**PRACTICAL 15**

**Aim: Create an app that allows users to enter notes Save the notes in a SQLite database, Create an app that stores data in an SQL database, Display the data in a Recycler View, Allow users to add, delete, and edit data items, Add a content provider for your SQLite database.**

**Code:**

**JAVA FILE: (MainActivity.java)**

package com.example.practical15;

import androidx.appcompat.app.AppCompatActivity;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;

import android.annotation.SuppressLint;

import android.content.Intent;

import android.os.Bundle;

import android.util.Log;

import android.view.View;

import android.widget.Toast;

import com.example.practical15.modules.Note;

import com.example.practical15.modules.NotesAdapter;

import com.example.practical15.modules.SQLHandler;

import com.example.practical15.modules.ShowNote;

import com.google.android.material.floatingactionbutton.FloatingActionButton;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {

SQLHandler sqlHandler;

FloatingActionButton floatingActionButton;

RecyclerView notesList;

NotesAdapter notesListAdapter;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

sqlHandler = new SQLHandler(this, "MyDB",null, 1);

setContentView(R.layout.activity\_main);

floatingActionButton = findViewById(R.id.newNote);

notesList = findViewById(R.id.recyclerView);

notesList.setLayoutManager(new LinearLayoutManager(this));

notesListAdapter = new NotesAdapter(sqlHandler, MainActivity.this, getSupportFragmentManager());

notesList.setAdapter(notesListAdapter);

}

@Override

protected void onStart() {

super.onStart();

floatingActionButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

startActivity(new Intent(MainActivity.this, AddFacility.class));

}

});

notesListAdapter.sync();

}

}

**JAVA FILE: (Note.java)**

package com.example.practical15.modules;

import java.time.LocalDateTime;

public class Note {

public String title, description;

public LocalDateTime datetime;

public Note(String name, String description, LocalDateTime datetime) {

this.title = name;

this.description = description;

this.datetime = datetime;

}

}

**JAVA FILE: (NotesAdpater.java)**

package com.example.practical15.modules;

import android.app.Activity;

import android.content.Context;

import android.content.Intent;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import androidx.fragment.app.FragmentActivity;

import androidx.fragment.app.FragmentManager;

import androidx.recyclerview.widget.RecyclerView;

import com.example.practical15.EditFacility;

import com.example.practical15.MainActivity;

import com.example.practical15.R;

import java.time.format.DateTimeFormatter;

import java.util.ArrayList;

public class NotesAdapter extends RecyclerView.Adapter<NotesAdapter.ViewHolder> {

ArrayList<Note> dataset = new ArrayList<>();

SQLHandler sqlHandler;

Context context;

FragmentManager fragmentManager;

public NotesAdapter(SQLHandler sqlHandler, Context context, FragmentManager fragmentManager) {

this.sqlHandler = sqlHandler;

this.context = context;

this.fragmentManager = fragmentManager;

}

public void sync() {

sqlHandler.fetch(dataset);

notifyDataSetChanged();

}

public static class ViewHolder extends RecyclerView.ViewHolder {

TextView titleView, modifiedView;

Button editNote, deleteNote;

public ViewHolder(View itemView) {

super(itemView);

this.titleView = itemView.findViewById(R.id.title);

this.modifiedView = itemView.findViewById(R.id.modified);

this.editNote = itemView.findViewById(R.id.editNote);

this.deleteNote = itemView.findViewById(R.id.deleteNote);

}

public TextView getTitleView(){

return this.titleView;

}

public TextView getModifiedView(){

return this.modifiedView;

}

public Button getEditNote(){

return this.editNote;

}

public Button getDeleteNote(){

return this.deleteNote;

}

}

@Override

public ViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {

View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.note\_ticket, parent, false);

return new ViewHolder(view);

}

@Override

public void onBindViewHolder(ViewHolder holder, int position) {

holder.getTitleView().setText(dataset.get(position).title); holder.getModifiedView().setText(dataset.get(position).datetime.format(DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm")));

holder.getDeleteNote().setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

sqlHandler.Delete(dataset.get(holder.getAdapterPosition()).title, dataset.get(holder.getAdapterPosition()).description);

sync();

