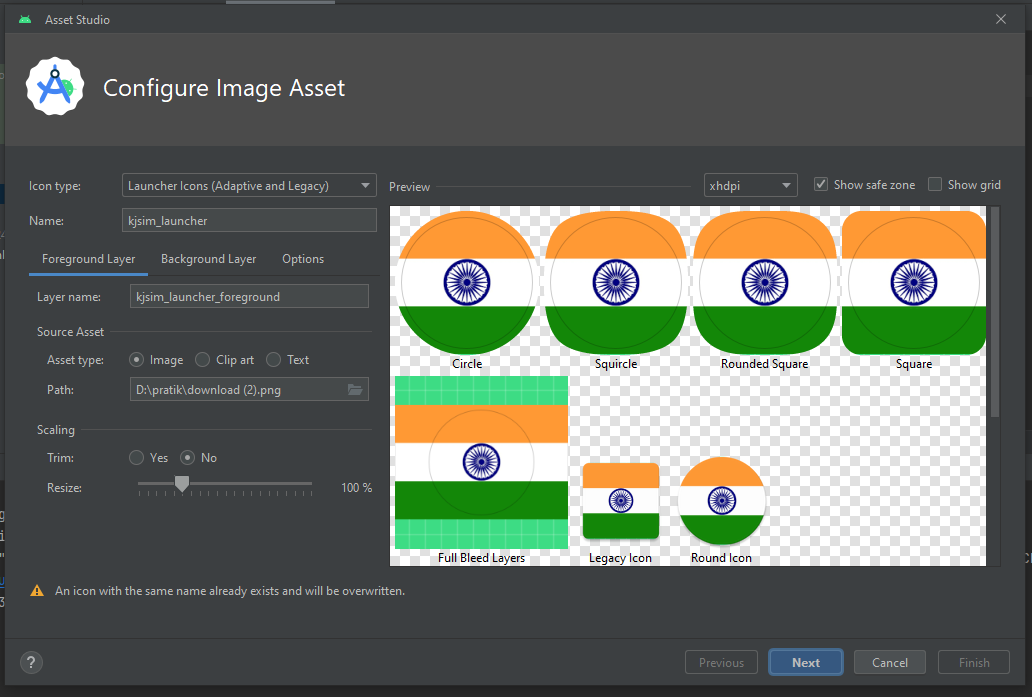
</resources>



**Changing Icon :**







<?xml version="1.0" encoding="utf-8"?>

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules"

android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/kjsim\_launcher"

android:label="@string/app\_name"

android:roundIcon="@mipmap/kjsim\_launcher\_round"

android:supportsRtl="true"

android:theme="@style/Theme.MyApplication"

tools:targetApi="31">

<activity

android:name=".MainActivity"

android:exported="true">

<intent-filter>

<action android:name="android.intent.action.MAIN" />

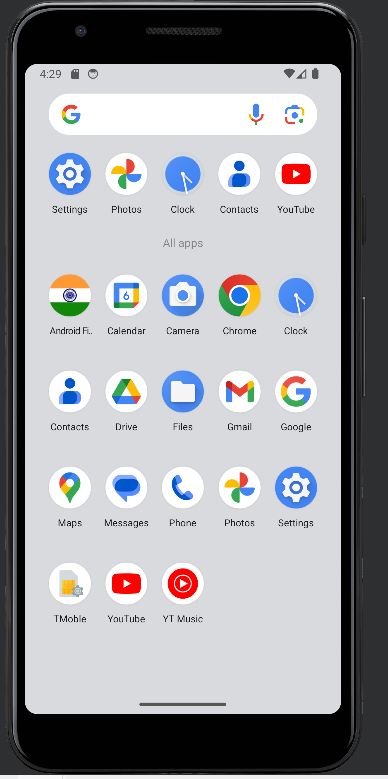
<category android:name="android.intent.category.LAUNCHER" />

</intent-filter>

</activity>

</application>

</manifest>



****

**Changing Background :**

**<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"**

**xmlns:app="http://schemas.android.com/apk/res-auto"**

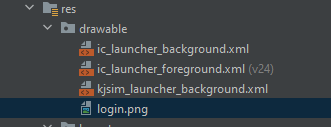
**xmlns:tools="http://schemas.android.com/tools"**

**android:layout\_width="match\_parent"**

**android:layout\_height="match\_parent"**

**android:background="@drawable/login"**

**tools:context=".MainActivity">**

****

****

**Login Form :**

**<Button**

**android:id="@+id/login"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="158dp"**

**android:layout\_marginEnd="162dp"**

**android:layout\_marginBottom="284dp"**

**android:text="Login" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_above="@+id/password"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_marginStart="100dp"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="35dp"**

**android:ems="10"**

**android:hint="Enter your Email"**

**android:inputType="textEmailAddress"**

**android:minHeight="48dp" />**

**<EditText**

**android:id="@+id/password"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_above="@+id/login"**

**android:layout\_alignParentEnd="true"**

**android:layout\_marginEnd="102dp"**

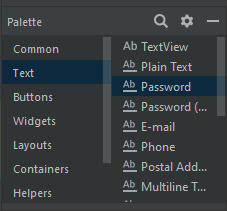
**android:layout\_marginBottom="116dp"**

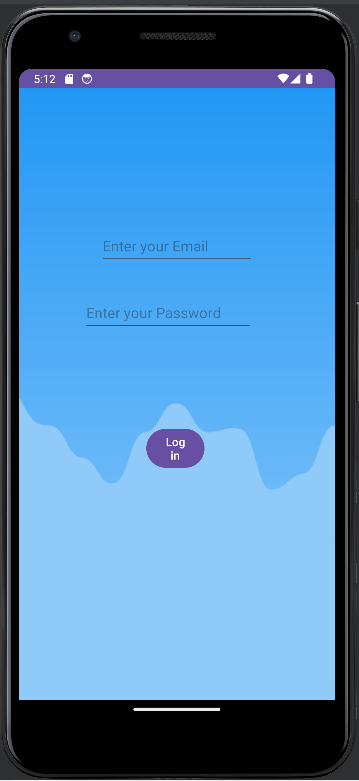
**android:ems="10"**

**android:hint="Enter your Password"**

**android:inputType="textPassword"**

**android:minHeight="48dp" />**

****

****

### **Session 2 - Login Application and Activity lifecycle**

**Displaying input content**

**package com.example.myapplication1;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.annotation.SuppressLint;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

***//object creation***

**EditText email,password;**

**Button login;**

**TextView msg;**

**@SuppressLint("MissingInflatedId")**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

***//object initilization***

**email=findViewById(R.id.*email*);**

**password=findViewById(R.id.*password*);**

**msg=findViewById(R.id.*msg*);**

**login=findViewById(R.id.*login*);**

**login.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**String e = email.getText().toString();**

**String p = password.getText().toString();**

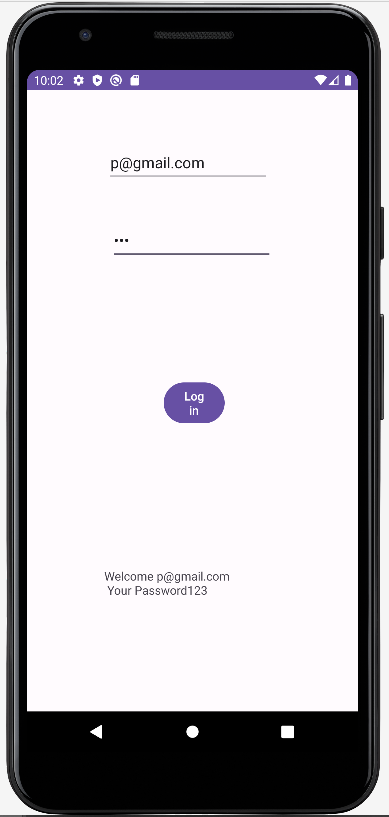
**msg.setText("Welcome " + e + "\n Your Password" + p );**

**}**

**});**

**}**

**}**



**Adding a toast**

package com.example.myapplication1;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

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 {

*//object creation*

EditText email,password;

Button login;

TextView msg;

@SuppressLint("MissingInflatedId")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.*activity\_main*);

*//object initilization*

email=findViewById(R.id.*email*);

password=findViewById(R.id.*password*);

msg=findViewById(R.id.*msg*);

login=findViewById(R.id.*login*);

login.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

StringBuffer stringBuffer = new StringBuffer();

stringBuffer.append("welcome \n");

stringBuffer.append("email : " + email.getText().toString() );

stringBuffer.append("\npassword : " + password.getText().toString());

msg.setText("Welcome " + email.getText().toString() + "\n Your Password" + password.getText().toString() );

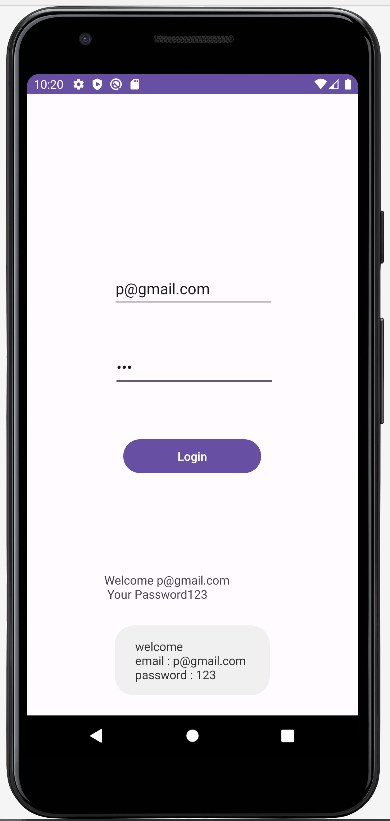
Toast.*makeText*(getApplicationContext(),stringBuffer, Toast.*LENGTH\_LONG*).show();

}

});

}

}



**Android LifeCycle :**

**package com.example.myapplication1;**

**import androidx.annotation.Nullable;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.annotation.SuppressLint;**

**import android.os.Bundle;**

**import android.os.PersistableBundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**public class MainActivity extends AppCompatActivity {**

***//object creation***

**Button login;**

**EditText email,password;**

**@SuppressLint("MissingInflatedId")**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

***//object initilization***

**login=findViewById(R.id.*login*);**

**email=findViewById(R.id.*email*);**

**password=findViewById(R.id.*password*);**

***//calling on click listner***

**login.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

***//setting string buffer***

**StringBuffer stringBuffer = new StringBuffer();**

**stringBuffer.append("Welcome \n");**

**stringBuffer.append("Email :"+email.getText().toString());**

**stringBuffer.append("\n Password :"+password.getText().toString());**

**Toast.*makeText*(getApplicationContext(),stringBuffer,Toast.*LENGTH\_LONG*).show();**

**}**

**});**

**}**

**@Override**

**protected void onStart() {**

**super.onStart();**

**Toast.*makeText*(getApplicationContext(),"On Start Called",Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**protected void onPause() {**

**super.onPause();**

**Toast.*makeText*(getApplicationContext(),"On Pause Called",Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**protected void onDestroy() {**

**super.onDestroy();**

**Toast.*makeText*(getApplicationContext(),"On Destroy" ,Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**protected void onResume() {**

**super.onResume();**

**Toast.*makeText*(getApplicationContext(),"On Resume" ,Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**public void onPostCreate(@Nullable Bundle savedInstanceState) {**

**super.onPostCreate(savedInstanceState);**

**Toast.*makeText*(getApplicationContext(),"OnPostCreate Called" ,Toast.*LENGTH\_LONG*).show();**

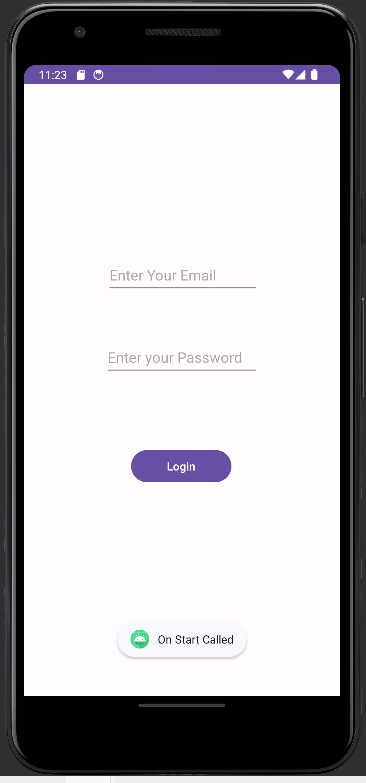
**}**

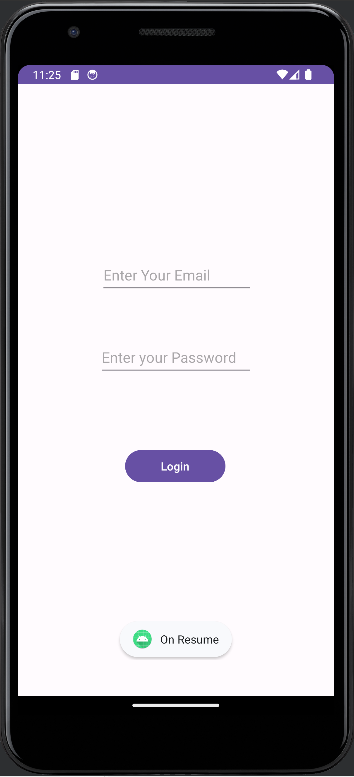
**public void info(View view){**

**Toast.*makeText*(getApplicationContext(),"Information Called",Toast.*LENGTH\_LONG*).show();**

**}**

**}**

****

****

****

***<?*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">**

**<Button**

**android:id="@+id/login"**

**android:layout\_width="182dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="114dp"**

**android:layout\_marginEnd="115dp"**

**android:layout\_marginBottom="283dp"**

**android:text="Login" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_above="@+id/password"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_marginStart="101dp"**

**android:layout\_marginEnd="99dp"**

**android:layout\_marginBottom="45dp"**

**android:ems="10"**

**android:hint="Enter your Email"**

**android:inputType="textEmailAddress"**

**android:minHeight="48dp" />**

**<EditText**

**android:id="@+id/password"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_above="@+id/login"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_marginStart="102dp"**

**android:layout\_marginEnd="98dp"**

**android:layout\_marginBottom="57dp"**

**android:ems="10"**

**android:hint="Enter your Password"**

**android:inputType="textPassword"**

**android:minHeight="48dp" />**

**<TextView**

**android:id="@+id/msg"**

**android:layout\_width="196dp"**

**android:layout\_height="48dp"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="105dp"**

**android:layout\_marginBottom="122dp"**

**android:text="TextView" />**

**<Button**

**android:id="@+id/button"**

**android:layout\_width="173dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="118dp"**

**android:onClick="info"**

**android:layout\_marginBottom="183dp"**

**android:text="Information" />**

**</RelativeLayout>**

**package com.example.myapplication1;**

**import androidx.annotation.Nullable;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.annotation.SuppressLint;**

**import android.os.Bundle;**

**import android.os.PersistableBundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**public class MainActivity extends AppCompatActivity {**

