**Android Development**

**Exp 2 Home page using grid layout.** (sample1 image res-drawable)

Xml-

<?xml version="1.0" encoding="utf-8"?>  
<GridLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:id="@+id/gridLayout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:columnCount="2"  
 android:rowCount="3"  
 android:layout\_gravity="center"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <ImageView  
 android:id="@+id/imageView1"  
 android:layout\_width="300dp"  
 android:layout\_height="200dp"  
 android:layout\_gravity="center\_horizontal"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="10dp" />  
  
 <TextView  
 android:id="@+id/textView1"  
 android:layout\_width="300dp"  
 android:layout\_height="250dp"  
 android:textSize="30sp"  
 android:gravity="center"  
 android:layout\_gravity="center\_horizontal"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="10dp" />  
  
 <Button  
 android:id="@+id/button1"  
 android:layout\_width="300dp"  
 android:text="Click Me"  
 android:textSize="25sp"  
 android:layout\_height="70dp"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="20dp" />  
</GridLayout>

Java-

package com.example.gridhome;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.GridLayout;  
import android.widget.ImageView;  
import android.widget.TextView;  
import android.widget.Toast;  
  
  
public class MainActivity extends AppCompatActivity {  
 ImageView imageView;  
 TextView textView;  
 Button button;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);

init();  
 initiate();  
 }  
 private void init()  
 {  
 imageView = findViewById(R.id.*imageView1*);  
 textView = findViewById(R.id.*textView1*);  
 button = findViewById(R.id.*button1*);  
 }  
 private void initiate()  
 {  
 imageView.setImageResource(R.drawable.*sample1*);  
 textView.setText("Hello\nAndroid Development");  
 button.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(MainActivity.this, "Android Development", Toast.*LENGTH\_SHORT*).show();  
 }  
 });  
  
 }  
}

**Exp 3 Login page (SQLite)**

Xml-

<?xml version="1.0" encoding="utf-8"?>  
  
<androidx.constraintlayout.widget.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/editTextText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:ems="10" android:hint="Username"  
 android:inputType="text"  
 app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.176" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"

android:text="Registration Form"  
 android:textColor="#7C40ED"  
 android:textSize="24sp"  
 android:textStyle="bold|italic" app:layout\_constraintBottom\_toTopOf="@+id/editTextText"  
 app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <EditText  
 android:id="@+id/editTextText2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content" android:layout\_marginTop="36dp"  
 android:ems="10"  
 android:inputType="textPassword"  
 android:hint="Password" app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497" app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextText" app:layout\_constraintVertical\_bias="0.0" />  
  
 <EditText  
 android:id="@+id/editTextText3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content" android:layout\_marginTop="36dp"  
 android:ems="10"  
 android:hint="ReType Password"  
 android:inputType="textPassword" app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextText2" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content" android:layout\_marginTop="44dp"  
 android:text="Submit"  
 android:textSize="20sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextText3" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

Java-

package com.example.databaseregistration;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.Button;  
import android.widget.Toast;  
  
import com.example.databaseregistration.DBhelper;  
  
public class MainActivity extends AppCompatActivity {  
 EditText user,pass,repass;  
 Button btn;  
  
 DBhelper db;  
 @Override  
 protected void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 btn = findViewById(R.id.*button*);  
 db = new DBhelper(this);  
 user = findViewById(R.id.*editTextText*);  
 pass = findViewById(R.id.*editTextText2*);  
 repass = findViewById(R.id.*editTextText3*);  
  
 btn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
  
 String username = user.getText().toString();  
 String password = pass.getText().toString();  
 String repassword = repass.getText().toString();  
 if(password.equals(repassword))  
 {  
 Boolean checkuser = db.checkUserName(username);  
 if(checkuser == false)  
 {  
 Boolean insert = db.insertdata(username,password);  
 if (insert == true)  
 {  
 Toast.*makeText*(MainActivity.this,"Registration Successful",Toast.*LENGTH\_SHORT*).show();  
 }  
 else {  
 Toast.*makeText*(MainActivity.this,"Registration Unsuccessful",Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 else{  
 Toast.*makeText*(MainActivity.this,"Username already exits",Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 else{  
 Toast.*makeText*(MainActivity.this,"Password do not match",Toast.*LENGTH\_SHORT*).show();  
 }  
  