}

});

holder.getEditNote().setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

context.startActivity(new Intent(context, EditFacility.class).putExtra("title", dataset.get(holder.getAdapterPosition()).title).putExtra("description", dataset.get(holder.getAdapterPosition()).description).putExtra("date", dataset.get(holder.getAdapterPosition()).datetime.toString()));

}

});

holder.itemView.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

FragmentManager manager = ((AppCompatActivity)context).getSupportFragmentManager();

ShowNote showNote = new ShowNote(dataset.get(holder.getAdapterPosition()).title, dataset.get(holder.getAdapterPosition()).description, dataset.get(holder.getAdapterPosition()).datetime.format(DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm")));

showNote.showNow(fragmentManager, "NoteEdit");

}

});

}

@Override

public int getItemCount() {

return dataset.size();

}

}

**JAVA FILE: (ShowNote.java)**

package com.example.practical15.modules;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.TextView;

import androidx.annotation.NonNull;

import androidx.annotation.Nullable;

import com.example.practical15.R;

import com.google.android.material.bottomsheet.BottomSheetDialogFragment;

public class ShowNote extends BottomSheetDialogFragment {

String title, body, date;

public ShowNote(String title, String body, String date) {

this.body = body;

this.title = title;

this.date = date;

}

@Override

public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {

View view = inflater.inflate(R.layout.show\_notes, null);

TextView titleView = view.findViewById(R.id.title);

TextView bodyView = view.findViewById(R.id.body);

TextView dateView = view.findViewById(R.id.date);

titleView.setText(title);

bodyView.setText(body);

dateView.setText(date);

return view;

}

}

**JAVA FILE: (SQLHandler.java)**

package com.example.practical15.modules;

import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import java.time.LocalDateTime;

import java.util.ArrayList;

public class SQLHandler extends SQLiteOpenHelper {

public SQLHandler(Context context, String name, SQLiteDatabase.CursorFactory factory, int version) {

super(context, name, factory, version);

}

@Override

public void onCreate(SQLiteDatabase sqLiteDatabase) {

sqLiteDatabase.execSQL("CREATE TABLE IF NOT EXISTS Notes(Title var\_char(100) NOT NULL, Description Text, Last\_Modified Datetime NOT NULL)");

}

public void Insert(String title, String description) {

getWritableDatabase().execSQL(String.format("INSERT INTO Notes VALUES( '%s', '%s', '%s')", title, (description.isEmpty())? " ": description, LocalDateTime.now() ));

}

public void Edit(String title, String oldTitle ,String description, String oldDescription, String oldDate) {

getWritableDatabase().execSQL(String.format("UPDATE Notes SET Title = '%s', Description = '%s', Last\_Modified = '%s' where Title = '%s' and Description = '%s' and Last\_Modified = '%s'", title, description, LocalDateTime.now(), oldTitle, oldDescription, LocalDateTime.parse(oldDate)));

}

public void Delete(String title, String description) {

getWritableDatabase().execSQL(String.format("DELETE FROM Notes WHERE Title= '%s' and Description = '%s'", title, description));

}

@Override

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

public void fetch(ArrayList<Note> arrayList) {

Cursor cursor = getReadableDatabase().rawQuery("SELECT \* FROM Notes", null);

cursor.moveToFirst();

arrayList.clear();

if(cursor.getCount() == 0) {

return;

} else {

for (int i = 0; i < cursor.getCount(); i++) {

arrayList.add(new Note(cursor.getString(0), cursor.getString(1), LocalDateTime.parse(cursor.getString(2))));

cursor.moveToNext();

}

}

}

}

**JAVA FILE: (AddFacility.java)**

package com.example.practical15;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import com.example.practical15.modules.SQLHandler;

public class AddFacility extends AppCompatActivity {

TextView topic;

EditText title, description;

Button submit;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.edit\_facility);

topic = findViewById(R.id.topic);

title = findViewById(R.id.title);

description = findViewById(R.id.description);

submit = findViewById(R.id.Submit);

}

@Override

protected void onStart() {

super.onStart();

topic.setText("Add a Note");

submit.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

if(title.getText().toString().isEmpty()) {

Toast.makeText(AddFacility.this, "Empty title ??", Toast.LENGTH\_SHORT).show();