***//object creation***

**Button login;**

**EditText email,password;**

**@SuppressLint("MissingInflatedId")**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

***//object initilization***

**login=findViewById(R.id.*login*);**

**email=findViewById(R.id.*email*);**

**password=findViewById(R.id.*password*);**

***//calling on click listner***

**login.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

***//setting string buffer***

**StringBuffer stringBuffer = new StringBuffer();**

**stringBuffer.append("Welcome \n");**

**stringBuffer.append("Email :"+email.getText().toString());**

**stringBuffer.append("\n Password :"+password.getText().toString());**

**Toast.*makeText*(getApplicationContext(),stringBuffer,Toast.*LENGTH\_LONG*).show();**

**}**

**});**

**}**

**@Override**

**protected void onStart() {**

**super.onStart();**

**Toast.*makeText*(getApplicationContext(),"On Start Called",Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**protected void onPause() {**

**super.onPause();**

**Toast.*makeText*(getApplicationContext(),"On Pause Called",Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**protected void onDestroy() {**

**super.onDestroy();**

**Toast.*makeText*(getApplicationContext(),"On Destroy" ,Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**protected void onResume() {**

**super.onResume();**

**Toast.*makeText*(getApplicationContext(),"On Resume" ,Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**public void onPostCreate(@Nullable Bundle savedInstanceState) {**

**super.onPostCreate(savedInstanceState);**

**Toast.*makeText*(getApplicationContext(),"OnPostCreate Called" ,Toast.*LENGTH\_LONG*).show();**

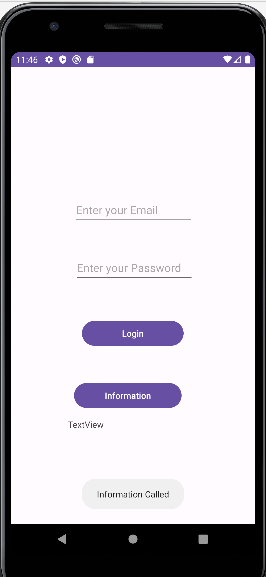
**}**

**public void info(View view){**

**Toast.*makeText*(getApplicationContext(),"Information Called",Toast.*LENGTH\_LONG*).show();**

**}**

**}**



### **Session 3 - Mapping of activities**

*<?*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">

<EditText

android:id="@+id/num1"

android:layout\_width="wrap\_content"

android:layout\_height="70dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="82dp"

android:layout\_marginEnd="82dp"

android:layout\_marginBottom="468dp"

android:ems="10"

android:hint="Enter a number"

android:inputType="number" />

<EditText

android:id="@+id/num2"

android:layout\_width="wrap\_content"

android:layout\_height="77dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="82dp"

android:layout\_marginEnd="82dp"

android:layout\_marginBottom="358dp"

android:ems="10"

android:hint="Enter another number"

android:inputType="number" />

<EditText

android:id="@+id/operation"

android:layout\_width="wrap\_content"

android:layout\_height="67dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="82dp"

android:layout\_marginEnd="82dp"

android:layout\_marginBottom="259dp"

android:ems="10"

android:hint="Enter operation + , / , \* , - "

android:inputType="text" />

<Button

android:id="@+id/calculate"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentStart="true"

android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="87dp"

android:layout\_marginEnd="76dp"

android:layout\_marginBottom="160dp"

android:onClick="calculate"

android:text="Calculate" />

<TextView

android:id="@+id/heading"

android:layout\_width="wrap\_content"

android:layout\_height="55dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="82dp"

android:layout\_marginEnd="82dp"

android:layout\_marginBottom="590dp"

android:textSize="40dp"

android:textAlignment="center"

android:text="Calculator" />

</RelativeLayout>

package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

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 num1,num2,operation;

Button calculate;

@SuppressLint("WrongViewCast")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.*activity\_main*);

num1 = findViewById(R.id.*num1*);

num2 = findViewById(R.id.*num2*);

operation = findViewById(R.id.*operation*);

calculate = findViewById(R.id.*calculate*);

*// calculate.setOnClickListener(new View.OnClickListener() {*

*// @Override*

*// public void onClick(View view) {*

*// String op = operation.getText().toString();*

*// int n1 = Integer.parseInt(num1.getText().toString());*

*// int n2 = Integer.parseInt(num2.getText().toString());*

*// if(op.equals("+")) {*

*// Toast.makeText(MainActivity.this, "Addition " + (n1 + n2), Toast.LENGTH\_SHORT).show();*

*// } else if (op.equals("-")) {*

*// Toast.makeText(MainActivity.this, "Subtraction " + (n1 - n2), Toast.LENGTH\_SHORT).show();*

*// } else if (op.equals("\*")) {*

*// Toast.makeText(MainActivity.this, "Multiplication " + (n1 \* n2), Toast.LENGTH\_SHORT).show();*

*// } else if (op.equals("/")){*

*// Toast.makeText(MainActivity.this, "Division " + (n1 / n2), Toast.LENGTH\_SHORT).show();*

*// }else {*

*// Toast.makeText(MainActivity.this, "Invalid Operation", Toast.LENGTH\_SHORT).show();*

*// }*

*//*

*//*

*// }*

*// });*

}

public void calculate(View view) {

String op = operation.getText().toString();

int n1 = Integer.*parseInt*(num1.getText().toString());

int n2 = Integer.*parseInt*(num2.getText().toString());

if(op.equals("+")) {

Toast.*makeText*(MainActivity.this, "Addition " + (n1 + n2), Toast.*LENGTH\_SHORT*).show();

} else if (op.equals("-")) {

Toast.*makeText*(MainActivity.this, "Subtraction " + (n1 - n2), Toast.*LENGTH\_SHORT*).show();

} else if (op.equals("\*")) {

Toast.*makeText*(MainActivity.this, "Multiplication " + (n1 \* n2), Toast.*LENGTH\_SHORT*).show();

} else if (op.equals("/")){

Toast.*makeText*(MainActivity.this, "Division " + (n1 / n2), Toast.*LENGTH\_SHORT*).show();

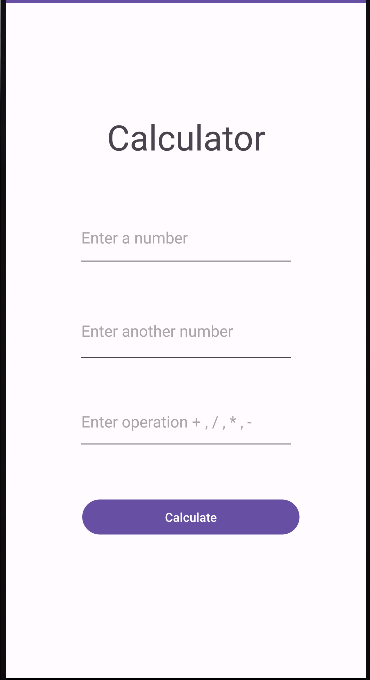
}else {

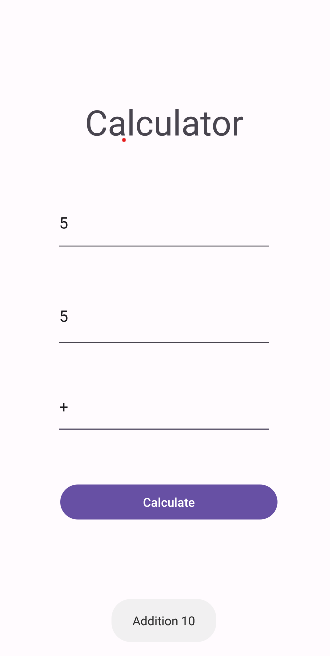
Toast.*makeText*(MainActivity.this, "Invalid Operation", Toast.*LENGTH\_SHORT*).show();

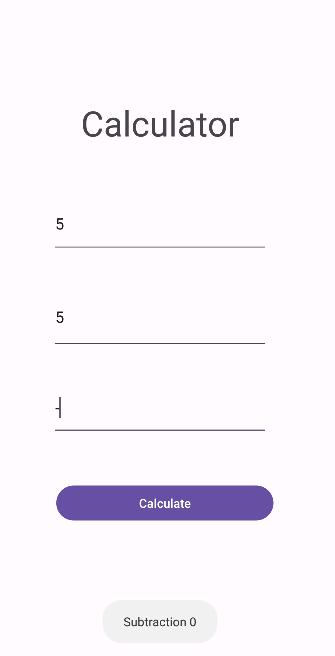
}

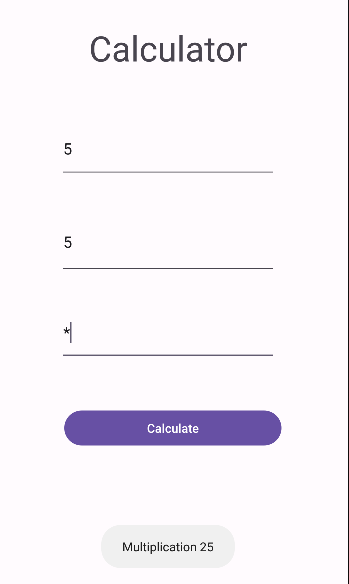
}

}

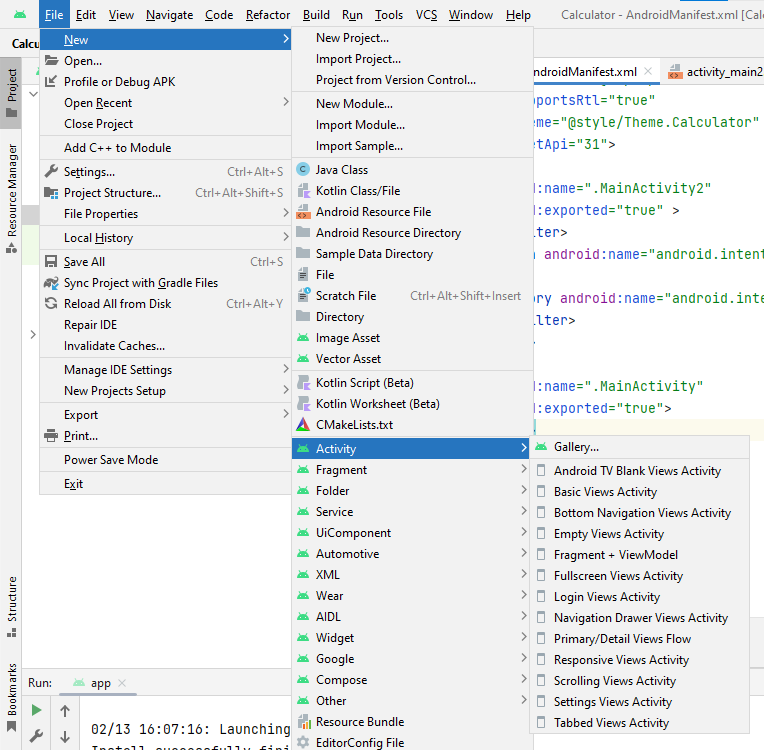








**Create new activity and make it a launcher**



*<?*xml version="1.0" encoding="utf-8"*?>*

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules"

android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:roundIcon="@mipmap/ic\_launcher\_round"

android:supportsRtl="true"

android:theme="@style/Theme.Calculator"

tools:targetApi="31">

<activity

android:name=".MainActivity2"

android:exported="true" >

<intent-filter>

<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER" />

</intent-filter>

</activity>

<activity

android:name=".MainActivity"

android:exported="true">

</activity>

</application>

</manifest>

On button click change activity

package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

public class MainActivity2 extends AppCompatActivity {

Button go;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.*activity\_main2*);

go = findViewById(R.id.*go*);

go.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent = new Intent(MainActivity2.this, MainActivity.class);

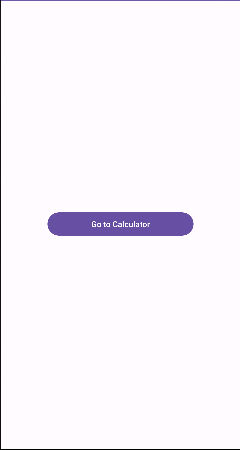
startActivity(intent);

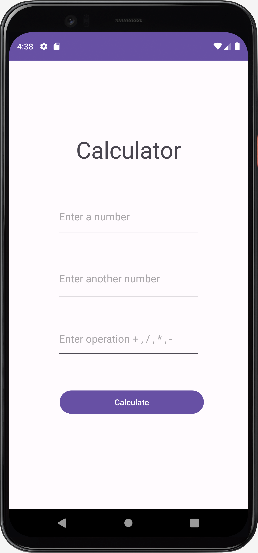
}

});

}

}





**Getting data from one activity and displaying it in another (Explicit Intent with Bundle)**

package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

public class MainActivity2 extends AppCompatActivity {

Button go;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.*activity\_main2*);

go = findViewById(R.id.*go*);

go.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent = new Intent(getApplicationContext(), MainActivity.class);

intent.putExtra("Subject" , "App Dev");

intent.putExtra("Teacher", "Prof. Sudarshan");

startActivity(intent);

}

});

}

}

package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

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 num1,num2,operation;

Button calculate;

Bundle recieved;

@SuppressLint("WrongViewCast")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.*activity\_main*);

recieved = getIntent().getExtras();

Toast.*makeText*(this, "Subject : " + recieved.getString("Subject") + "\n Teacher :" + recieved.getString("Teacher"), Toast.*LENGTH\_SHORT*).show();

num1 = findViewById(R.id.*num1*);

num2 = findViewById(R.id.*num2*);

operation = findViewById(R.id.*operation*);

calculate = findViewById(R.id.*calculate*);

*// calculate.setOnClickListener(new View.OnClickListener() {*

*// @Override*

*// public void onClick(View view) {*

*// String op = operation.getText().toString();*

*// int n1 = Integer.parseInt(num1.getText().toString());*

*// int n2 = Integer.parseInt(num2.getText().toString());*

*// if(op.equals("+")) {*

*// Toast.makeText(MainActivity.this, "Addition " + (n1 + n2), Toast.LENGTH\_SHORT).show();*

*// } else if (op.equals("-")) {*

*// Toast.makeText(MainActivity.this, "Subtraction " + (n1 - n2), Toast.LENGTH\_SHORT).show();*

*// } else if (op.equals("\*")) {*

*// Toast.makeText(MainActivity.this, "Multiplication " + (n1 \* n2), Toast.LENGTH\_SHORT).show();*

*// } else if (op.equals("/")){*

*// Toast.makeText(MainActivity.this, "Division " + (n1 / n2), Toast.LENGTH\_SHORT).show();*

*// }else {*

*// Toast.makeText(MainActivity.this, "Invalid Operation", Toast.LENGTH\_SHORT).show();*

*// }*

*//*

*//*

*// }*

*// });*

}

public void calculate(View view) {

String op = operation.getText().toString();

int n1 = Integer.*parseInt*(num1.getText().toString());

int n2 = Integer.*parseInt*(num2.getText().toString());

if(op.equals("+")) {

Toast.*makeText*(MainActivity.this, "Addition " + (n1 + n2), Toast.*LENGTH\_SHORT*).show();

} else if (op.equals("-")) {

Toast.*makeText*(MainActivity.this, "Subtraction " + (n1 - n2), Toast.*LENGTH\_SHORT*).show();

