Main Activity.java

**package** com.example.almousawi\_final;

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

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

**import** android.content.ContentValues;

**import** android.content.DialogInterface;

**import** android.database.Cursor;

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

**import** android.os.Bundle;

**import** android.view.Menu;

**import** android.view.MenuItem;

**import** android.view.View;

**import** android.widget.ArrayAdapter;

**import** android.widget.EditText;

**import** android.widget.ListView;

**import** android.widget.TextView;

**import** com.example.almousawi\_final.db.TaskContract;

**import** com.example.almousawi\_final.db.TaskDbHelper;

**import** java.util.ArrayList;

**public class** MainActivity **extends** AppCompatActivity {

**private static final** String ***TAG*** = **"MainActivity"**;

**private** TaskDbHelper **mHelper**;

**private** ListView **mTaskListView**;

**private** ArrayAdapter<String> **mAdapter**;

@Override

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

**super**.onCreate(savedInstanceState);

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

**mHelper** = **new** TaskDbHelper(**this**);

**mTaskListView** = (ListView) findViewById(R.id.***list\_todo***);

updateUI();

}

@Override

**public boolean** onCreateOptionsMenu(Menu menu) {

getMenuInflater().inflate(R.menu.***main\_menu***, menu);

**return super**.onCreateOptionsMenu(menu);

}

@Override

**public boolean** onOptionsItemSelected(MenuItem item) {

**switch** (item.getItemId()) {

**case** R.id.***action\_add\_task***:

**final** EditText taskEditText = **new** EditText(**this**);

AlertDialog dialog = **new** AlertDialog.Builder(**this**)

.setTitle(**"Add a new task"**)

.setMessage(**"What do you want to do next?"**)

.setView(taskEditText)

.setPositiveButton(**"Add"**, **new** DialogInterface.OnClickListener() {

@Override

**public void** onClick(DialogInterface dialog, **int** which) {

String task = String.*valueOf*(taskEditText.getText());

SQLiteDatabase db = **mHelper**.getWritableDatabase();

ContentValues values = **new** ContentValues();

values.put(TaskContract.TaskEntry.***COL\_TASK\_TITLE***, task);

db.insertWithOnConflict(TaskContract.TaskEntry.***TABLE***, **null**, values, SQLiteDatabase.***CONFLICT\_REPLACE***);

db.close();

updateUI();

}

})

.setNegativeButton(**"Cancel"**, **null**)

.create();

dialog.show();

**return true**;

**default**:

**return super**.onOptionsItemSelected(item);

}

}

**private void** updateUI() {

ArrayList<String> taskList = **new** ArrayList<>();

SQLiteDatabase db = **mHelper**.getReadableDatabase();

Cursor cursor = db.query(TaskContract.TaskEntry.***TABLE***,

**new** String[]{TaskContract.TaskEntry.***\_ID***, TaskContract.TaskEntry.***COL\_TASK\_TITLE***},

**null**, **null**, **null**, **null**, **null**);

**while** (cursor.moveToNext()) {

**int** idx = cursor.getColumnIndex(TaskContract.TaskEntry.***COL\_TASK\_TITLE***);

taskList.add(cursor.getString(idx));

}

**if** (**mAdapter** == **null**) {

**mAdapter** = **new** ArrayAdapter<>(**this**, R.layout.***item\_todo\_xml***, R.id.***task\_title***, taskList);

**mTaskListView**.setAdapter(**mAdapter**);

} **else** {

**mAdapter**.clear();

**mAdapter**.addAll(taskList);

**mAdapter**.notifyDataSetChanged();

}

cursor.close();

db.close();

}

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

View parent = (View) view.getParent();

TextView taskTextView = (TextView) parent.findViewById(R.id.***task\_title***);

String task = String.*valueOf*(taskTextView.getText());

SQLiteDatabase db = **mHelper**.getWritableDatabase();

db.delete(TaskContract.TaskEntry.***TABLE***,

TaskContract.TaskEntry.***COL\_TASK\_TITLE*** + **" = ?"**,

**new** String[]{task});

db.close();

updateUI();

}

}

TaskContract.java

**package** com.example.almousawi\_final.db;

**import** android.provider.BaseColumns;

**public class** TaskContract {

**public static final** String ***DB\_NAME*** = **"com.example.almousawi\_final.db"**;

**public static final int *DB\_VERSION*** = 1;

**public class** TaskEntry **implements** BaseColumns {

**public static final** String ***TABLE*** = **"tasks"**;

**public static final** String ***COL\_TASK\_TITLE*** = **"title"**;

}

}

TaskDbHelper

**package** com.example.almousawi\_final.db;

**import** android.content.Context;

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

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

**public class** TaskDbHelper **extends** SQLiteOpenHelper {

**public** TaskDbHelper(Context context) {

**super**(context, TaskContract.***DB\_NAME***, **null**, TaskContract.***DB\_VERSION***);

}

@Override

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

String createTable = **"CREATE TABLE "** + TaskContract.TaskEntry.***TABLE*** + **" ( "** +

TaskContract.TaskEntry.***\_ID*** + **" INTEGER PRIMARY KEY AUTOINCREMENT, "** +

TaskContract.TaskEntry.***COL\_TASK\_TITLE*** + **" TEXT NOT NULL);"**;

db.execSQL(createTable);

}

@Override

**public void** onUpgrade(SQLiteDatabase db, **int** oldVersion, **int** newVersion) {

db.execSQL(**"DROP TABLE IF EXISTS "** + TaskContract.TaskEntry.***TABLE***);

onCreate(db);

}

}

Activity\_main.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:paddingBottom="16dp"**

**android:paddingLeft="16dp"**

**android:paddingRight="16dp"**

**android:paddingTop="16dp"**

**tools:context="com.example.almousawi\_final.MainActivity"**>

<**ListView**

**android:id="@+id/list\_todo"**

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

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

</**RelativeLayout**>

Item\_todo.xml

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

<**RelativeLayout**

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

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

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

**android:layout\_gravity="center\_vertical"**>

<**TextView**

**android:id="@+id/task\_title"**

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

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

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

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

**android:text="Hello"**

**android:textSize="20sp"** />

<**Button**

**android:id="@+id/task\_delete"**

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

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

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

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

**android:onClick="deleteTask"**

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

</**RelativeLayout**>

Main\_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/action\_add\_task"**

**android:icon="@android:drawable/ic\_menu\_add"**

**android:title="Add Task"**

**app:showAsAction="always"** />

</**menu**>