} else {

SQLHandler sqlHandler = new SQLHandler(AddFacility.this, "MyDB", null, 1);

sqlHandler.Insert(title.getText().toString(), description.getText().toString());

Toast.makeText(AddFacility.this, "Note Added Successfully", Toast.LENGTH\_SHORT).show();

finish();

}

}

});

}

}

**JAVA FILE: (EditFacility.java)**

package com.example.practical15;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import com.example.practical15.modules.SQLHandler;

public class EditFacility extends AppCompatActivity {

EditText title, description;

TextView topic;

Button submit;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.edit\_facility);

title = findViewById(R.id.title);

description = findViewById(R.id.description);

topic = findViewById(R.id.topic);

submit = findViewById(R.id.Submit);

}

@Override

protected void onStart() {

super.onStart();

topic.setText("Edit your note");

title.setText(getIntent().getStringExtra("title"));

description.setText(getIntent().getStringExtra("description"));

submit.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

if(title.getText().toString().isEmpty()) {

Toast.makeText(EditFacility.this, "Empty title ??", Toast.LENGTH\_SHORT).show();

} else {

SQLHandler sqlHandler = new SQLHandler(EditFacility.this, "MyDB", null, 1);

sqlHandler.Edit(title.getText().toString(), getIntent().getStringExtra("title") ,description.getText().toString(), getIntent().getStringExtra("description"),getIntent().getStringExtra("date"));

Toast.makeText(EditFacility.this, "Note Updated Successfully", Toast.LENGTH\_SHORT).show();

finish();

}

}

});

}

}

**XML FILE: (activity\_main.xml)**

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:padding="10dp"

tools:context=".MainActivity">

<androidx.recyclerview.widget.RecyclerView

android:id="@+id/recyclerView"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintBottom\_toBottomOf="parent"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"/>

<com.google.android.material.floatingactionbutton.FloatingActionButton

android:id="@+id/newNote"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

android:layout\_width="wrap\_content"

android:outlineSpotShadowColor="@android:color/transparent"

android:src="@drawable/ic\_baseline\_note\_add\_24"

android:layout\_height="wrap\_content"/>

</androidx.constraintlayout.widget.ConstraintLayout>

**XML FILE: (edit\_facility.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"

android:padding="20dp"

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

<TextView

android:id="@+id/topic"

android:textSize="20sp"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintEnd\_toEndOf="parent" />

<LinearLayout

android:orientation="vertical"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

android:layout\_width="match\_parent"

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

<EditText

android:id="@+id/title"

android:hint="Title"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"/>

<EditText

android:id="@+id/description"

android:hint="Description"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"/>

</LinearLayout>

<Button

android:id="@+id/Submit"

android:text="Submit"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintEnd\_toEndOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

**XML FILE: (note\_ticket.xml)**

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

<androidx.cardview.widget.CardView xmlns:android="http://schemas.android.com/apk/res/android"

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

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="vertical"

app:cardPreventCornerOverlap="true"

app:cardUseCompatPadding="true"

app:cardElevation="10dp"

app:cardCornerRadius="12dp">

<LinearLayout

android:orientation="vertical"

android:layout\_gravity="center"

android:layout\_width="match\_parent"

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

<LinearLayout

android:orientation="horizontal"

android:padding="20dp"

android:layout\_width="match\_parent"

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

<TextView

android:id="@+id/title"

android:layout\_weight="1"

android:textSize="18dp"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

<TextView

android:id="@+id/modified"

android:textAlignment="textEnd"

android:textSize="14sp"

android:layout\_weight="1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

</LinearLayout>

<LinearLayout

android:orientation="horizontal"

android:layout\_width="match\_parent"

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

<com.google.android.material.button.MaterialButton

android:id="@+id/editNote"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:drawableLeft="@drawable/ic\_baseline\_edit\_note\_24"

android:text="Edit Note"

android:layout\_margin="10dp"

app:cornerRadius="20dp"/>

<com.google.android.material.button.MaterialButton

android:id="@+id/deleteNote"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:drawableLeft="@drawable/ic\_baseline\_delete\_24"

android:text="Delete Note"

android:layout\_margin="10dp"

app:cornerRadius="20dp"/>

</LinearLayout>

</LinearLayout>

</androidx.cardview.widget.CardView>

**XML FILE: (show\_notes.xml)**

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"