  
 }  
 });  
 }  
}

DBhelper.java-

package com.example.databaseregistration;  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
  
public class DBhelper extends SQLiteOpenHelper  
{  
 public DBhelper(Context context) {  
 super(context, "Login.db", null, 1);  
 }  
 @Override  
 public void onCreate(SQLiteDatabase db) {  
 db.execSQL("create table users(username Text primary key , password Text)");  
 }  
  
 @Override  
 public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {  
 db.execSQL("drop table if exists users");  
 }  
 public Boolean insertdata(String user,String password)  
 {  
 SQLiteDatabase db = this.getWritableDatabase();  
  
 ContentValues contentValues = new ContentValues();  
 contentValues.put("username",user);  
 contentValues.put("password",password);  
  
 long result = db.insert("users",null,contentValues); if(result==-1)  
 {  
 return false;//insertion is failed  
 }  
 else{ return true;  
 }  
 }  
  
 public Boolean checkUserName(String user)  
 {  
 SQLiteDatabase db = this.getWritableDatabase();  
 Cursor cursor = db.rawQuery("select \* from users where username=?", new String[]{user});  
 if(cursor.getCount()>0)  
 {  
 return true;  
 }  
 else  
 {  
 return false;  
 }  
  
 }  
  
}

After run and entering data-> device manager- file explorer- data-data- package name (project name)- database-login.db - save

Website SQLite - <https://sqliteviewer.app/> (open .db file – users)

**Exp 3 Login page (firebase)**

**Exp 4 Registration application**

Main xml-

<?xml version="1.0" encoding="utf-8"?><!-- activity\_main.xml -->  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textViewSubject"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:text="Select Subject:" />  
  
 <Spinner  
 android:id="@+id/spinnerSubject"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/textViewSubject"  
 android:layout\_marginTop="10dp"  
 android:minHeight="48dp" />  
  
 <TextView  
 android:id="@+id/textViewGender"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/spinnerSubject"  
 android:layout\_marginTop="20dp"  
 android:text="Gender:" />  
  
  
 <RadioGroup  
 android:id="@+id/radioGroupGender"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/textViewGender"  
 android:orientation="horizontal">  
  
 <RadioButton  
 android:id="@+id/radioButtonMale"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Male" />  
  
 <RadioButton  
 android:id="@+id/radioButtonFemale"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Female" />  
 </RadioGroup>  
  
 <TextView  
 android:id="@+id/textViewQualification"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
  
 android:layout\_below="@id/radioGroupGender"  
 android:layout\_marginTop="20dp"  
 android:text="Qualification:" />  
  
 <CheckBox  
 android:id="@+id/checkBoxBachelor"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/textViewQualification"  
 android:layout\_marginTop="10dp"  
 android:text="Bachelor's Degree" />  
  
 <CheckBox  
 android:id="@+id/checkBoxMaster"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/checkBoxBachelor"  
 android:layout\_marginTop="10dp"  
 android:text="Master's Degree" />  
  
 <Button  
 android:id="@+id/buttonSubmit"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/checkBoxMaster"  
  
 android:layout\_marginTop="20dp"  
 android:text="Submit" />  
  
</RelativeLayout>

Main java-

package com.example.registrationapplication;  
import androidx.appcompat.app.AppCompatActivity;  
import android.content.Intent;  
import android.os.Bundle;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.Button;  
import android.widget.CheckBox;  
import android.widget.RadioButton;  
import android.widget.RadioGroup;  
import android.widget.Spinner;  
import android.widget.Toast;  
import java.util.ArrayList;  
import java.util.List;  
public class MainActivity extends AppCompatActivity {  
 private Spinner spinnerSubject;  
 private RadioGroup radioGroupGender;  
 private CheckBox checkBoxBachelor, checkBoxMaster;  
 private Button buttonSubmit;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 spinnerSubject = findViewById(R.id.*spinnerSubject*);  
 radioGroupGender = findViewById(R.id.*radioGroupGender*);  
 checkBoxBachelor = findViewById(R.id.*checkBoxBachelor*);  
 checkBoxMaster = findViewById(R.id.*checkBoxMaster*);  
 buttonSubmit = findViewById(R.id.*buttonSubmit*);  
  
