**NAME : JAYMIN VALAKI ROLLNO: MA067 MOBILE APPLICATION DEVELOPMENT**

**Implementation of SQLite Database**

1. **creating a new application to Complete CRUD operation in application for name, designation and location.**

**1)Activity\_main.xml**

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

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

android:orientation="vertical"

android:layout\_width="match\_parent"

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

<EditText

android:id="@+id/txtID"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter ID"

android:ems="10"/>

<TextView

android:id="@+id/fstTxt"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Name" />

<EditText

android:id="@+id/txtName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"/>

<TextView

android:id="@+id/secTxt"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Designation" />

<EditText

android:id="@+id/txtDesignation"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10" />

<TextView

android:id="@+id/thirdTxt"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Location" />

<EditText

android:id="@+id/txtLocation"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10" />

<Button

android:id="@+id/btnAdd"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Add" />

<Button

android:id="@+id/btnUpdate"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Update" />

<Button

android:id="@+id/btnDelete"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Delete" />

<Button

android:id="@+id/btnDisplay"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Display" />

</LinearLayout>

**2)Details.xml**

<?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="match\_parent"

android:orientation="vertical">

<ListView

android:id="@+id/user\_list"

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1"

android:dividerHeight="1dp" />

<Button

android:id="@+id/btnBack"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:layout\_marginTop="20dp"

android:text="Back" />

</LinearLayout>

**3)list\_row.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="wrap\_content"

android:orientation="horizontal"

android:padding="5dip">

<TextView

android:id="@+id/id"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textStyle="bold"

android:textSize="17sp"

android:layout\_alignParentStart="true"

android:layout\_alignParentTop="true"

android:layout\_marginEnd="16dp"

android:layout\_marginTop="16dp"

android:text="ID"/>

<TextView

android:id="@+id/name"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textStyle="bold"

android:textSize="17sp"

android:layout\_below="@+id/id"

android:layout\_alignParentStart="true"

android:text="Name"/>

<TextView

android:id="@+id/designation"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textSize="14sp"

android:layout\_below="@+id/name"

android:layout\_alignParentStart="true"

android:layout\_marginTop="7dp"

android:text="Designation"/>

<TextView

android:id="@+id/location"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textSize="14sp"

android:layout\_below="@+id/designation"

android:layout\_alignParentStart="true"

android:layout\_marginTop="7dp"

android:text="Location"/>

</RelativeLayout>

**4) DbHandler.java**

package com.example.apk1;

import android.annotation.SuppressLint;

import android.content.ContentValues;

import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import java.util.ArrayList;

import java.util.HashMap;

public class DbHandler extends SQLiteOpenHelper {

private static final int DB\_VERSION = 1;

private static final String DB\_NAME = "usersdb";

private static final String TABLE\_Users = "userdetails";

private static final String KEY\_ID = "id";

private static final String KEY\_NAME = "name";

private static final String KEY\_DESIGNATION = "designation";

private static final String KEY\_LOCATION = "location";

public DbHandler(Context context) {

super (context, DB\_NAME, null, DB\_VERSION);

}

@Override

public void onCreate(SQLiteDatabase db) {

String CREATE\_TABLE = "CREATE TABLE " + TABLE\_Users + "("

+ KEY\_ID + " INTEGER PRIMARY KEY AUTOINCREMENT,"

+ KEY\_NAME + " TEXT,"

+ KEY\_DESIGNATION + " TEXT,"

+ KEY\_LOCATION + " TEXT"

+ ")";

db.execSQL(CREATE\_TABLE);

}

@Override

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

// Drop older table if exists

db.execSQL("DROP TABLE IF EXISTS " + TABLE\_Users);

// Create tables again

onCreate(db);

}

// Insert a new user

public long insertUserDetails(String name, String designation, String location) {

SQLiteDatabase db = this.getWritableDatabase();

ContentValues cValues = new ContentValues();

cValues.put(KEY\_NAME, name);

cValues.put(KEY\_DESIGNATION, designation);

cValues.put(KEY\_LOCATION, location);

long newRowId = db.insert(TABLE\_Users, null, cValues);

db.close();

return newRowId;

}

// Update user details

public int updateUserDetails(int id, String name, String designation, String location) {

SQLiteDatabase db = this.getWritableDatabase();

ContentValues cVals = new ContentValues();

cVals.put(KEY\_NAME, name);

cVals.put(KEY\_DESIGNATION, designation);

cVals.put(KEY\_LOCATION, location);

return db.update(TABLE\_Users, cVals, KEY\_ID + " = ?", new String[]{String.valueOf(id)});

}

// Delete a user by ID

public void deleteUser(int id) {

SQLiteDatabase db = this.getWritableDatabase();

db.delete(TABLE\_Users, KEY\_ID + " = ?", new String[]{String.valueOf(id)});

db.close();

}

// Get all users

@SuppressLint("Range")

public ArrayList<HashMap<String, String>> getAllUsers() {

SQLiteDatabase db = this.getWritableDatabase();

ArrayList<HashMap<String, String>> userList = new ArrayList<>();

String query = "SELECT \* FROM " + TABLE\_Users;