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

android:padding="30dp"

android:layout\_width="match\_parent"

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

<TextView

android:id="@+id/title"

android:textSize="22sp"

android:paddingVertical="20dp"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

<TextView

android:id="@+id/date"

android:textSize="14sp"

app:layout\_constraintTop\_toBottomOf="@id/title"

app:layout\_constraintEnd\_toEndOf="parent"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

<TextView

android:id="@+id/body"

android:textSize="18sp"

android:paddingTop="30dp"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@id/date"

app:layout\_constraintBottom\_toBottomOf="parent"

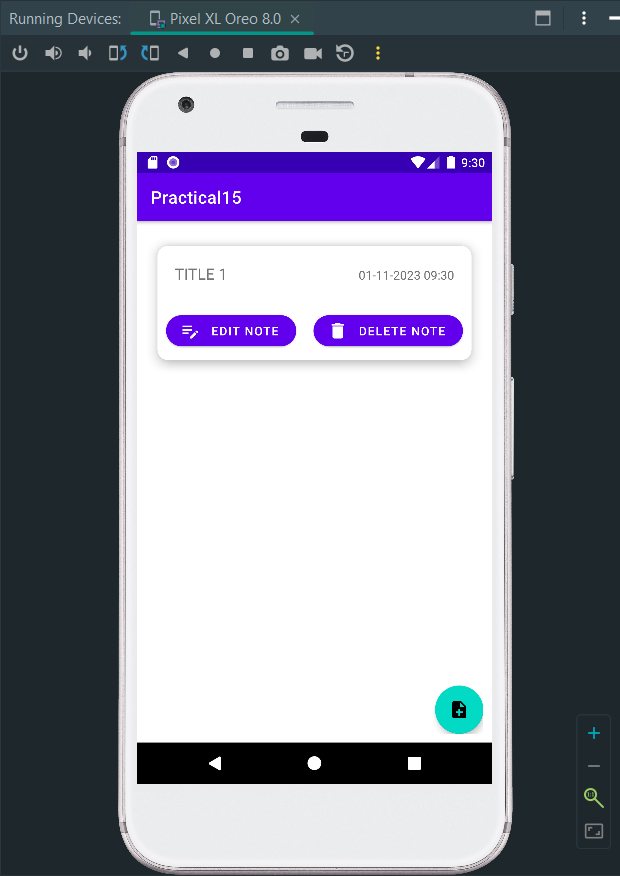
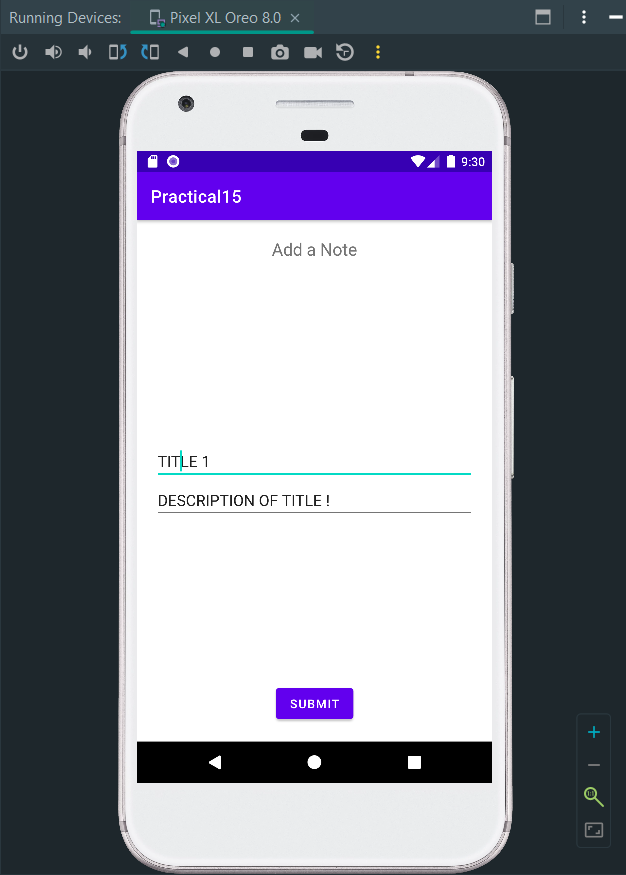
app:layout\_constraintStart\_toStartOf="parent"