 List<String> subjects = new ArrayList<>();  
 subjects.add("Mathematics");  
 subjects.add("Science");  
 subjects.add("History");  
 ArrayAdapter<String> adapter = new ArrayAdapter<>(this,  
 android.R.layout.*simple\_spinner\_item*, subjects);  
 adapter.setDropDownViewResource(android.R.layout.*simple\_spinner\_dropdown\_item*);  
 spinnerSubject.setAdapter(adapter);  
  
 buttonSubmit.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 submitForm();  
 }  
 });  
 }  
 private void submitForm() {  
  
 String selectedSubject = spinnerSubject.getSelectedItem().toString();  
  
 int selectedGenderId = radioGroupGender.getCheckedRadioButtonId();  
 RadioButton selectedGender = findViewById(selectedGenderId);  
 String gender = selectedGender.getText().toString();  
  
 StringBuilder qualifications = new StringBuilder();  
 if (checkBoxBachelor.isChecked()) {  
 qualifications.append("Bachelor's Degree, ");  
 }  
 if (checkBoxMaster.isChecked()) {  
 qualifications.append("Master's Degree, ");  
 }  
 if (qualifications.length() > 0) {  
 qualifications.delete(qualifications.length() - 2, qualifications.length());  
 }  
  
 Intent intent = new Intent(MainActivity.this, DisplayDataActivity.class);  
 intent.putExtra("subject", selectedSubject);  
 intent.putExtra("gender", gender);  
 intent.putExtra("qualifications", qualifications.toString());  
 startActivity(intent);  
 }  
}

DisplayDataActivity.java-

package com.example.registrationapplication;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.widget.TextView;  
public class DisplayDataActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_display\_data*);  
 TextView textViewDisplayData = findViewById(R.id.*textViewDisplayData*);  
 Bundle extras = getIntent().getExtras();  
 if (extras != null) {  
 String subject = extras.getString("subject");  
 String gender = extras.getString("gender");  
 String qualifications = extras.getString("qualifications");  
 String message = "Subject: " + subject + "\nGender: " + gender + "\nQualification: " +  
 qualifications;  
 textViewDisplayData.setText(message);  
 }  
 }  
}

Activity\_display\_data.xml-

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:gravity="center"  
 tools:context=".DisplayDataActivity">  
 <TextView  
 android:id="@+id/textViewDisplayData"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textSize="18sp"  
 android:text="Hello"  
 android:layout\_gravity="center"  
 android:padding="16dp"/>  
</LinearLayout>

**Exp 5 Dialog box & Menu**

Xml-

<!-- activity\_main.xml -->  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <Button  
 android:id="@+id/btnPopup"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Show Popup Dialog"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="50dp"/>  
  
 <Button  
 android:id="@+id/btnOption"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Show Option Menu"  
 android:layout\_below="@id/btnPopup"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="20dp"/>  
  
 <Button  
 android:id="@+id/btnContext"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Show Context Menu"  
 android:layout\_below="@id/btnOption"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="20dp"/>  
  
</RelativeLayout>

popup\_dialog.xml – res-layout-

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
  
 <TextView  
 android:id="@+id/textPopup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:gravity="center"  
 android:padding="16dp"  
 android:text="This is a Popup Dialog"  
 android:textColor="@android:color/black"  
 android:textSize="18sp" />  
  
 <Button  
 android:id="@+id/btnClosePopup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Close" />  
  