} else if (op.equals("\*")) {

Toast.*makeText*(MainActivity.this, "Multiplication " + (n1 \* n2), Toast.*LENGTH\_SHORT*).show();

} else if (op.equals("/")){

Toast.*makeText*(MainActivity.this, "Division " + (n1 / n2), Toast.*LENGTH\_SHORT*).show();

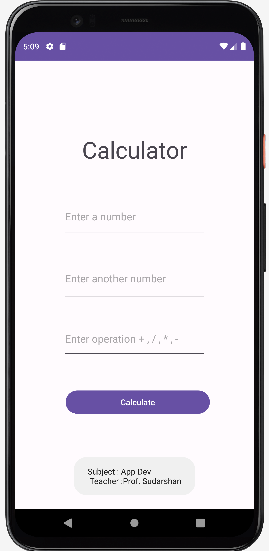
}else {

Toast.*makeText*(MainActivity.this, "Invalid Operation", Toast.*LENGTH\_SHORT*).show();

}

}

}



### **Session 4 - Intents**

**package com.example.img;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.Intent;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.ImageButton;**

**public class MainActivity extends AppCompatActivity {**

**ImageButton wp;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**wp = findViewById(R.id.*wp*);**

**wp.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent changewp = new Intent(Intent.*ACTION\_SET\_WALLPAPER*);**

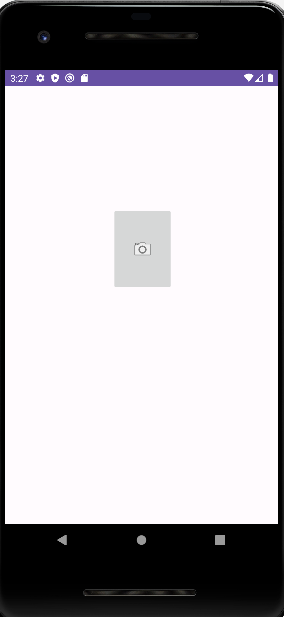
**startActivity(Intent.*createChooser*(changewp,"Select wallpaper"));**

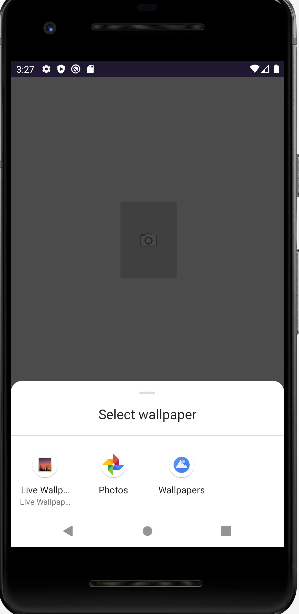
**}**

**});**

**}**

**}**

****

****

**Open google on url**

**package com.example.img;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.Intent;**

**import android.net.Uri;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.EditText;**

**import android.widget.ImageButton;**

**public class MainActivity extends AppCompatActivity {**

**ImageButton wp;**

**ImageButton ws;**

**EditText url;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**ws = findViewById(R.id.*ws*);**

**url = findViewById(R.id.*url*);**

**ws.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent i = new Intent(Intent.*ACTION\_VIEW*);**

**i.setData(Uri.*parse*("https://www.google.com/"+**

**url.getText().toString()));**

**startActivity(i);**

**}**

**});**

**wp = findViewById(R.id.*wp*);**

**wp.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent changewp = new Intent(Intent.*ACTION\_SET\_WALLPAPER*);**

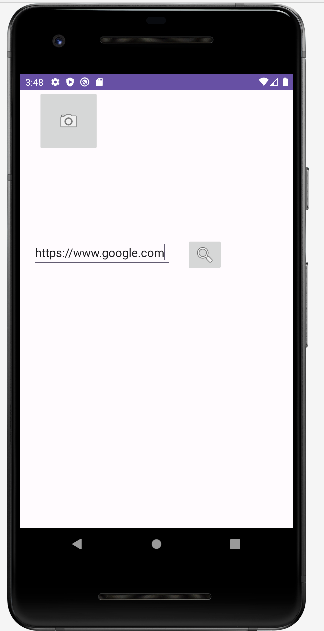
**startActivity(Intent.*createChooser*(changewp,"Select wallpaper"));**

**}**

**});**

**}**

**}**

****

****

**Open dialer**

**package com.example.img;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.Intent;**

**import android.net.Uri;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.EditText;**

**import android.widget.ImageButton;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

**ImageButton wp, ws, dial;**

**EditText url,num;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**ws = findViewById(R.id.*ws*);**

**url = findViewById(R.id.*url*);**

**num = findViewById(R.id.*num*);**

**dial =findViewById(R.id.*dial*);**

**dial.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent dialer = new Intent(Intent.*ACTION\_DIAL*);**

**dialer.setData(Uri.*parse*("tel:"+num.getText().toString()));**

**startActivity(dialer);**

**}**

**});**

**ws.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent i = new Intent(Intent.*ACTION\_VIEW*);**

**i.setData(Uri.*parse*(url.getText().toString()));**

**startActivity(i);**

**}**

**});**

**wp = findViewById(R.id.*wp*);**

**wp.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent changewp = new Intent(Intent.*ACTION\_SET\_WALLPAPER*);**

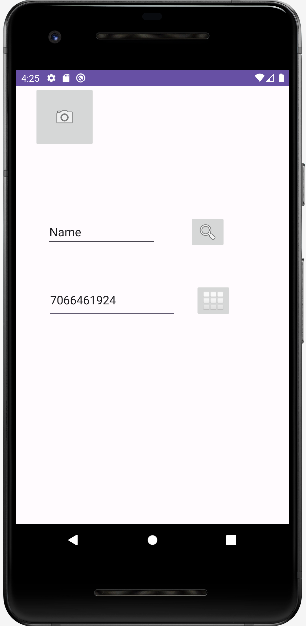
**startActivity(Intent.*createChooser*(changewp,"Select wallpaper"));**

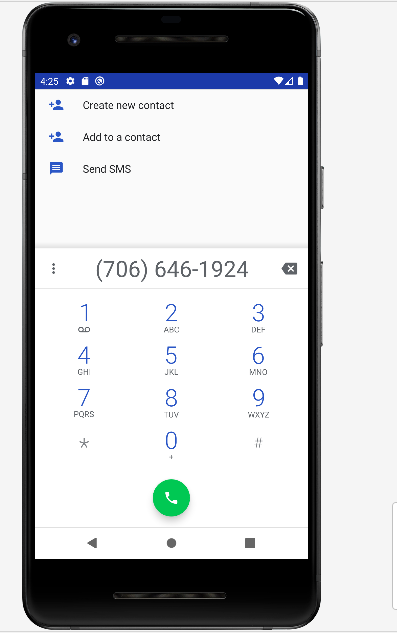
**}**

**});**

**}**

**}**

****

****

**Open Map**

**package com.example.img;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.Intent;**

**import android.net.Uri;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.EditText;**

**import android.widget.ImageButton;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

**ImageButton wp, ws, dial, map;**

**EditText url,num,loc;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**ws = findViewById(R.id.*ws*);**

**url = findViewById(R.id.*url*);**

**num = findViewById(R.id.*num*);**

**dial =findViewById(R.id.*dial*);**

**map = findViewById(R.id.*map*);**

**loc = findViewById(R.id.*loc*);**

**map.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent mapIntent = new Intent(Intent.*ACTION\_VIEW*);**

**mapIntent.setData(Uri.*parse*("geo:0,0?q=" + loc.getText().toString()));**

**startActivity(mapIntent);**

**}**

**});**

**dial.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent dialer = new Intent(Intent.*ACTION\_DIAL*);**

**dialer.setData(Uri.*parse*("tel:"+num.getText().toString()));**

**startActivity(dialer);**

**}**

**});**

**ws.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent i = new Intent(Intent.*ACTION\_VIEW*);**

**i.setData(Uri.*parse*(url.getText().toString()));**

**startActivity(i);**

**}**

**});**

**wp = findViewById(R.id.*wp*);**

**wp.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent changewp = new Intent(Intent.*ACTION\_SET\_WALLPAPER*);**

**startActivity(Intent.*createChooser*(changewp,"Select wallpaper"));**

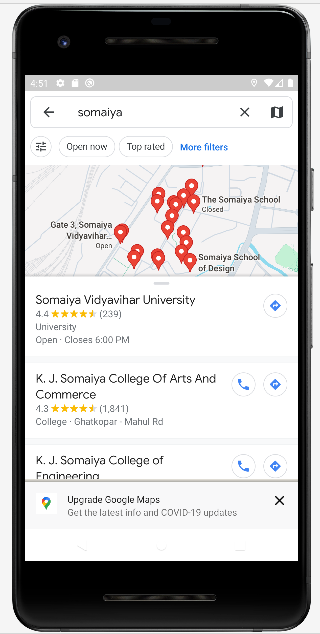
**}**

**});**

**}**

**}**

****

****

### **Session 5 - Alert dialogue interface and arrays**

**package com.example.email;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.Intent;**

**import android.content.res.Resources;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

**EditText to,cc,subject,body;**

**Button send;**

**TextView textView;**

**StringBuilder sb;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**Resources res = getResources();**

**String[] cities = res.getStringArray(R.array.*city*);**

**sb = new StringBuilder();**

**textView = findViewById(R.id.*textView*);**

**for(int i=0;i<cities.length;i++){**

**sb.append("\n" + cities[i]);**

**}**

**textView.setText(sb);**

**to=findViewById(R.id.*to*);**

**cc=findViewById(R.id.*cc*);**

**subject=findViewById(R.id.*subject*);**

**body=findViewById(R.id.*body*);**

**send=findViewById(R.id.*send*);**

**send.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent mail=new Intent(Intent.*ACTION\_SEND*);**

**mail.putExtra(Intent.*EXTRA\_EMAIL*,new String[]{to.getText().toString()});**

**mail.putExtra(Intent.*EXTRA\_CC*,new String[]{cc.getText().toString()});**

**mail.putExtra(Intent.*EXTRA\_SUBJECT*,subject.getText().toString());**

**mail.putExtra(Intent.*EXTRA\_TEXT*,body.getText().toString());**

**mail.setType("message/rfc822");**

**startActivity(Intent.*createChooser*(mail,"select email client..."));**

**}**

**});**

**}**

**}**

***<?*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">**

**<EditText**

**android:id="@+id/to"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="102dp"**

**android:layout\_marginBottom="475dp"**

**android:ems="10"**

**android:hint="someone@gmail.com"**

**android:inputType="textEmailAddress"**

**android:minHeight="48dp" />**

**<EditText**

**android:id="@+id/cc"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="99dp"**

**android:layout\_marginBottom="395dp"**

**android:ems="10"**

**android:hint="cc"**

**android:inputType="textEmailAddress"**

**android:minHeight="48dp" />**

**<EditText**

**android:id="@+id/subject"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="313dp"**

**android:ems="10"**

**android:hint="Subject"**

**android:inputType="text"**

**android:minHeight="48dp" />**

**<EditText**

**android:id="@+id/body"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="129dp"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="96dp"**

**android:layout\_marginBottom="152dp"**

**android:ems="10"**

**android:gravity="start|top"**

**android:hint="Email Body"**

**android:inputType="textMultiLine" />**

**<Button**

**android:id="@+id/send"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="163dp"**

**android:layout\_marginBottom="81dp"**

**android:text="Send" />**

**<TextView**

**android:id="@+id/textView"**

**android:layout\_width="227dp"**

**android:layout\_height="79dp"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="91dp"**

**android:layout\_marginBottom="557dp"**

**android:text="TextView" />**

**</RelativeLayout>**

**Strings.xml**

**<resources>**

**<string name="app\_name">Email</string>**

**<array name="city">**

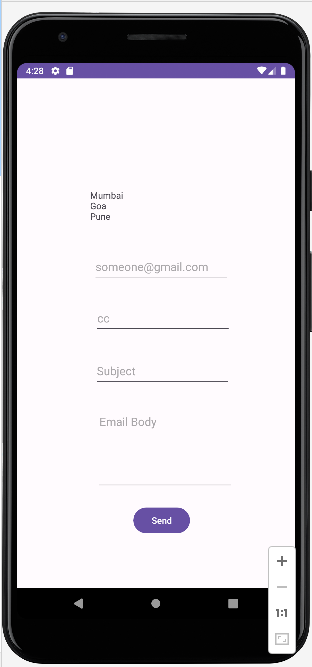
**<item>Mumbai</item>**

**<item>Goa</item>**

**<item>Pune</item>**

**</array>**

**</resources>**

****

**Alert Dialog Interface**

**package com.example.email;**

**import androidx.appcompat.app.AlertDialog;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.DialogInterface;**

**import android.content.Intent;**

**import android.content.res.Resources;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

**EditText to,cc,subject,body;**

**Button send, alert;**

**TextView textView;**

**StringBuilder sb;**

**AlertDialog alertDialog;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**Resources res = getResources();**

**String[] cities = res.getStringArray(R.array.*city*);**

**sb = new StringBuilder();**

**textView = findViewById(R.id.*textView*);**

**for(int i=0;i<cities.length;i++){**

**sb.append("\n" + cities[i]);**

**}**

**textView.setText(sb);**

**to=findViewById(R.id.*to*);**

**cc=findViewById(R.id.*cc*);**

**subject=findViewById(R.id.*subject*);**

**body=findViewById(R.id.*body*);**

**send=findViewById(R.id.*send*);**

**alert = findViewById(R.id.*alert*);**

**alertDialog = new AlertDialog.Builder(this).create();**

**alert.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**alertDialog.setTitle("Cities");**

**alertDialog.setMessage(sb);**

**alertDialog.setCancelable(true);**

**alertDialog.setButton(AlertDialog.*BUTTON\_NEGATIVE*,"cancel",new DialogInterface.OnClickListener(){**

**public void onClick(DialogInterface dialogInterface, int i){**

**alertDialog.dismiss();**

**}**

**});**

**alertDialog.setButton(AlertDialog.*BUTTON\_POSITIVE*, "ok", new DialogInterface.OnClickListener() {**

**@Override**

**public void onClick(DialogInterface dialogInterface, int i) {**

**onRestart();**

**}**

**});**

**alertDialog.show();**

**}**

**});**

**send.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Intent mail=new Intent(Intent.*ACTION\_SEND*);**

**mail.putExtra(Intent.*EXTRA\_EMAIL*,new String[]{to.getText().toString()});**

**mail.putExtra(Intent.*EXTRA\_CC*,new String[]{cc.getText().toString()});**

**mail.putExtra(Intent.*EXTRA\_SUBJECT*,subject.getText().toString());**

**mail.putExtra(Intent.*EXTRA\_TEXT*,body.getText().toString());**

**mail.setType("message/rfc822");**

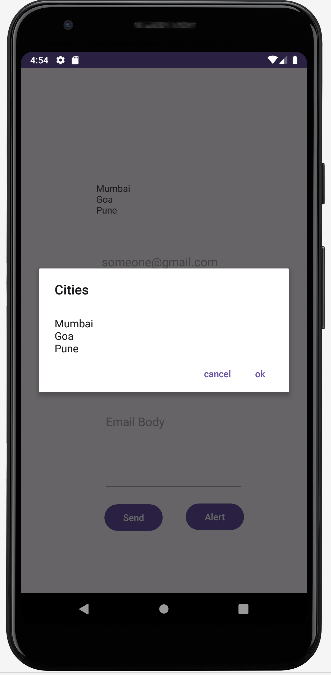
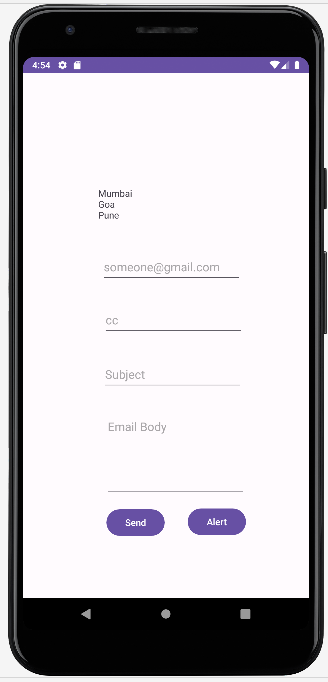
**startActivity(Intent.*createChooser*(mail,"select email client..."));**