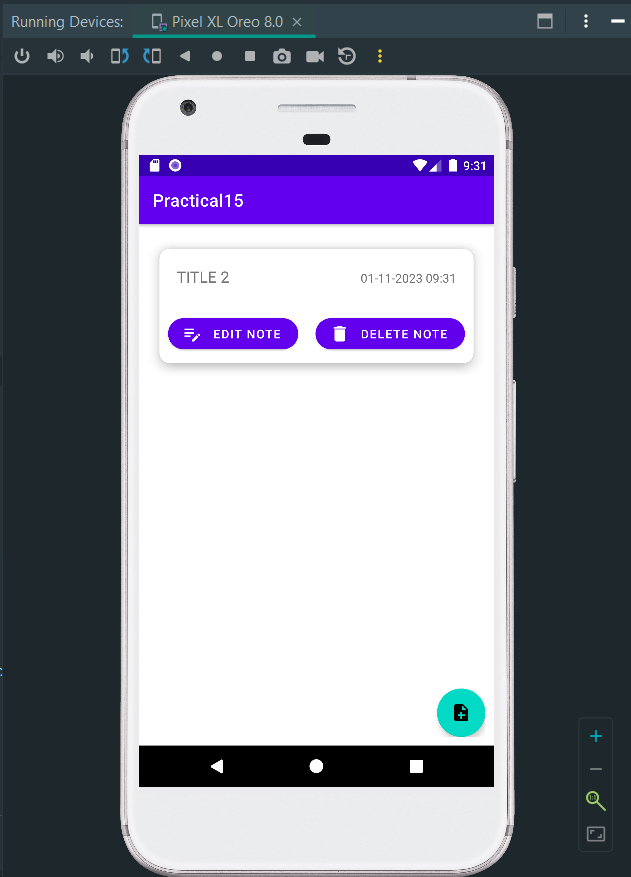
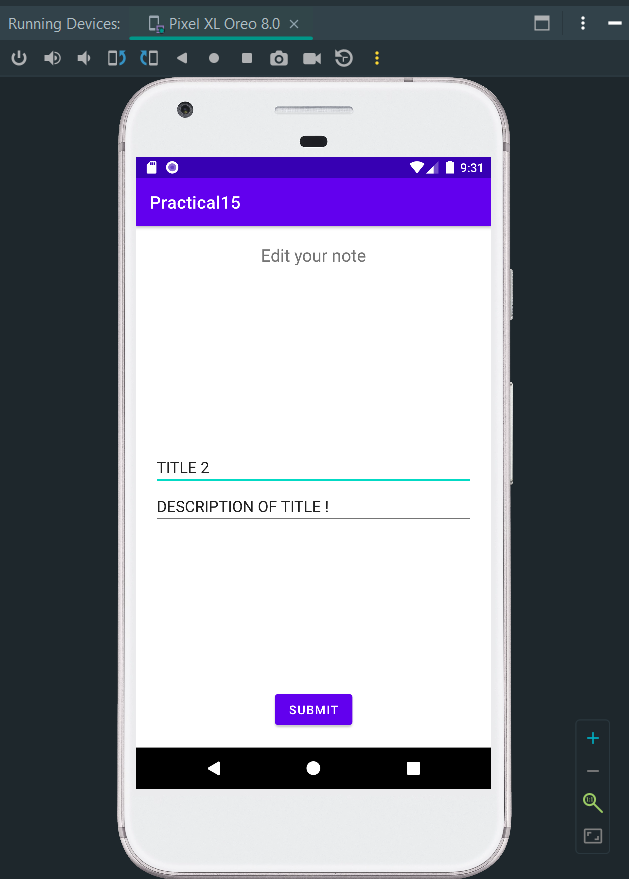
android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

</androidx.constraintlayout.widget.ConstraintLayout>

**Output:**

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