</LinearLayout>

option\_menu.xml - res-new-Android res dir – menu – menu res file-

<?xml version="1.0" encoding="utf-8"?>  
<menu xmlns:android="http://schemas.android.com/apk/res/android">  
 <item  
 android:id="@+id/menu\_item\_1"  
 android:title="Option 1"/>  
 <item  
 android:id="@+id/menu\_item\_2"  
 android:title="Option 2"/>  
</menu>

context\_menu.xml - res-new-Android res dir – menu – menu res file-

<?xml version="1.0" encoding="utf-8"?>  
<menu xmlns:android="http://schemas.android.com/apk/res/android">  
 <item  
 android:id="@+id/context\_item\_1"  
 android:title="Context Item 1"/>  
 <item  
 android:id="@+id/context\_item\_2"  
 android:title="Context Item 2"/>  
</menu>

Java-

package com.example.dialogboxmenu;  
  
import android.os.Bundle;  
import android.view.ContextMenu;  
import android.view.MenuItem;  
import android.view.View;  
import android.widget.Button;  
import android.widget.PopupMenu;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AlertDialog;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
 private Button btnPopup, btnOption, btnContext;  
  
 @Override  
  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 btnPopup = findViewById(R.id.*btnPopup*);  
 btnOption = findViewById(R.id.*btnOption*);  
 btnContext = findViewById(R.id.*btnContext*);  
 btnPopup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 showPopupDialog(v);  
 }  
 });  
 btnOption.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 showOptionMenu(v);  
 }  
 });  
 registerForContextMenu(btnContext);  
 }  
  
 private void showPopupDialog(View v) {  
 AlertDialog.Builder builder = new AlertDialog.Builder(this);  
 View dialogView = getLayoutInflater().inflate(R.layout.*popup\_dialog*, null);  
 builder.setView(dialogView);  
 AlertDialog alertDialog = builder.create();  
 alertDialog.show();  
 Button btnClosePopup = dialogView.findViewById(R.id.*btnClosePopup*);  
 btnClosePopup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 alertDialog.dismiss();  
 }  
 });  
 }  
 private void showOptionMenu(View v) {  
 PopupMenu popupMenu = new PopupMenu(this, v);  
 popupMenu.getMenuInflater().inflate(R.menu.*option\_menu*, popupMenu.getMenu());  
 popupMenu.setOnMenuItemClickListener(new  
 PopupMenu.OnMenuItemClickListener() {  
 @Override  
 public boolean onMenuItemClick(MenuItem item) {  
 if (item.getItemId() == R.id.*menu\_item\_1*) {  
 showToast("Option 1 selected");  
 return true;  
 } else if (item.getItemId() == R.id.*menu\_item\_2*) {  
 showToast("Option 2 selected");  
 return true;  
 }  
 return false;  
 }  
});  
 popupMenu.show();  
 }  
  
 @Override  
 public void onCreateContextMenu(ContextMenu menu, View v,  
ContextMenu.ContextMenuInfo menuInfo) {  
 super.onCreateContextMenu(menu, v, menuInfo);  
 getMenuInflater().inflate(R.menu.*context\_menu*, menu);  
 }  
  
 public boolean onContextItemSelected(MenuItem item) {  
 if (item.getItemId() == R.id.*context\_item\_1*) {  
 showToast("Context item 1 selected");  
 return true;  
 } else if (item.getItemId() == R.id.*context\_item\_2*) {  
 showToast("Context item 2 selected");  
 return true;  
 }  
 return super.onContextItemSelected(item);  
 }  
  
 private void showToast(String message) {  
 Toast.*makeText*(this, message, Toast.*LENGTH\_SHORT*).show();  
 }  
}

**Exp 6 Show website using web view.**

Manifest-

<uses-permission  
 android:name="android.permission.INTERNET">  
</uses-permission>

Xml-

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <WebView  
 android:id="@+id/webView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"/>  
  
</RelativeLayout>

Java-

package com.example.websitewebview;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.webkit.WebView;  
import android.webkit.WebViewClient;  
public class MainActivity extends AppCompatActivity {  
 private WebView webView;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 webView = findViewById(R.id.*webView*);  
 webView.setWebViewClient(new WebViewClient());  
 webView.loadUrl("https://www.google.co.in/");  
 }  
}