**}**

**});**

**}**

**}**

****

### **Session 6 - UI Controls**

**MainActivity.java**

**package com.example.form;**

**import static com.example.form.R.id.*university*;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.ArrayAdapter;**

**import android.widget.AutoCompleteTextView;**

**import android.widget.Button;**

**import android.widget.CheckBox;**

**import android.widget.EditText;**

**import android.widget.MultiAutoCompleteTextView;**

**import android.widget.RadioButton;**

**import android.widget.RadioGroup;**

**import android.widget.Spinner;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

**AutoCompleteTextView city;**

**MultiAutoCompleteTextView degree;**

**EditText dob;**

**CheckBox ssc,hsc,ug;**

**RadioGroup rg;**

**RadioButton tea,coffee,juice,rb\_rb;**

**Spinner university;**

**StringBuilder output;**

**Button register;**

**TextView details;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**city = findViewById(R.id.*city*);**

**String[] cities = {"mumbai", "goa", "pune"};**

**ArrayAdapter<String> arrayAdapter = new ArrayAdapter<>(this, android.R.layout.*simple\_list\_item\_1*,cities);**

**city.setThreshold(1);**

**city.setAdapter(arrayAdapter);**

**degree = findViewById(R.id.*degree*);**

**String[] unis = {"mumbai university" , "somaiya university", "vidyavihar university"};**

**ArrayAdapter<String> arrayAdapter1 = new ArrayAdapter<>(this, android.R.layout.*simple\_list\_item\_1*,unis);**

**degree.setThreshold(1);**

**degree.setTokenizer(new MultiAutoCompleteTextView.CommaTokenizer());**

**degree.setAdapter(arrayAdapter1);**

**dob = findViewById(R.id.*dob*);**

**ssc = findViewById(R.id.*ssc*);**

**hsc = findViewById(R.id.*hsc*);**

**ug = findViewById(R.id.*ug*);**

**tea = findViewById(R.id.*tea*);**

**coffee = findViewById(R.id.*coffee*);**

**juice = findViewById(R.id.*juice*);**

**university = findViewById(R.id.*university*);**

**register = findViewById(R.id.*register*);**

**output = new StringBuilder();**

**output.append("Registration: \n");**

**details = findViewById(R.id.*details*);**

**register.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**output.append("\n DOB "+dob.getText().toString());**

**output.append("\n Degrees: ");**

**if (ssc.isChecked()) {**

**output.append(ssc.getText().toString());**

**}**

**if (hsc.isChecked()) {**

**output.append(" , "+hsc.getText().toString());**

**}**

**if (ug.isChecked()){**

**output.append(" , "+ug.getText().toString());**

**}**

**output.append("\n Your preferred drink is: ");**

**if (tea.isChecked()){**

**output.append(tea.getText().toString());**

**}**

**if (coffee.isChecked()){**

**output.append(coffee.getText().toString());**

**}**

**if (juice.isChecked()){**

**output.append(juice.getText().toString());**

**}**

**details.setText(output);**

**}**

**});**

**}}**

**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">**

**<AutoCompleteTextView**

**android:id="@+id/city"**

**android:layout\_width="368dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="27dp"**

**android:layout\_marginBottom="605dp"**

**android:hint="city" />**

**<MultiAutoCompleteTextView**

**android:id="@+id/degree"**

**android:layout\_width="359dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="36dp"**

**android:layout\_marginBottom="533dp"**

**android:hint="degree" />**

**<CheckBox**

**android:id="@+id/ssc"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="339dp"**

**android:layout\_marginBottom="472dp"**

**android:text="ssc" />**

**<CheckBox**

**android:id="@+id/hsc"**

**android:layout\_width="110dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="211dp"**

**android:layout\_marginBottom="470dp"**

**android:text="hsc" />**

**<CheckBox**

**android:id="@+id/ug"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="147dp"**

**android:layout\_marginBottom="471dp"**

**android:text="ug" />**

**<RadioGroup**

**android:id="@+id/rg"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="213dp"**

**android:layout\_marginBottom="315dp">**

**<RadioButton**

**android:id="@+id/rb1"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_weight="1"**

**android:text="something" />**

**<RadioButton**

**android:id="@+id/rb2"**

**android:layout\_width="175dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_weight="1"**

**android:text="something else" />**

**<RadioButton**

**android:id="@+id/rb3"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_weight="1"**

**android:text="something else else" />**

**</RadioGroup>**

**<RadioButton**

**android:id="@+id/tea"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="109dp"**

**android:layout\_marginBottom="302dp"**

**android:text="tea" />**

**<RadioButton**

**android:id="@+id/coffee"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="89dp"**

**android:layout\_marginBottom="359dp"**

**android:text="coffee" />**

**<RadioButton**

**android:id="@+id/juice"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="103dp"**

**android:layout\_marginBottom="412dp"**

**android:text="juice" />**

**<Button**

**android:id="@+id/register"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="159dp"**

**android:layout\_marginBottom="202dp"**

**android:text="Register" />**

**<TextView**

**android:id="@+id/details"**

**android:layout\_width="370dp"**

**android:layout\_height="176dp"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="22dp"**

**android:layout\_marginBottom="30dp"**

**android:text="TextView" />**

**<EditText**

**android:id="@+id/dob"**

**android:layout\_width="365dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="30dp"**

**android:layout\_marginBottom="668dp"**

**android:ems="10"**

**android:inputType="date"**

**android:hint="dob"/>**

**<Spinner**

**android:id="@+id/university"**

**android:layout\_width="355dp"**

**android:layout\_height="wrap\_content"**

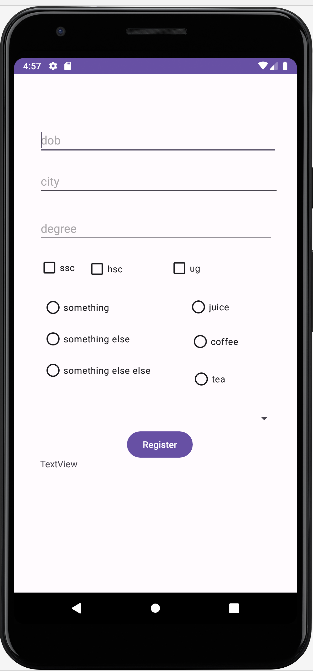
**android:layout\_alignParentEnd="true"**

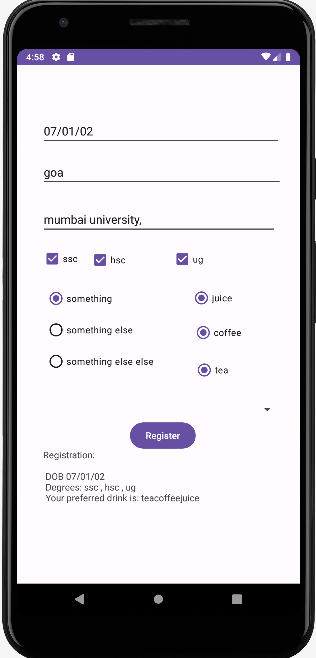
**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="26dp"**

**android:layout\_marginBottom="254dp" />**

**</RelativeLayout>**

****

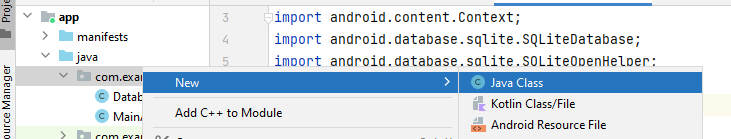
****

### **Session 7 - SQLite Database CRUD operations**

**Database Connectivity**

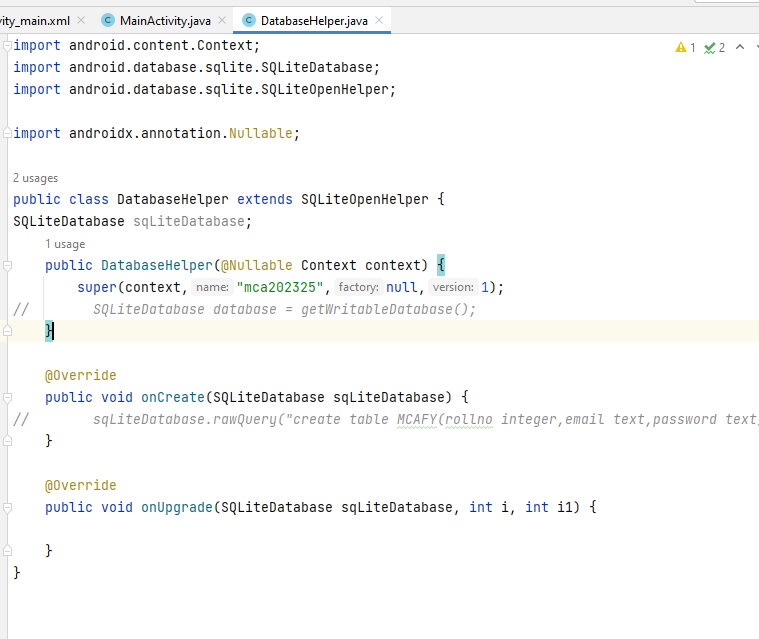
**Step 1**

**Create a java class named as DatabaseHelper**

****

**Step 2**

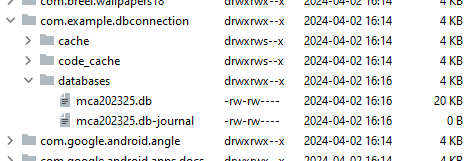
**Solve errors and get this methods**

****

**Step 3**

**Open device explorer and go to data > data > com.example.filename**

**Save the .db file and use a sqlite viewer online to view the file**

****

**Insert records through GUI**

**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">**

**<TextView**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="168dp"**

**android:layout\_marginEnd="166dp"**

**android:layout\_marginBottom="584dp"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<Button**

**android:id="@+id/register"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="159dp"**

**android:layout\_marginBottom="166dp"**

**android:text="Register" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="449dp"**

**android:ems="10"**

**android:hint="Enter Email"**

**android:inputType="textEmailAddress" />**

**<EditText**

**android:id="@+id/pwd"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="322dp"**

**android:ems="10"**

**android:hint="Enter Password"**

**android:inputType="textPassword" />**

**</RelativeLayout>**

**MainActivity.java**

**package com.example.dbconnection;**

**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 email,pwd;**

**Button register;**

**DatabaseHelper databaseHelper;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**email = findViewById(R.id.*email*);**

**pwd = findViewById(R.id.*pwd*);**

**register = findViewById(R.id.*register*);**

**register.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**if(!email.getText().toString().isEmpty()&& !pwd.getText().toString().isEmpty()){**

**boolean res = databaseHelper.insertUser(email.getText().toString(),pwd.getText().toString());**

**if (res == true)**

**Toast.*makeText*(getApplicationContext(), "Record inserted" , Toast.*LENGTH\_LONG*).show();**

**else**

**Toast.*makeText*(getApplicationContext(), "Failed" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**});**

**databaseHelper = new DatabaseHelper(this);**

**Toast.*makeText*(getApplicationContext(), "DB instance created" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**DatabaseHelper.java**

**package com.example.dbconnection;**

**import android.content.ContentValues;**

**import android.content.Context;**

**import android.database.sqlite.SQLiteDatabase;**

**import android.database.sqlite.SQLiteOpenHelper;**

**import androidx.annotation.Nullable;**

**public class DatabaseHelper extends SQLiteOpenHelper {**

**SQLiteDatabase database;**

**public DatabaseHelper(@Nullable Context context) {**

**super(context,"mca202325.db",null,1);**

***// sqLiteDatabase = getWritableDatabase();***

**database = getWritableDatabase();**

**}**

**@Override**

**public void onCreate(SQLiteDatabase sqLiteDatabase) {**

***// sqLiteDatabase = getWritableDatabase();***

**sqLiteDatabase.execSQL("create table MCAFY(rollno integer primary key autoincrement,email text,password text)");**

**}**

**@Override**

**public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {**

**}**

**public boolean insertUser(String email,String pwd){**

**ContentValues cv = new ContentValues();**

**cv.put("email",email);**

**cv.put("password",pwd);**

**long res = database.insert("MCAFY",null, cv);**

**if (res == -1)**

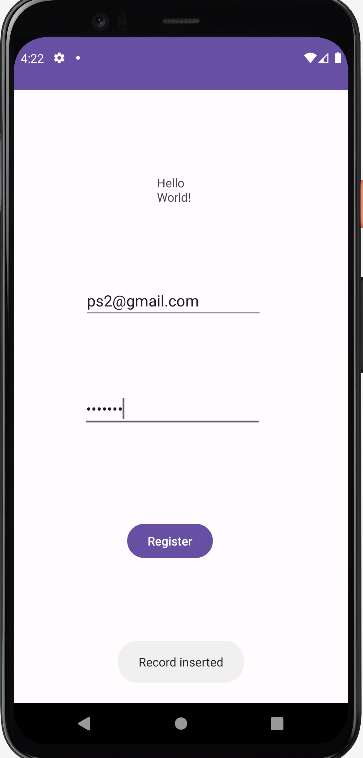
**return false;**

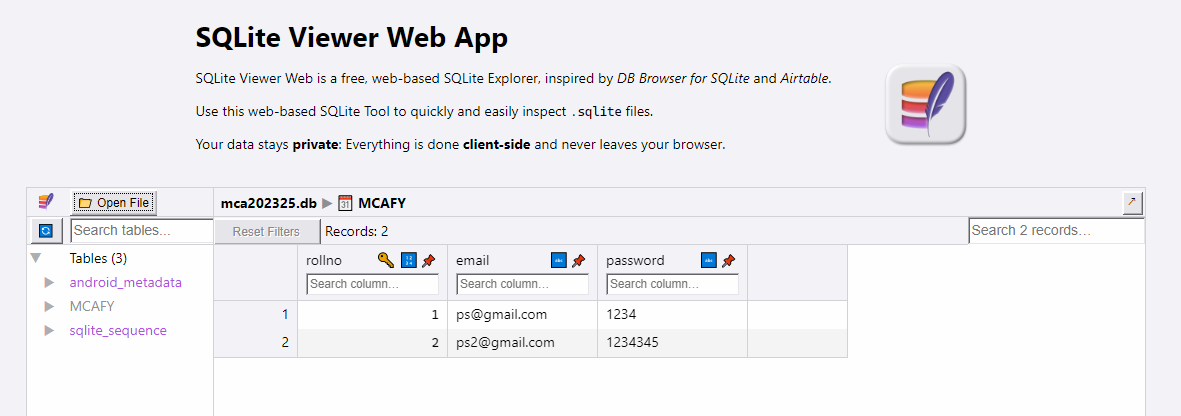
**else**

**return true;**

**}**

**}**

****

****

### 

**MainActivity.java**

**For insert, search, show, clear**

**package com.example.dbconnection;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.database.Cursor;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.TextView;**

