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)

```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);
        }
```

```java
        @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)
```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)
```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;
```

```java
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);
```

```java
        }
        @Override
        public void onBindViewHolder(ViewHolder holder, int position) {
        holder.getTitleView().setText(dataset.get(position).title);
holder.getModifiedView().setText(dataset.get(position).datetime.format(DateTimeFormatter.o
fPattern("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)

```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)

```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);
```

```java
        }
        @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)
```java
package com.example.practical15;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```java
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;

```java
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"
```

```xml
            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
<?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"
```

```xml
            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>
```