**Exp 7 Image slider to show image.** (images- sample1,sample2 res-drawable)

Gradle setting –

pluginManagement **{** repositories **{** google **{** content **{** includeGroupByRegex("com\\.android.\*")  
 includeGroupByRegex("com\\.google.\*")  
 includeGroupByRegex("androidx.\*")  
 **}  
 }** mavenCentral()  
 gradlePluginPortal()  
 *maven* ("https://jitpack.io" )  
 **}  
}**dependencyResolutionManagement **{** *repositoriesMode*.set(RepositoriesMode.*FAIL\_ON\_PROJECT\_REPOS*)  
 repositories **{** google()  
 mavenCentral()  
 *maven* ("https://jitpack.io" )  
 **}  
}***rootProject*.*name* = "Exp7"  
include(":app")

Gradle Build app- dependency- sync after changes.

*implementation*("androidx.appcompat:appcompat:1.6.1")  
*implementation*("com.google.android.material:material:1.11.0")  
*implementation*("androidx.constraintlayout:constraintlayout:2.1.4")  
*testImplementation*("junit:junit:4.13.2")  
*androidTestImplementation*("androidx.test.ext:junit:1.1.5")  
*androidTestImplementation*("androidx.test.espresso:espresso-core:3.5.1")  
*implementation*("androidx.appcompat:appcompat:1.6.1")  
*implementation*("com.google.android.material:material:1.11.0")  
*implementation*("androidx.constraintlayout:constraintlayout:2.1.4")  
*testImplementation*("junit:junit:4.13.2")  
*androidTestImplementation*("androidx.test.ext:junit:1.1.5")  
*androidTestImplementation*("androidx.test.espresso:espresso-core:3.5.1")  
*implementation*("com.github.denzcoskun:ImageSlideshow:0.1.2")

Xml-

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <com.denzcoskun.imageslider.ImageSlider  
 android:id="@+id/imageslider"  
 android:layout\_width="300dp"  
 android:layout\_height="0dp"  
 android:layout\_marginBottom="408dp"  
 app:iss\_auto\_cycle="true"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.495"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/textView" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="69dp"  
 android:layout\_marginEnd="60dp"  
 android:layout\_marginBottom="22dp"  
 android:text="Image Slider"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toTopOf="@+id/imageslider"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.634"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.5"  
 />  
</androidx.constraintlayout.widget.ConstraintLayout>

Java-

package com.example.imageslider;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import com.denzcoskun.imageslider.ImageSlider;  
import com.denzcoskun.imageslider.constants.ScaleTypes;  
import com.denzcoskun.imageslider.models.SlideModel;  
import java.util.ArrayList;  
import java.util.List;  
public class MainActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 ImageSlider imageSlider=findViewById(R.id.*imageslider*);  
 List<SlideModel> slideModelslist=new ArrayList<>();  
 slideModelslist.add(new SlideModel(R.drawable.*sample1*,"1", ScaleTypes.*FIT*));  
 slideModelslist.add(new SlideModel(R.drawable.*sample2*,"2",ScaleTypes.*FIT*));  
 imageSlider.setImageList(slideModelslist);  
 }  
}

**EXP 8 Media Player** (music.mp3 res-raw)

Res right click- android resource directory-raw select -then copy mp3 file to raw ani tyla music nav dene

Xml-

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 tools:layout\_editor\_absoluteX="-16dp"  
 tools:layout\_editor\_absoluteY="-203dp">  
  
 <TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Media Player "  
 android:textSize="32sp"  
 android:textColor="@color/black" />  
 <Button  
 android:id="@+id/Playbtn"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:onClick="Music"  
 android:text="Play" />  
  
 <Button  
 android:id="@+id/Pausebtn"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:onClick="Music"  
 android:text="Pause" />  
  
 <Button  
 android:id="@+id/Stopbtn"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:onClick="Music"  
 android:text="Stop" />  
   