**import android.widget.Toast;**

**import java.io.CharArrayWriter;**

**public class MainActivity extends AppCompatActivity {**

**EditText email,pwd,rollno;**

**Button register, show, search, clear, between;**

**DatabaseHelper databaseHelper;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**email = findViewById(R.id.*email*);**

**pwd = findViewById(R.id.*pwd*);**

**register = findViewById(R.id.*register*);**

**show = findViewById(R.id.*show*);**

**search = findViewById(R.id.*search*);**

**rollno = findViewById(R.id.*rollno*);**

**clear = findViewById(R.id.*clear*);**

**between = findViewById(R.id.*between*);**

**register.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**if(!email.getText().toString().isEmpty()&& !pwd.getText().toString().isEmpty()){**

**boolean res = databaseHelper.insertUser(email.getText().toString(),pwd.getText().toString());**

**if (res == true)**

**Toast.*makeText*(getApplicationContext(), "Record inserted" , Toast.*LENGTH\_LONG*).show();**

**else**

**Toast.*makeText*(getApplicationContext(), "Failed" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**});**

**show.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**StringBuilder records = new StringBuilder();**

**Cursor result = databaseHelper.showRecords();**

**records.append("Table has: "+result.getCount() + "records! \n"); while (result.moveToNext())**

**{**

**records.append("user-id: "+result.getString(0));**

**records.append("user-email: "+ result.getString(1));**

**records.append("user-password: "+ result.getString(2));**

**records.append("\n");**

**}**

**Toast.*makeText*(MainActivity.this, records, Toast.*LENGTH\_LONG*).show(); records.append(" ");**

**}**

**});**

**search.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Cursor record= databaseHelper.searchRecord(Integer.*parseInt*(rollno.getText().toString()));**

**StringBuffer sb=new StringBuffer();**

**sb.append("Record Searched Result :\n");**

**if(record.getCount()==0)**

**Toast.*makeText*(MainActivity.this,"No record founded",Toast.*LENGTH\_LONG*).show();**

**else {**

**while (record.moveToNext())**

**{**

**sb.append("roll no"+record.getString(0));**

**sb.append("email"+record.getString(1));**

**sb.append("password"+record.getString(2));**

**Toast.*makeText*(MainActivity.this,sb,Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**}**

**});**

**clear.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**email.setText("");**

**pwd.setText("");**

**rollno.setText("");**

**}**

**});**

**between.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**}**

**});**

**databaseHelper = new DatabaseHelper(this);**

**Toast.*makeText*(getApplicationContext(), "DB instance created" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**DatabaseHelper.java**

**package com.example.dbconnection;**

**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 {**

**SQLiteDatabase database;**

**public DatabaseHelper(@Nullable Context context) {**

**super(context,"mca202325.db",null,1);**

***// sqLiteDatabase = getWritableDatabase();***

**database = getWritableDatabase();**

**}**

**@Override**

**public void onCreate(SQLiteDatabase sqLiteDatabase) {**

***// sqLiteDatabase = getWritableDatabase();***

**sqLiteDatabase.execSQL("create table MCAFY(rollno integer primary key autoincrement,email text,password text)");**

**}**

**@Override**

**public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {**

**}**

**public boolean insertUser(String email,String pwd){**

**ContentValues cv = new ContentValues();**

**cv.put("email",email);**

**cv.put("password",pwd);**

**long res = database.insert("MCAFY",null, cv);**

**if (res == -1)**

**return false;**

**else**

**return true;**

**}**

**public Cursor showRecords(){**

**Cursor result = database.rawQuery("select \* from MCAFY", null);**

**if(result.getCount()!=0)**

**return result;**

**else**

**return result;**

**}**

**public Cursor searchRecord(int rollno) {**

**Cursor result = database.rawQuery("select \* from MCAFY where rollno=" + rollno , null);**

**if(result.getCount()>0)**

**return result;**

**else**

**return result;**

**}**

**}**

**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">**

**<TextView**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="168dp"**

**android:layout\_marginEnd="166dp"**

**android:layout\_marginBottom="662dp"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<Button**

**android:id="@+id/register"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="289dp"**

**android:layout\_marginBottom="395dp"**

**android:text="Register" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="523dp"**

**android:ems="10"**

**android:hint="Enter Email"**

**android:inputType="textEmailAddress" />**

**<EditText**

**android:id="@+id/pwd"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="98dp"**

**android:layout\_marginBottom="469dp"**

**android:ems="10"**

**android:hint="Enter Password"**

**android:inputType="textPassword" />**

**<Button**

**android:id="@+id/show"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="135dp"**

**android:layout\_marginBottom="393dp"**

**android:text="Show Records" />**

**<Button**

**android:id="@+id/search"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="27dp"**

**android:layout\_marginBottom="390dp"**

**android:text="Search" />**

**<EditText**

**android:id="@+id/rollno"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="584dp"**

**android:ems="10"**

**android:inputType="number" />**

**<TextView**

**android:id="@+id/content"**

**android:layout\_width="376dp"**

**android:layout\_height="117dp"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="9dp"**

**android:layout\_marginBottom="120dp"**

**android:text="TextView" />**

**<Button**

**android:id="@+id/clear"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="293dp"**

**android:layout\_marginBottom="307dp"**

**android:text="Clear" />**

**<Button**

**android:id="@+id/between"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

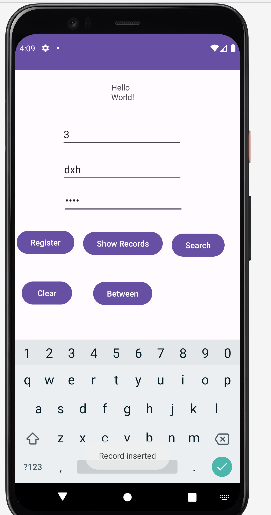
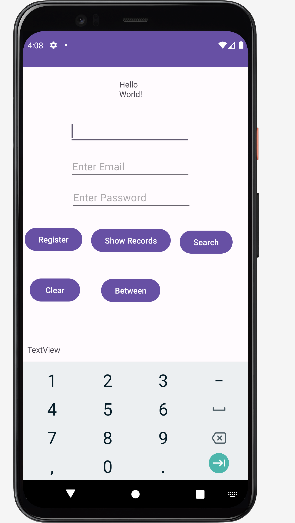
**android:layout\_alignParentBottom="true"**

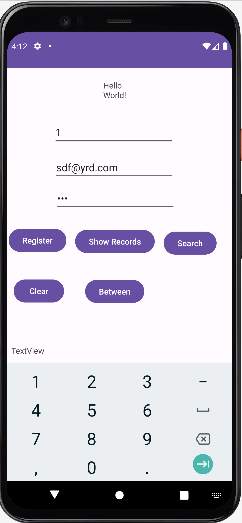
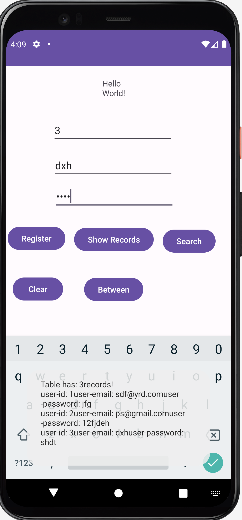
**android:layout\_marginEnd="153dp"**

**android:layout\_marginBottom="306dp"**

**android:text="Between" />**

**</RelativeLayout>**

****

****

**CRUD - insert,delete,update,show,search,clear**

**MainActivity.java**

**package com.example.dbconnection;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.database.Cursor;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.TextView;**

**import android.widget.Toast;**

**import java.io.CharArrayWriter;**

**public class MainActivity extends AppCompatActivity {**

**EditText email,pwd,rollno,cid,course,city;**

**Button register, show, search, clear,update,delete;**

**DatabaseHelper databaseHelper;**

**TextView content;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**email = findViewById(R.id.*email*);**

**pwd = findViewById(R.id.*pwd*);**

**register = findViewById(R.id.*register*);**

**show = findViewById(R.id.*show*);**

**search = findViewById(R.id.*search*);**

**rollno = findViewById(R.id.*rollno*);**

**clear = findViewById(R.id.*clear*);**

**cid = findViewById(R.id.*cid*);**

**course = findViewById(R.id.*course*);**

**city = findViewById(R.id.*city*);**

**update = findViewById(R.id.*update*);**

**delete = findViewById(R.id.*delete*);**

**register.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**if(!email.getText().toString().isEmpty() && !pwd.getText().toString().isEmpty() && !course.getText().toString().isEmpty() && !cid.getText().toString().isEmpty() && !city.getText().toString().isEmpty()){**

**boolean res = databaseHelper.insertUser(email.getText().toString(),pwd.getText().toString(),cid.getText().toString(),course.getText().toString(),city.getText().toString());**

**if (res == true)**

**Toast.*makeText*(getApplicationContext(), "Record inserted" , Toast.*LENGTH\_LONG*).show();**

**else**

**Toast.*makeText*(getApplicationContext(), "Failed" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**});**

**show.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**StringBuilder records = new StringBuilder();**

**Cursor result = databaseHelper.showRecords();**

**records.append("Table has: "+result.getCount() + "records! \n"); while (result.moveToNext())**

**{**

**records.append("user-id: "+result.getString(0));**

**records.append("user-email: "+ result.getString(1));**

**records.append("user-password: "+ result.getString(2));**

**records.append("user-cid: "+ result.getString(3));**

**records.append("user-course: "+ result.getString(4));**

**records.append("user-city: "+ result.getString(5));**

**records.append("\n");**

**records.append("\n");**

**}**

**Toast.*makeText*(MainActivity.this, records, Toast.*LENGTH\_LONG*).show(); records.append(" ");**

**}**

**});**

**search.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**Cursor record = databaseHelper.searchRecord(Integer.*parseInt*(rollno.getText().toString()));**

**if(record.getCount()==0)**

**Toast.*makeText*(MainActivity.this,"No Record Found !!",Toast.*LENGTH\_SHORT*);**

**else**

**{**

**while (record.moveToNext())**

**{**

**email.setText(record.getString(1));**

**pwd.setText(record.getString(2));**

**cid.setText(record.getString(3));**

**course.setText(record.getString(4));**

**city.setText(record.getString(5));**

**}**

**}**

**}**

**});**

**clear.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**email.setText("");**

**pwd.setText("");**

**rollno.setText("");**

**cid.setText("");**

**course.setText("");**

**city.setText("");**

**}**

**});**

**update.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**if(!email.getText().toString().isEmpty() && !pwd.getText().toString().isEmpty() && !course.getText().toString().isEmpty() && !cid.getText().toString().isEmpty() && !city.getText().toString().isEmpty()){**

**boolean res = databaseHelper.updateRecord(Integer.*parseInt*(rollno.getText().toString()),email.getText().toString(),pwd.getText().toString(),cid.getText().toString(),course.getText().toString(),city.getText().toString());**

**if (res == true)**

**Toast.*makeText*(getApplicationContext(), "Record updated" , Toast.*LENGTH\_LONG*).show();**

**else**

**Toast.*makeText*(getApplicationContext(), "Failed" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**});**

**delete.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**if(!email.getText().toString().isEmpty() && !pwd.getText().toString().isEmpty() && !course.getText().toString().isEmpty() && !cid.getText().toString().isEmpty() && !city.getText().toString().isEmpty()){**

**boolean res = databaseHelper.deleteRecord(Integer.*parseInt*(rollno.getText().toString()),email.getText().toString(),pwd.getText().toString(),cid.getText().toString(),course.getText().toString(),city.getText().toString());**

**if (res == true)**

**Toast.*makeText*(getApplicationContext(), "Record deleted" , Toast.*LENGTH\_LONG*).show();**

**else**

**Toast.*makeText*(getApplicationContext(), "Failed" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**});**

**databaseHelper = new DatabaseHelper(this);**

**Toast.*makeText*(getApplicationContext(), "DB instance created" , Toast.*LENGTH\_LONG*).show();**

**}**

**}**

**DatabaseHelper.java**

**package com.example.dbconnection;**

**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 {**

**SQLiteDatabase database;**

**public DatabaseHelper(@Nullable Context context) {**

**super(context,"mca202325.db",null,1);**

***// sqLiteDatabase = getWritableDatabase();***

**database = getWritableDatabase();**

**}**

**@Override**

**public void onCreate(SQLiteDatabase sqLiteDatabase) {**

***// sqLiteDatabase = getWritableDatabase();***

**sqLiteDatabase.execSQL("create table MCAFY(rollno integer primary key autoincrement,email text,password text,cid text,course text,city text)");**

**}**

**@Override**

**public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {**

**}**

**public boolean insertUser(String email,String pwd,String cid,String course,String city){**

**ContentValues cv = new ContentValues();**

**cv.put("email",email);**

**cv.put("password",pwd);**

**cv.put("cid",cid);**

**cv.put("course", course);**

**cv.put("city",city);**

**long res = database.insert("MCAFY",null, cv);**

**if (res == -1)**

**return false;**

**else**

**return true;**

**}**

**public Cursor showRecords(){**

**Cursor result = database.rawQuery("select \* from MCAFY", null);**

**if(result.getCount()!=0)**

**return result;**

**else**

**return result;**

**}**

**public Cursor searchRecord(int rollno) {**

**Cursor result = database.rawQuery("select \* from MCAFY where rollno=" + rollno , null);**

**if(result.getCount()>0)**

**return result;**

**else**

**return result;**

**}**

**public boolean updateRecord(int rollno, String email,String pwd, String cid, String course,String city){**

**ContentValues cv = new ContentValues();**

**cv.put("email",email);**

**cv.put("password",pwd);**

**cv.put("cid",cid);**

**cv.put("course",course);**

**cv.put("city",city);**

**long res = database.update("MCAFY",cv,"rollno=?",new String[]{String.*valueOf*(rollno)});**

**if (res != -1)**

**return true;**

**else**

**return false;**

**}**

**public boolean deleteRecord(int rollno, String email,String pwd, String cid, String course,String city){**

**ContentValues cv = new ContentValues();**

**cv.put("email",email);**

**cv.put("password",pwd);**

**cv.put("cid",cid);**

**cv.put("course",course);**

**cv.put("city",city);**

**long res = database.delete("MCAFY","rollno=?",new String[]{String.*valueOf*(rollno)});**

**if (res != -1)**

**return true;**

**else**

**return false;**

**}**

**}**

**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">**

**<TextView**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="168dp"**

**android:layout\_marginEnd="166dp"**

**android:layout\_marginBottom="662dp"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<Button**

**android:id="@+id/register"**

**android:layout\_width="158dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="201dp"**

**android:layout\_marginBottom="174dp"**

**android:text="Register" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="523dp"**

**android:ems="10"**

**android:hint="Enter Email"**

**android:inputType="textEmailAddress" />**

**<EditText**

**android:id="@+id/pwd"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="98dp"**

**android:layout\_marginBottom="469dp"**

**android:ems="10"**

**android:hint="Enter Password"**

**android:inputType="textPassword" />**

**<Button**

**android:id="@+id/show"**

**android:layout\_width="148dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="41dp"**

**android:layout\_marginBottom="173dp"**

**android:text="Show" />**

**<Button**

**android:id="@+id/search"**

**android:layout\_width="161dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="201dp"**

**android:layout\_marginBottom="117dp"**

**android:text="Search" />**

**<EditText**

**android:id="@+id/rollno"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="584dp"**

**android:ems="10"**

**android:inputType="number"**

**android:hint="Enter RollNo"/>**

**<Button**

**android:id="@+id/clear"**

**android:layout\_width="146dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="44dp"**

**android:layout\_marginBottom="113dp"**

**android:text="Clear" />**

**<EditText**

**android:id="@+id/cid"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="93dp"**

**android:layout\_marginBottom="410dp"**

**android:ems="10"**

**android:inputType="text"**

**android:hint="CourseID" />**

**<EditText**

**android:id="@+id/course"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="345dp"**

**android:ems="10"**

**android:inputType="text"**

**android:hint="Course Name" />**

**<EditText**

**android:id="@+id/city"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="285dp"**

**android:ems="10"**

**android:inputType="text"**

**android:hint="City" />**

**<Button**

**android:id="@+id/update"**

**android:layout\_width="152dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="208dp"**

**android:layout\_marginBottom="57dp"**

**android:text="Update" />**

**<Button**

**android:id="@+id/delete"**

**android:layout\_width="150dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

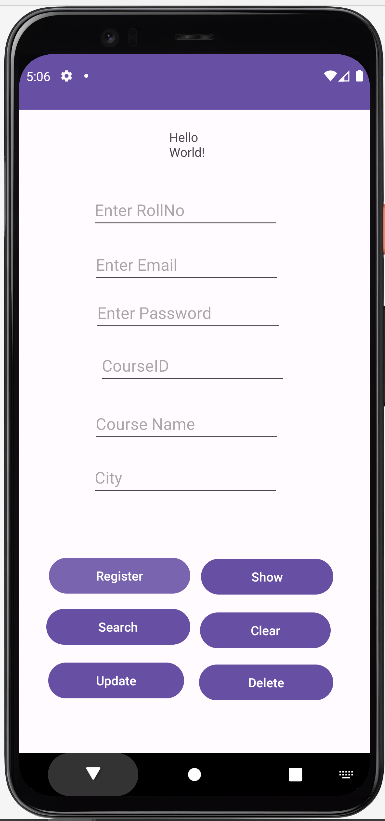
**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="41dp"**

**android:layout\_marginBottom="55dp"**

**android:text="Delete" />**

**</RelativeLayout>**

****

### **Session 8 - Menu**

**Main Activity**

**package com.example.anew;**

**import androidx.annotation.NonNull;**

**import androidx.appcompat.app.AppCompatActivity;**

**import androidx.appcompat.widget.Toolbar;**

**import android.content.Intent;**

**import android.net.Uri;**

**import android.os.Bundle;**

**import android.view.Menu;**

**import android.view.MenuInflater;**

**import android.view.MenuItem;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.PopupMenu;**

**import android.widget.Toast;**

**public class MainActivity extends AppCompatActivity {**

**Toolbar toolbar;**

**Button show;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**toolbar = findViewById(R.id.*toolbar*);**

**setSupportActionBar(toolbar);**

**show = findViewById(R.id.*show*);**

**show.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**PopupMenu popupMenu = new PopupMenu(MainActivity.this,show);**

**popupMenu.inflate(R.menu.*popup\_menu*);**

**popupMenu.show();**

**}**

**});**

**}**

**@Override**

**public boolean onCreateOptionsMenu(Menu menu) {**

**MenuInflater inflater = getMenuInflater();**

**inflater.inflate(R.menu.*option\_menu*,menu);**

**return true;**

**}**

**@Override**

**public boolean onOptionsItemSelected(@NonNull MenuItem item) {**

**int id = item.getItemId();**

**if(id == R.id.*save*) {**

**Intent save = new Intent(getApplicationContext(), MainActivity.class);**

**startActivity(save);**

***// Toast.makeText(this, "you clicked: " + item.getTitle(), Toast.LENGTH\_SHORT).show();***

**return true;**

**}**

**else if(id == R.id.*open*) {**

**Uri gmmIntentUri = Uri.*parse*("geo:0,0?q=vidyavihar");**

**Intent mapIntent = new Intent(Intent.*ACTION\_VIEW*, gmmIntentUri);**

**mapIntent.setPackage("com.google.android.apps.maps");**

**startActivity(mapIntent);**

***// Toast.makeText(this, "you clicked: " + item.getTitle(), Toast.LENGTH\_SHORT).show();***

**return true;**

**}**

**else {**

**Toast.*makeText*(this, "you clicked: " + item.getTitle(), Toast.*LENGTH\_SHORT*).show();**

**return true;**

**}**

**}**

**}**

**Option menu**

***<?*xml version="1.0" encoding="utf-8"*?>***

**<menu xmlns:android="http://schemas.android.com/apk/res/android"**

**xmlns:app="http://schemas.android.com/apk/res-auto">**

**<item**

**android:id="@+id/open"**

**android:title="open"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/save"**

**android:title="save"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/edit"**

**android:title="edit"**

**app:showAsAction="never"/>**

**</menu>**

**POP up menu**

***<?*xml version="1.0" encoding="utf-8"*?>***

**<menu xmlns:android="http://schemas.android.com/apk/res/android"**

**xmlns:app="http://schemas.android.com/apk/res-auto">**

**<item**

**android:id="@+id/saveas"**

**android:title="saveas"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/print"**

**android:title="print"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/format"**

**android:title="format"**

**app:showAsAction="never">**

**<menu>**

**<item**

**android:id="@+id/font"<item**

**android:title="font"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/size"**

**android:title="size"**

**app:showAsAction="never"/>**

**</menu>**

**</item>**

**</menu>**

**Activity main**

***<?*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">**

**<TextView**

**android:id="@+id/textView"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<androidx.appcompat.widget.Toolbar**

**android:id="@+id/toolbar"**

**android:layout\_width="409dp"**

**android:layout\_height="wrap\_content"**

**android:background="?attr/colorPrimary"**

**android:minHeight="?attr/actionBarSize"**

**android:theme="?attr/actionBarTheme"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"**

**app:layout\_constraintVertical\_bias="0.102"**

**tools:layout\_editor\_absoluteX="1dp" />**

**<Button**

**android:id="@+id/show"**

**android:layout\_width="127dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="147dp"**

**android:layout\_marginEnd="137dp"**

**android:layout\_marginBottom="530dp"**

**android:text="Show" />**

**</RelativeLayout>**

### 

**MainActivity.java**

**package com.example.anew;**

**import androidx.annotation.NonNull;**

**import androidx.appcompat.app.AppCompatActivity;**

**import androidx.appcompat.widget.Toolbar;**

**import android.content.Intent;**

**import android.net.Uri;**

**import android.os.Bundle;**

**import android.view.ContextMenu;**

**import android.view.Menu;**

**import android.view.MenuInflater;**

**import android.view.MenuItem;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.PopupMenu;**

**import android.widget.TextView;**

**import android.widget.Toast;**

**public class MainActivity extends AppCompatActivity {**

**Toolbar toolbar;**

**Button show;**

**TextView context;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**toolbar = findViewById(R.id.*toolbar*);**

**setSupportActionBar(toolbar);**

**context = findViewById(R.id.*textView3*);**

**registerForContextMenu(context);**

**show = findViewById(R.id.*show*);**

**show.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**PopupMenu popupMenu = new PopupMenu(MainActivity.this,show);**

**popupMenu.inflate(R.menu.*popup\_menu*);**

**popupMenu.show();**

**}**

**});**

**}**

**@Override**

**public void onCreateContextMenu(ContextMenu menu, View v, ContextMenu.ContextMenuInfo menuInfo) {**

**super.onCreateContextMenu(menu, v, menuInfo);**

**MenuInflater inflater = getMenuInflater();**

**inflater.inflate(R.menu.*context\_menu*,menu);**

**}**

**@Override**

**public boolean onCreateOptionsMenu(Menu menu) {**

**MenuInflater inflater = getMenuInflater();**

**inflater.inflate(R.menu.*option\_menu*,menu);**

**return true;**

**}**

**@Override**

**public boolean onOptionsItemSelected(@NonNull MenuItem item) {**

**int id = item.getItemId();**

**if(id == R.id.*save*) {**

**Intent changewp = new Intent(Intent.*ACTION\_SET\_WALLPAPER*);**

**startActivity(Intent.*createChooser*(changewp,"Select wallpaper"));**

***// Toast.makeText(this, "you clicked: " + item.getTitle(), Toast.LENGTH\_SHORT).show();***

**return true;**

**}**

**else if(id == R.id.*open*) {**

**Uri gmmIntentUri = Uri.*parse*("geo:0,0?q=vidyavihar");**

**Intent mapIntent = new Intent(Intent.*ACTION\_VIEW*, gmmIntentUri);**

**mapIntent.setPackage("com.google.android.apps.maps");**

**startActivity(mapIntent);**

***// Toast.makeText(this, "you clicked: " + item.getTitle(), Toast.LENGTH\_SHORT).show();***

**return true;**

**}**

**else {**

**Toast.*makeText*(this, "you clicked: " + item.getTitle(), Toast.*LENGTH\_SHORT*).show();**

**return true;**

**}**

**}**

**}**

**Context\_menu.xml**

***<?*xml version="1.0" encoding="utf-8"*?>***

**<menu xmlns:android="http://schemas.android.com/apk/res/android"**

**xmlns:app="http://schemas.android.com/apk/res-auto">**

**<item**

**android:id="@+id/open"**

**android:title="open maps"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/save"**

**android:title="change wallpaper"**

**app:showAsAction="never"/>**

**<item**

**android:id="@+id/edit"**

**android:title="edit"**

**app:showAsAction="never"/>**

**</menu>**

**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">**

**<TextView**

**android:id="@+id/textView"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<androidx.appcompat.widget.Toolbar**

**android:id="@+id/toolbar"**

**android:layout\_width="409dp"**

**android:layout\_height="wrap\_content"**

**android:background="?attr/colorPrimary"**

**android:minHeight="?attr/actionBarSize"**

**android:theme="?attr/actionBarTheme"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"**

**app:layout\_constraintVertical\_bias="0.102"**

**tools:layout\_editor\_absoluteX="1dp" />**

**<Button**

**android:id="@+id/show"**

**android:layout\_width="127dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="147dp"**

**android:layout\_marginEnd="137dp"**

**android:layout\_marginBottom="530dp"**

**android:text="Show" />**

**<TextView**

**android:id="@+id/textView3"**

**android:layout\_width="287dp"**

**android:layout\_height="69dp"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

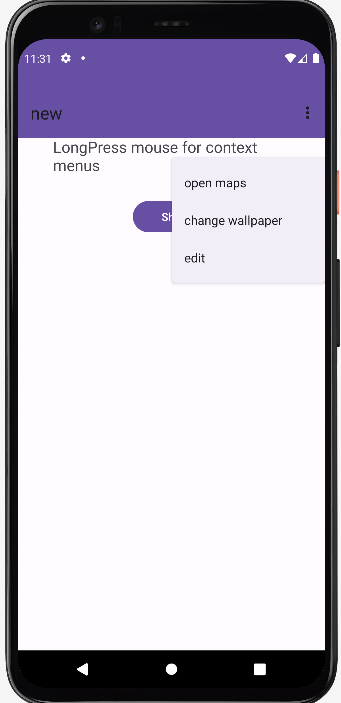
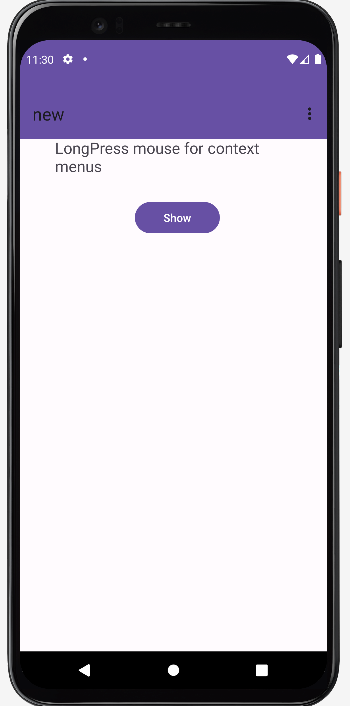
**android:layout\_marginEnd="61dp"**

**android:layout\_marginBottom="588dp"**

**android:text="LongPress mouse for context menus"**

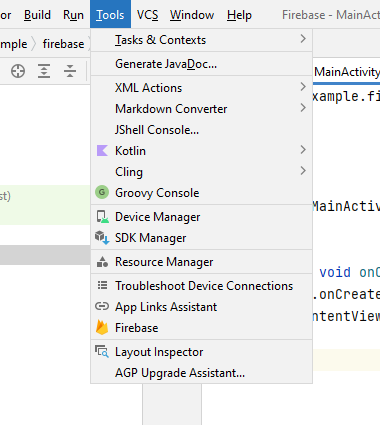
**android:textSize="20sp" />**

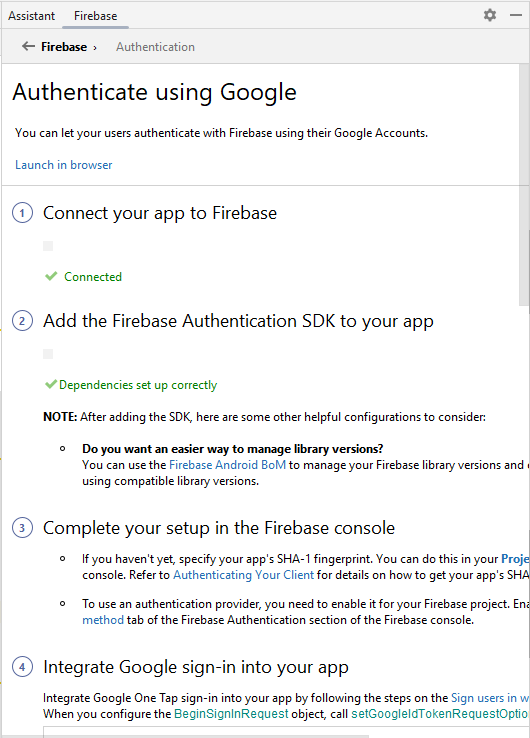
**</RelativeLayout>**

****

### **Session 9 - Firebase Database**

**Firebase**

****

****

**package com.example.firebase;**

**import androidx.annotation.NonNull;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**import com.google.android.gms.tasks.OnCompleteListener;**