 </LinearLayout>  
</androidx.constraintlayout.widget.ConstraintLayout>

Java-

package com.example.mediaplayer;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.media.MediaPlayer;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
public class MainActivity extends AppCompatActivity {  
 MediaPlayer mediaPlayer;  
 Button playBtn, pauseBtn, stopBtn;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 playBtn = findViewById(R.id.*Playbtn*);  
 pauseBtn = findViewById(R.id.*Pausebtn*);  
 stopBtn = findViewById(R.id.*Stopbtn*);  
 playBtn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 playMusic();  
 }  
 });  
 pauseBtn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 pauseMusic();  
 }  
 });  
 stopBtn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 stopMusic();  
 }  
 });  
 }  
 private void playMusic() {  
 if (mediaPlayer == null) {  
 mediaPlayer = MediaPlayer.*create*(this, R.raw.*music*);  
 mediaPlayer.setOnCompletionListener(new MediaPlayer.OnCompletionListener() {  
 @Override  
 public void onCompletion(MediaPlayer mediaPlayer) {  
 stopMusic();  
 }  
 });  
 }  
 mediaPlayer.start();  
 playBtn.setEnabled(false);  
 pauseBtn.setEnabled(true);  
 stopBtn.setEnabled(true);  
 }  
 private void pauseMusic() {  
 if (mediaPlayer != null && mediaPlayer.isPlaying()) {  
 mediaPlayer.pause();  
 playBtn.setEnabled(true);  
 pauseBtn.setEnabled(false);  
 stopBtn.setEnabled(true);  
 }  
 }  
 private void stopMusic() {  
 if (mediaPlayer != null) {  
 mediaPlayer.release();  
 mediaPlayer = null;  
 playBtn.setEnabled(true);  
 pauseBtn.setEnabled(false);  
 stopBtn.setEnabled(false);  
 }  
 }  
}

**Exp 9 File handling**

Xml-

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">

<TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Internel Storage LAB 9"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.498"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.58" />

<EditText  
 android:id="@+id/edit\_text"  
 android:layout\_width="match\_parent"  
 android:layout\_height="100dp"  
 android:hint="TYPE YOUR TEXT HERE TO STORE"  
 android:layout\_margin="40dp"  
 app:layout\_constraintTop\_toTopOf="parent"  
 tools:layout\_editor\_absoluteX="0dp" />  
 <Button  
 android:id="@+id/btnSave"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="68dp"  
 android:text="SAVE"  
 android:onClick="Save"  
 app:layout\_constraintBottom\_toTopOf="@+id/textView"  
 app:layout\_constraintEnd\_toEndOf="@+id/textView"  
 app:layout\_constraintHorizontal\_bias="0.48"  
 app:layout\_constraintStart\_toStartOf="@+id/textView" />  
 <Button  
 android:id="@+id/btnload"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="28dp"  
 android:text="load"  
 android:onClick="Load"  
 app:layout\_constraintBottom\_toTopOf="@+id/btnSave"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintEnd\_toEndOf="@+id/btnSave"  
 app:layout\_constraintStart\_toStartOf="@+id/btnSave" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

Java-

package com.example.filehandling;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.Toast;  
import java.io.BufferedReader;  
import java.io.FileInputStream;  
import java.io.FileNotFoundException;  
import java.io.FileOutputStream;  
import java.io.IOException;  
import java.io.InputStreamReader;  
  
public class MainActivity extends AppCompatActivity {  
 private static final String *FILE\_NAME* = "example.txt";  
 EditText mEditText;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 mEditText = findViewById(R.id.*edit\_text*);  
 }  
 public void Save(View view) {  
 String text = mEditText.getText().toString();