**import com.google.android.gms.tasks.Task;**

**import com.google.firebase.auth.AuthResult;**

**import com.google.firebase.auth.FirebaseAuth;**

**public class MainActivity extends AppCompatActivity {**

**EditText email,password;**

**Button button;**

**FirebaseAuth firebaseAuth;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**email = findViewById(R.id.*email*);**

**password = findViewById(R.id.*password*);**

**button = findViewById(R.id.*button*);**

**firebaseAuth = FirebaseAuth.*getInstance*();**

**button.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**firebaseAuth.createUserWithEmailAndPassword(email.getText().toString(),password.getText().toString()).addOnCompleteListener(new OnCompleteListener<AuthResult>() {**

**@Override**

**public void onComplete(@NonNull Task<AuthResult> task) {**

**if(task.isSuccessful()){**

**Toast.*makeText*(MainActivity.this, "Successfull", Toast.*LENGTH\_SHORT*).show();**

**}**

**}**

**});**

**}**

**});**

**}**

**}**

***<?*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">**

**<TextView**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="167dp"**

**android:layout\_marginBottom="691dp"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="595dp"**

**android:ems="10"**

**android:inputType="textEmailAddress"**

**android:hint="Enter Email"/>**

**<EditText**

**android:id="@+id/password"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="99dp"**

**android:layout\_marginBottom="513dp"**

**android:ems="10"**

**android:inputType="textPassword"**

**android:hint="Enter Password"/>**

**<Button**

**android:id="@+id/button"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="157dp"**

**android:layout\_marginBottom="418dp"**

**android:text="Login" />**

**</RelativeLayout>**

**Realtime Database**

**mainpackage com.example.firebaserdb;**

**import androidx.annotation.NonNull;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**import com.google.android.gms.tasks.OnCompleteListener;**

**import com.google.android.gms.tasks.Task;**

**import com.google.firebase.database.DatabaseReference;**

**import com.google.firebase.database.FirebaseDatabase;**

**public class MainActivity extends AppCompatActivity {**

**EditText empid,empname, email,department, phone;**

**Button create,show;**

**DatabaseReference databaseReference;**

**Employee employee;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**empid = findViewById(R.id.*empid*);**

**empname = findViewById(R.id.*empname*);**

**email = findViewById(R.id.*email*);**

**department = findViewById(R.id.*department*);**

**phone = findViewById(R.id.*phone*);**

**create = findViewById(R.id.*create*);**

**show = findViewById(R.id.*show*);**

**employee = new Employee();**

**databaseReference = FirebaseDatabase.*getInstance*().getReference();**

**create.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**employee.setEmpid(Integer.*parseInt*(empid.getText().toString()));**

**employee.setEmpname(empname.getText().toString());**

**employee.setEmail(email.getText().toString());**

**employee.setDepartment(department.getText().toString());**

**employee.setPhone(Long.*parseLong*(phone.getText().toString()));**

**databaseReference.child("Employee").push().setValue(employee).addOnCompleteListener(MainActivity.this, new OnCompleteListener<Void>() {**

**@Override**

**public void onComplete(@NonNull Task<Void> task) {**

**if(task.isSuccessful()){**

**Toast.*makeText*(MainActivity.this, "Record added successfully", Toast.*LENGTH\_SHORT*).show();**

**}else{**

**Toast.*makeText*(MainActivity.this, "Failed to add record", Toast.*LENGTH\_SHORT*).show();**

**}**

**}**

**});**

**}**

**});**

**show.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**}**

**});**

**}**

**}**

**Employee.java**

**package com.example.firebaserdb;**

**public class Employee {**

**private int empid;**

**private String empname;**

**private String email;**

**private String department;**

**private long phone;**

**public int getEmpid() {**

**return empid;**

**}**

**public void setEmpid(int empid) {**

**this.empid = empid;**

**}**

**public String getEmpname() {**

**return empname;**

**}**

**public void setEmpname(String empname) {**

**this.empname = empname;**

**}**

**public String getEmail() {**

**return email;**

**}**

**public void setEmail(String email) {**

**this.email = email;**

**}**

**public String getDepartment() {**

**return department;**

**}**

**public void setDepartment(String department) {**

**this.department = department;**

**}**

**public long getPhone() {**

**return phone;**

**}**

**public void setPhone(long phone) {**

**this.phone = phone;**

**}**

**}**

**Activity.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">**

**<TextView**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="166dp"**

**android:layout\_marginBottom="685dp"**

**android:text="Hello World!"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<EditText**

**android:id="@+id/empid"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="102dp"**

**android:layout\_marginBottom="607dp"**

**android:ems="10"**

**android:inputType="number"**

**android:hint="Enter Employee ID"/>**

**<EditText**

**android:id="@+id/empname"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="541dp"**

**android:ems="10"**

**android:inputType="text"**

**android:hint="Enter Employee Name" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="100dp"**

**android:layout\_marginBottom="474dp"**

**android:ems="10"**

**android:inputType="textEmailAddress"**

**android:hint="Enter Email"/>**

**<EditText**

**android:id="@+id/department"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="408dp"**

**android:ems="10"**

**android:inputType="text"**

**android:hint="Enter Department" />**

**<EditText**

**android:id="@+id/phone"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="101dp"**

**android:layout\_marginBottom="339dp"**

**android:ems="10"**

**android:inputType="number"**

**android:hint="Enter Phone Number"/>**

**<Button**

**android:id="@+id/create"**

**android:layout\_width="136dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginEnd="234dp"**

**android:layout\_marginBottom="261dp"**

**android:text="Create" />**

**<Button**

**android:id="@+id/show"**

**android:layout\_width="126dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentEnd="true"**

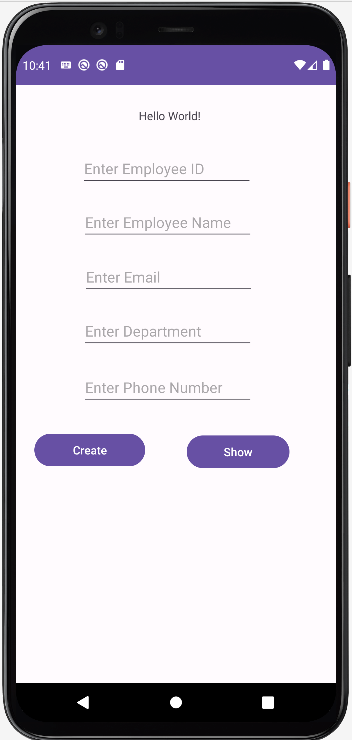
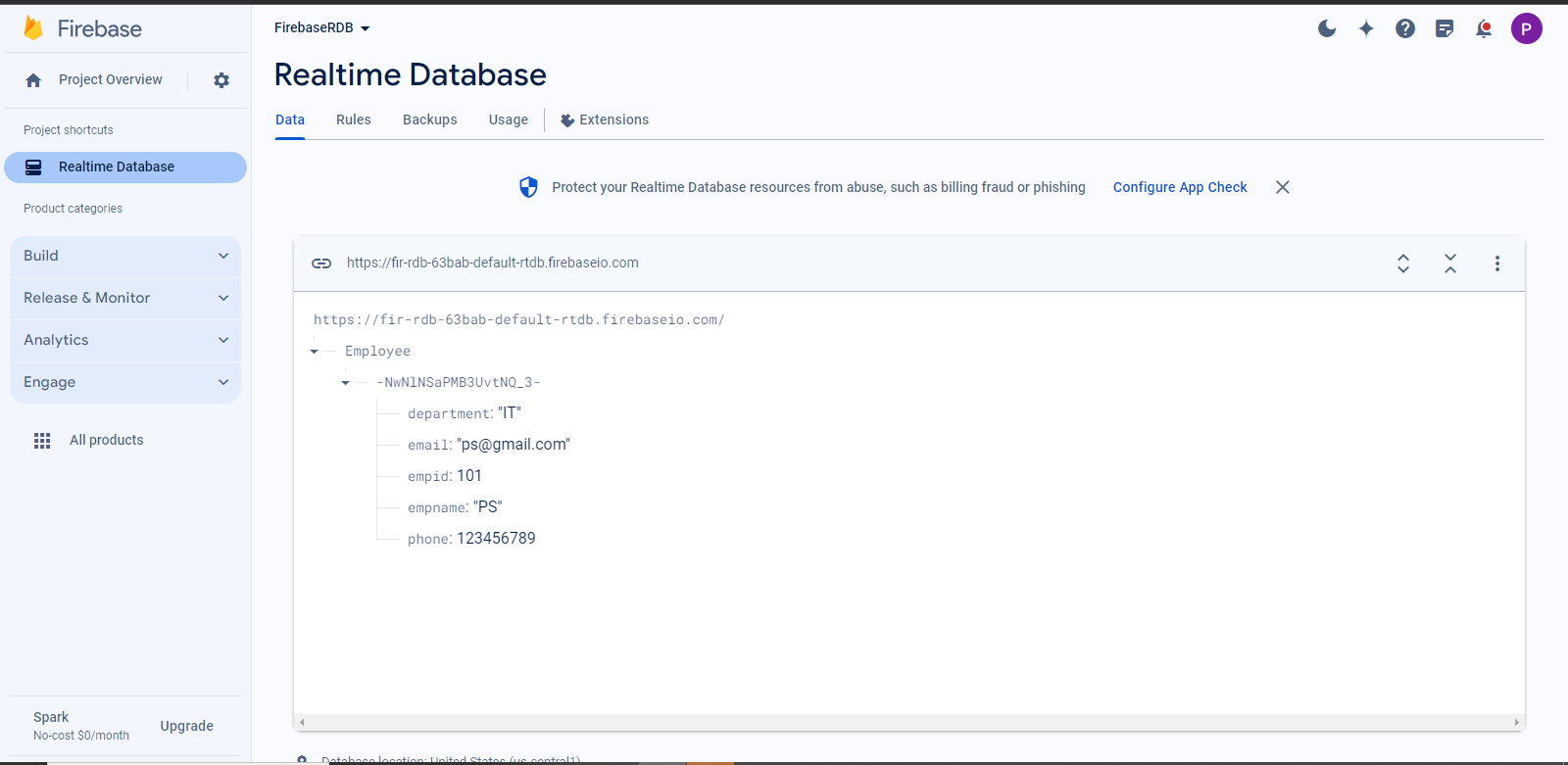
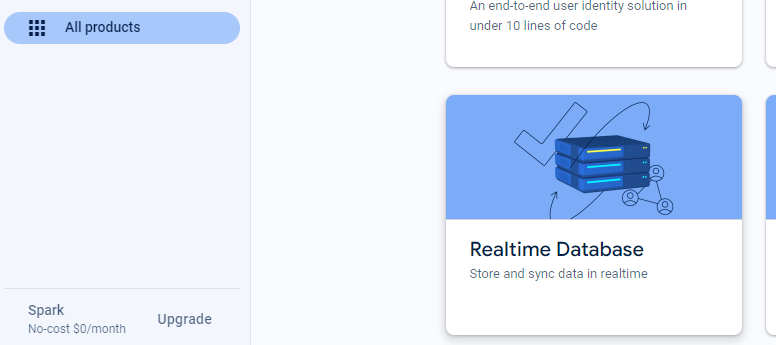
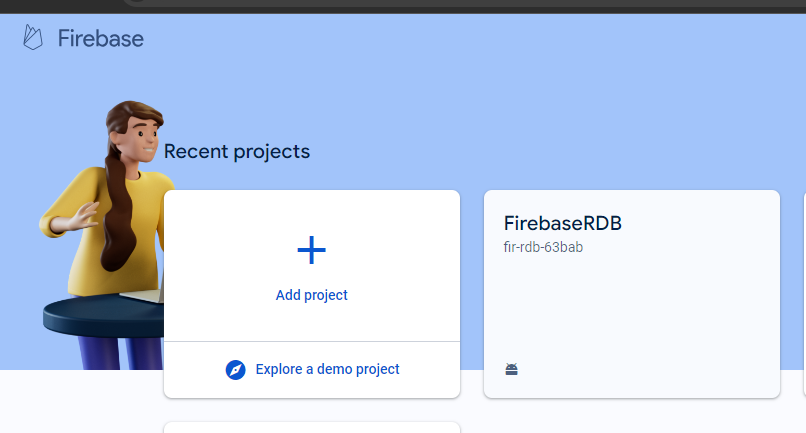
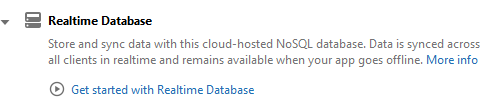
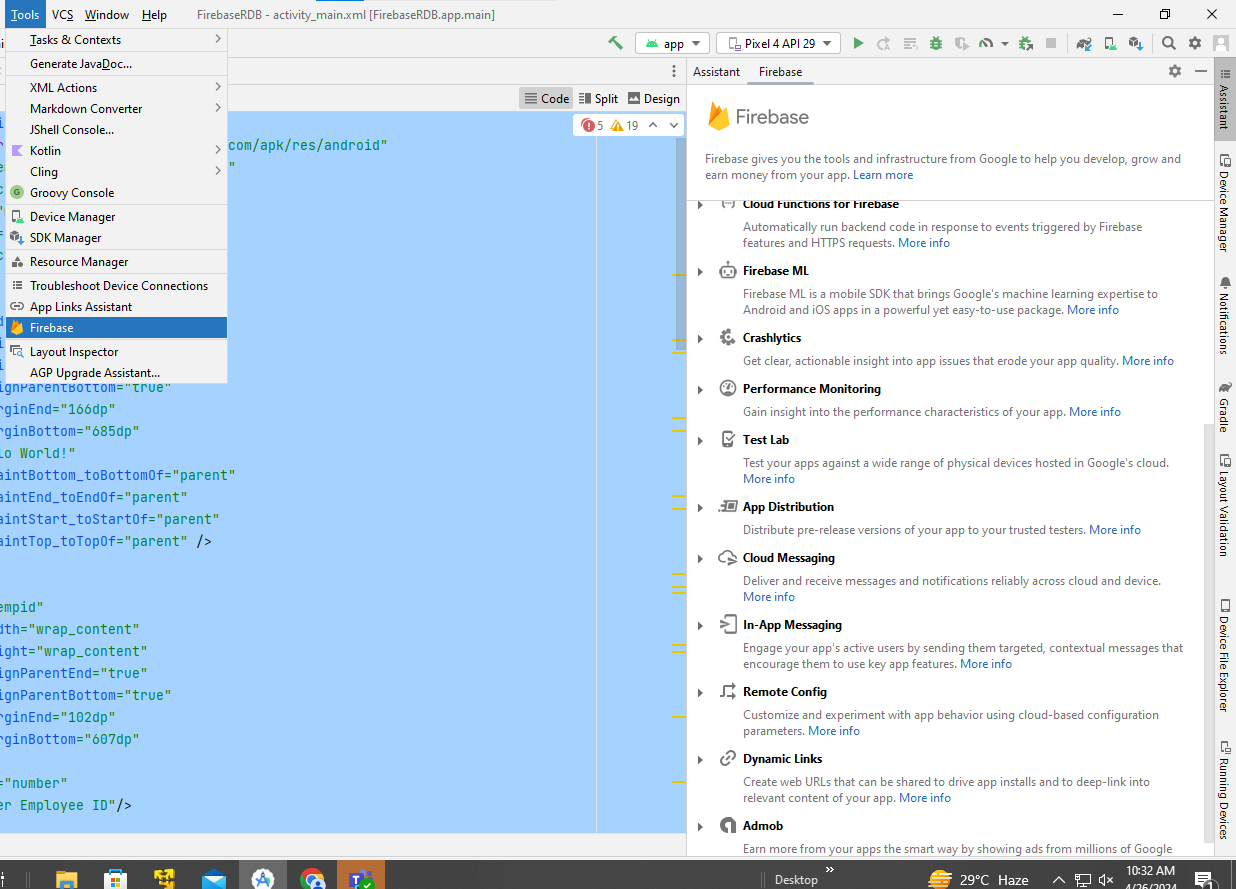
**android:layout\_alignParentBottom="true"**

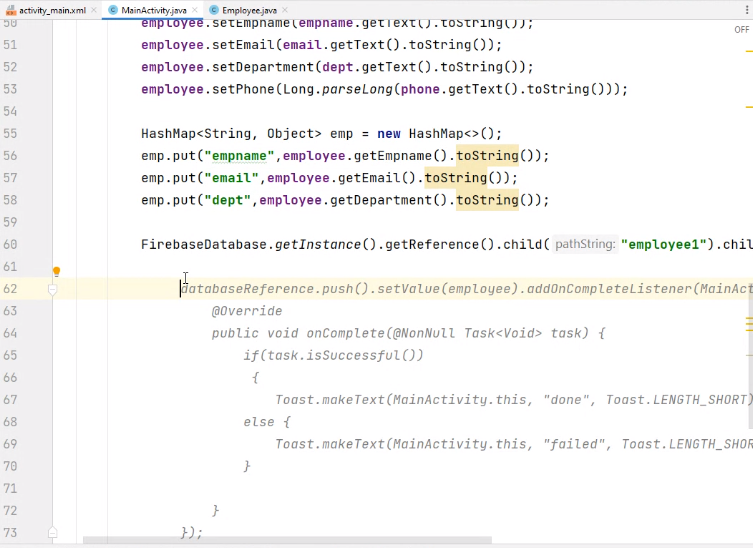
**android:layout\_marginEnd="57dp"**

**android:layout\_marginBottom="259dp"**

**android:text="Show" />**

**</RelativeLayout>**

****

****

**Show Records**

**package com.example.firebaserdb;**

**import androidx.annotation.NonNull;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**import com.google.android.gms.tasks.OnCompleteListener;**

**import com.google.android.gms.tasks.Task;**

**import com.google.firebase.database.DataSnapshot;**

**import com.google.firebase.database.DatabaseError;**

**import com.google.firebase.database.DatabaseReference;**

**import com.google.firebase.database.FirebaseDatabase;**

**import com.google.firebase.database.ValueEventListener;**

**import java.util.ArrayList;**

**import java.util.HashMap;**

**import java.util.List;**

**import java.util.Objects;**

**public class MainActivity extends AppCompatActivity {**

**EditText empid,empname, email,department, phone;**

**Button create,show;**

**DatabaseReference databaseReference;**

**Employee employee;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**empid = findViewById(R.id.*empid*);**

**empname = findViewById(R.id.*empname*);**

**email = findViewById(R.id.*email*);**

**department = findViewById(R.id.*department*);**

**phone = findViewById(R.id.*phone*);**

**create = findViewById(R.id.*create*);**

**show = findViewById(R.id.*show*);**

**employee = new Employee();**

**databaseReference = FirebaseDatabase.*getInstance*().getReference();**

**create.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**employee.setEmpid(Integer.*parseInt*(empid.getText().toString()));**

**employee.setEmpname(empname.getText().toString());**

**employee.setEmail(email.getText().toString());**

**employee.setDepartment(department.getText().toString());**

**employee.setPhone(Long.*parseLong*(phone.getText().toString()));**

***// HashMap<String, Object> emp = new HashMap<>();***

***// emp.put("empname",employee.getEmpname().toString());***

***// FirebaseDatabase.getInstance().getReference().child("employe1").child("empid");***

**databaseReference.child("Employee").push().setValue(employee).addOnCompleteListener(MainActivity.this, new OnCompleteListener<Void>() {**

**@Override**

**public void onComplete(@NonNull Task<Void> task) {**

**if(task.isSuccessful()){**

**Toast.*makeText*(MainActivity.this, "Record added successfully", Toast.*LENGTH\_SHORT*).show();**

**}else{**

**Toast.*makeText*(MainActivity.this, "Failed to add record", Toast.*LENGTH\_SHORT*).show();**

**}**

**}**

**});**

**}**

**});**

**show.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**DatabaseReference employeeRef = databaseReference.child("Employee");**

**employeeRef.addListenerForSingleValueEvent(new ValueEventListener() {**

**@Override**

**public void onDataChange(@NonNull DataSnapshot dataSnapshot) {**

**List<Employee> employees = new ArrayList<>();**

**for (DataSnapshot snapshot : dataSnapshot.getChildren()) {**

**Employee emp = snapshot.getValue(Employee.class);**

**employees.add(emp);**

**}**

***// Display the records (you can modify this part as per your requirement)***

**StringBuilder records = new StringBuilder();**

**for (Employee emp : employees) {**

**records.append("Employee ID: ").append(emp.getEmpid()).append("\n");**

**records.append("Employee Name: ").append(emp.getEmpname()).append("\n");**

**records.append("Email: ").append(emp.getEmail()).append("\n");**

**records.append("Department: ").append(emp.getDepartment()).append("\n");**

**records.append("Phone: ").append(emp.getPhone()).append("\n\n");**

**}**

**Toast.*makeText*(MainActivity.this, records.toString(), Toast.*LENGTH\_LONG*).show();**

**}**

**@Override**

**public void onCancelled(@NonNull DatabaseError error) {**

**Toast.*makeText*(MainActivity.this, "Failed to retrieve records", Toast.*LENGTH\_SHORT*).show();**

**}**

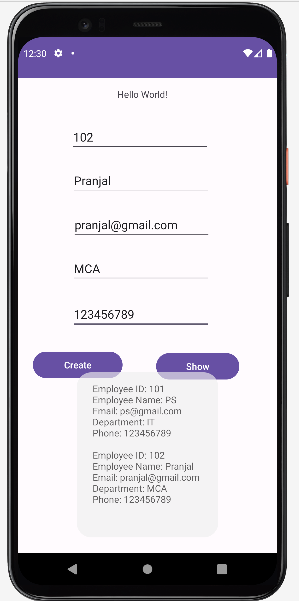
**});**

**}**

**});**

**}**

**}**

****

### **Session 10 - Internationalization and Localization**

***<?*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">**

**<TextView**

**android:id="@+id/appname"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="59dp"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentTop="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="108dp"**

**android:layout\_marginTop="55dp"**

**android:layout\_marginEnd="111dp"**

**android:layout\_marginBottom="617dp"**

**android:text="@string/app\_name"**

**android:textAlignment="center"**

**android:textSize="20sp"**

**app:layout\_constraintBottom\_toBottomOf="parent"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<EditText**

**android:id="@+id/email"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="98dp"**

**android:layout\_marginEnd="103dp"**

**android:layout\_marginBottom="532dp"**

**android:ems="10"**

**android:hint="@string/email"**

**android:inputType="textEmailAddress" />**

**<EditText**

**android:id="@+id/pwd"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="99dp"**

**android:layout\_marginEnd="102dp"**

**android:layout\_marginBottom="435dp"**

**android:ems="10"**

**android:hint="@string/password"**

**android:inputType="textPassword" />**

**<Button**

**android:id="@+id/button"**

**android:layout\_width="311dp"**

**android:layout\_height="wrap\_content"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="52dp"**

**android:layout\_marginEnd="47dp"**

**android:layout\_marginBottom="353dp"**

**android:text="@string/login" />**

**<TextView**

**android:id="@+id/textView"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="56dp"**

**android:layout\_alignParentStart="true"**

**android:layout\_alignParentEnd="true"**

**android:layout\_alignParentBottom="true"**

**android:layout\_marginStart="75dp"**

**android:layout\_marginEnd="75dp"**

**android:layout\_marginBottom="240dp"**

**android:text="@string/change\_lang" />**

**</RelativeLayout>**

**Strings**

**<resources>**

**<string name="app\_name">Internationalization and localization</string>**

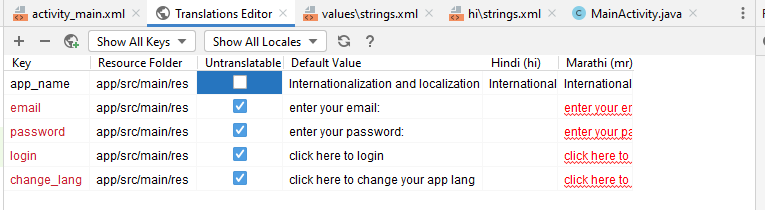
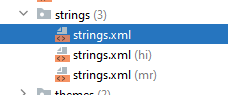
**<string name="email">enter your email: </string>**

**<string name="password">enter your password: </string>**

**<string name="login">click here to login</string>**

**<string name="change\_lang">click here to change your app lang</string>**

**</resources>**

****

**Hindi**

***<?*xml version="1.0" encoding="utf-8"*?>***

**<resources>**

**<string name="app\_name" translatable="false">अंतर्राष्ट्रीयकरण और स्थानांतरण</string>**

**<string name="email" translatable="false">अपना ईमेल दर्ज करें:</string>**

**<string name="password" translatable="false">अपना पासवर्ड दर्ज करें:</string>**

**<string name="login" translatable="false">लॉगिन करने के लिए यहां क्लिक करें</string>**

**<string name="change\_lang" translatable="false">अपनी ऐप भाषा बदलने के लिए यहां क्लिक करें</string>**

**</resources>**

**marathi**

***<?*xml version="1.0" encoding="utf-8"*?>***

**<resources>**

**<string name="app\_name" translatable="false">अंतर्राष्ट्रीयकरण आणि स्थानिकीकरण</string>**

**<string name="email" translatable="false">आपला ईमेल प्रविष्ट करा:</string>**

**<string name="password" translatable="false">आपला पासवर्ड प्रविष्ट करा:</string>**

**<string name="login" translatable="false">लॉगिन करण्यासाठी येथे क्लिक करा</string>**

**<string name="change\_lang" translatable="false">आपली अॅप भाषा बदलण्यासाठी येथे क्लिक करा</string>**

**</resources>**

**Main**

**package com.example.desgin;**

**import androidx.appcompat.app.AlertDialog;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.DialogInterface;**

**import android.content.SharedPreferences;**

**import android.content.res.Configuration;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.TextView;**

**import java.util.Locale;**

**public class MainActivity extends AppCompatActivity {**

**TextView change;**

**AlertDialog.Builder alertDialog;**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**loadLocale();**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**change = findViewById(R.id.*change*);**

**alertDialog = new AlertDialog.Builder(this);**

**change.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View view) {**

**final String[] langs = {"English","हिन्दी","मराठी"};**

**alertDialog.setSingleChoiceItems(langs, -1, new DialogInterface.OnClickListener() {**

**@Override**

**public void onClick(DialogInterface dialogInterface, int langId) {**

**if(langId == 0){**

**setLocale("en");**

**recreate();**

**}**

**else if (langId == 1){**

**setLocale("hi");**

**recreate();**

**}**

**else if (langId == 2){**

**setLocale("mr");**

**recreate();**

**}**

**}**

**});**

**alertDialog.create();**

**alertDialog.show();**

**}**

**});**

**}**

**private void setLocale(String lang){**

**Locale locale = new Locale(lang);**

**Configuration configuration = new Configuration();**

**configuration.setLocale(locale);**

**getBaseContext().getResources().updateConfiguration(configuration,getBaseContext().getResources().getDisplayMetrics());**

**SharedPreferences.Editor editor = getSharedPreferences("Settings", *MODE\_PRIVATE*).edit();**

**editor.putString("mylang",lang);**

**editor.apply();**

**}**

**private void loadLocale(){**

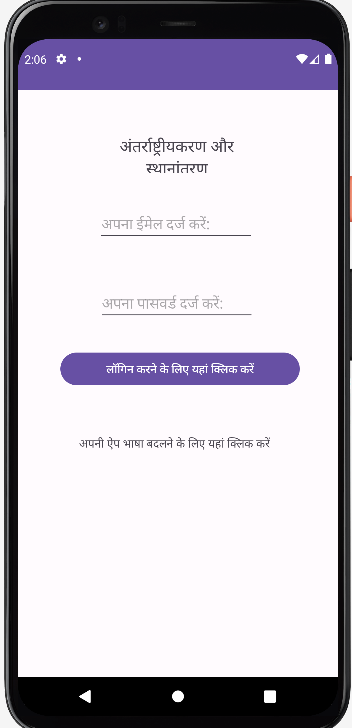
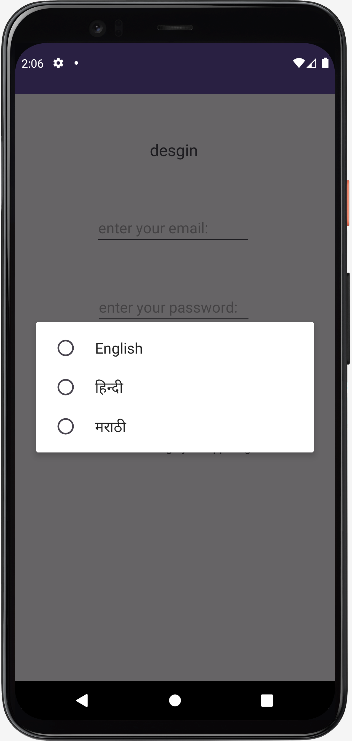
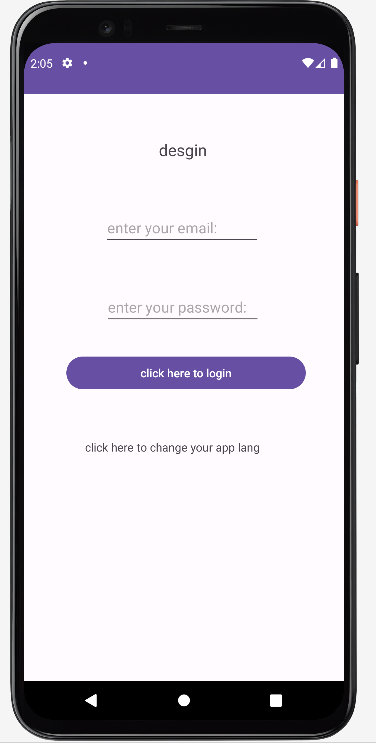
**SharedPreferences sharedPreferences = getSharedPreferences("Settings",*MODE\_PRIVATE*);**

**String lang = sharedPreferences.getString("mylang","");**

**setLocale(lang);**

**}**

**}**

****