FileOutputStream fos = null;  
 try { fos=openFileOutput(*FILE\_NAME*,*MODE\_PRIVATE*); fos.write(text.getBytes());  
 mEditText.getText().clear();  
 Toast.*makeText*(this,"Saved to "+getFilesDir()+"/"+*FILE\_NAME*,Toast.*LENGTH\_SHORT*).show();  
 } catch (FileNotFoundException e) {

throw new RuntimeException(e);  
 } catch (IOException e) {  
 throw new RuntimeException(e);  
 }finally{  
 if(fos != null){  
 try{  
 fos.close();  
 } catch (IOException e) {  
 throw new RuntimeException(e);  
 }  
 }  
 }  
 }  
 public void Load(View view) { FileInputStream fis = null;  
 try {  
 fis = openFileInput(*FILE\_NAME*);  
 InputStreamReader isr = new InputStreamReader(fis); BufferedReader br = new BufferedReader(isr);

StringBuilder sb = new StringBuilder();  
 String text;  
 while((text=br.readLine())!=null){ sb.append(text).append("\n");  
 }  
 mEditText.setText(sb.toString());  
 } catch (FileNotFoundException e) { throw new RuntimeException(e);  
 } catch (IOException e) {  
 throw new RuntimeException(e);  
 } finally { if(fis!=null){ try {  
 fis.close();  
 } catch (IOException e) {  
 throw new RuntimeException(e);  
 }  
 }  
 }  
 }  
}

**Exp 10 Google Map and GPS**

Website- google cloud console- new project- give name & create -open -api overview-credentials-create API key- copy api …Library- Map sdk for android - enable

Manifest.xml-

<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools">  
   
 <uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION"/>  
 <uses-permission android:name="android.permission.INTERNET"/>  
 <uses-permission android:name="android.permission.ACCESS\_NETWORK\_STATE"/>  
 <uses-permission android:name="android.permission.ACCESS\_COARSE\_LOCATION"/>  
  
 <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.Gmap"  
 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>  
  
 <meta-data  
 android:name="com.google.android.geo.API\_KEY"  
 android:value="AIzaSyBGfaSN4dhaM53NB8\_V6e7GwqyXxpEuU3Y"/>  
 </application>  
  
</manifest>

Gradle build app – add dependencies

*implementation*("com.google.android.gms:play-services-maps:18.0.1")

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">  
  
 <fragment  
 android:id="@+id/id\_map"  
 android:name="com.google.android.gms.maps.SupportMapFragment"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"/>  
  
</RelativeLayout>

Java-

package com.example.gmap;  
  
import androidx.annotation.NonNull;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
import com.google.android.gms.maps.CameraUpdateFactory;  
import com.google.android.gms.maps.GoogleMap;  
import com.google.android.gms.maps.OnMapReadyCallback;  
import com.google.android.gms.maps.SupportMapFragment;  
import com.google.android.gms.maps.model.LatLng;  
import com.google.android.gms.maps.model.MarkerOptions;  
  
public class MainActivity extends AppCompatActivity implements OnMapReadyCallback {  
private GoogleMap gMap;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager().findFragmentById(R.id.*id\_map*);  
 mapFragment.getMapAsync(this);  
 }  
 @Override  
 public void onMapReady(@NonNull GoogleMap googleMap) {  
 LatLng location = new LatLng(18.5204, 73.8567);  
 googleMap.addMarker(new MarkerOptions().position(location).title("Pune"));  
 googleMap.moveCamera(CameraUpdateFactory.*newLatLngZoom*(location,12));  
 }  
}

Video Player ( video in res-raw)

Same as media player

Xml-

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_centerHorizontal="true"  
 android:text="VideoView Demo"  
 android:textColor="@android:color/holo\_blue\_dark"  
 android:textSize="32sp" />  
  
 <FrameLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/textView">  
  
 <VideoView  
 android:id="@+id/videoView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content" />  
 </FrameLayout>  
</RelativeLayout>

Java-

package com.example.videoplayer;  
  
import android.os.Bundle;  
import android.widget.MediaController;  
import android.widget.VideoView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 VideoView videoView = findViewById(R.id.*videoView*);  
 videoView.setVideoPath("android.resource://"+getPackageName()+"/"+ R.raw.*video*);  
 MediaController mediaController = new MediaController(this);  
 mediaController.setAnchorView(videoView);  
 videoView.setMediaController(mediaController);  
 }  
}