Cursor cursor = db.rawQuery(query, null);

while (cursor.moveToNext()) {

HashMap<String, String> user = new HashMap<>();

user.put("id", cursor.getString(cursor.getColumnIndex(KEY\_ID)));

user.put("name", cursor.getString(cursor.getColumnIndex(KEY\_NAME)));

user.put("designation", cursor.getString(cursor.getColumnIndex(KEY\_DESIGNATION)));

user.put("location", cursor.getString(cursor.getColumnIndex(KEY\_LOCATION)));

userList.add(user);

}

cursor.close();

return userList;

}

// Get a user by ID

@SuppressLint("Range")

public HashMap<String, String> getUserById(int id) {

SQLiteDatabase db = this.getWritableDatabase();

HashMap<String, String> user = new HashMap<>();

String query = "SELECT \* FROM " + TABLE\_Users + " WHERE " + KEY\_ID + " = ?";

Cursor cursor = db.rawQuery(query, new String[]{String.valueOf(id)});

if (cursor.moveToNext()) {

user.put("id", cursor.getString(cursor.getColumnIndex(KEY\_ID)));

user.put("name", cursor.getString(cursor.getColumnIndex(KEY\_NAME)));

user.put("designation", cursor.getString(cursor.getColumnIndex(KEY\_DESIGNATION)));

user.put("location", cursor.getString(cursor.getColumnIndex(KEY\_LOCATION)));

}

cursor.close();

return user;

}

}

**5) MainActivity.java**

package com.example.apk1;

package com.example.apk1;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

EditText id, name, designation, location;

Button saveBtn, addBtn, updateBtn, deleteBtn, displayBtn;

Intent intent;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Initialize EditText for entering the ID

id = findViewById(R.id.txtID);

name = findViewById(R.id.txtName);

designation = findViewById(R.id.txtDesignation);

location = findViewById(R.id.txtLocation);

addBtn = findViewById(R.id.btnAdd);

updateBtn = findViewById(R.id.btnUpdate);

deleteBtn = findViewById(R.id.btnDelete);

displayBtn = findViewById(R.id.btnDisplay);

// Click listener for the "Add" button

addBtn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String name1 = name.getText().toString();

String designation1 = designation.getText().toString();

String location1 = location.getText().toString();

DbHandler dbHandler = new DbHandler(MainActivity.this);

long newRowId = dbHandler.insertUserDetails(name1, designation1, location1);

if (newRowId != -1) {

// Insertion successful

Toast.makeText(getApplicationContext(), "Details Added Successfully", Toast.LENGTH\_SHORT).show();

// Optionally, you can clear the input fields here

name.setText("");

designation.setText("");

location.setText("");

} else {

// Insertion failed

Toast.makeText(getApplicationContext(), "Failed to add details", Toast.LENGTH\_SHORT).show();

}

}

});

// Click listener for the "Update" button

updateBtn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String idStr = id.getText().toString();

if (!idStr.isEmpty()) {

int userId = Integer.parseInt(idStr);

String name1 = name.getText().toString();

String designation1 = designation.getText().toString();

String location1 = location.getText().toString();

DbHandler dbHandler = new DbHandler(MainActivity.this);

int rowsUpdated = dbHandler.updateUserDetails(userId, name1, designation1, location1);

if (rowsUpdated > 0) {

Toast.makeText(getApplicationContext(), "Details Updated Successfully", Toast.LENGTH\_SHORT).show();

// Optionally, you can clear the input fields here

id.setText("");

name.setText("");

designation.setText("");

location.setText("");

} else {

Toast.makeText(getApplicationContext(), "No user with this ID found", Toast.LENGTH\_SHORT).show();

}

} else {

Toast.makeText(getApplicationContext(), "Please enter an ID to update", Toast.LENGTH\_SHORT).show();

}

}

});

// Click listener for the "Delete" button

deleteBtn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String idStr = id.getText().toString();

if (!idStr.isEmpty()) {

int userId = Integer.parseInt(idStr);

DbHandler dbHandler = new DbHandler(MainActivity.this);

dbHandler.deleteUser(userId);

// Optionally, you can clear the input fields here

id.setText("");

name.setText("");

designation.setText("");

location.setText("");

Toast.makeText(getApplicationContext(),"User\_Deleted\_Successfully", Toast.LENGTH\_SHORT).show();

} else {

Toast.makeText(getApplicationContext(), "Please enter an ID to delete", Toast.LENGTH\_SHORT).show();

}

}

});

// Click listener for the "Display" button

displayBtn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

startActivity(intent);

}

});

}

}

**6) DetailsActivity.java**

package com.example.apk1;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.ListAdapter;

import android.widget.ListView;

import android.widget.SimpleAdapter;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;

import java.util.HashMap;

public class DetailsActivity extends AppCompatActivity {

Intent intent;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.details);

DbHandler db = new DbHandler(this);

ArrayList<HashMap<String, String>> userList = db.GetUsers();

ListView lv = findViewById(R.id.user\_list);

ListAdapter adapter = new SimpleAdapter(

DetailsActivity.this,

userList,

R.layout.list\_row,

new String[]{"id", "name", "designation", "location"},

new int[]{R.id.id, R.id.name, R.id.designation, R.id.location}

);

lv.setAdapter(adapter);

Button back = findViewById(R.id.btnBack);

back.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

startActivity(intent);

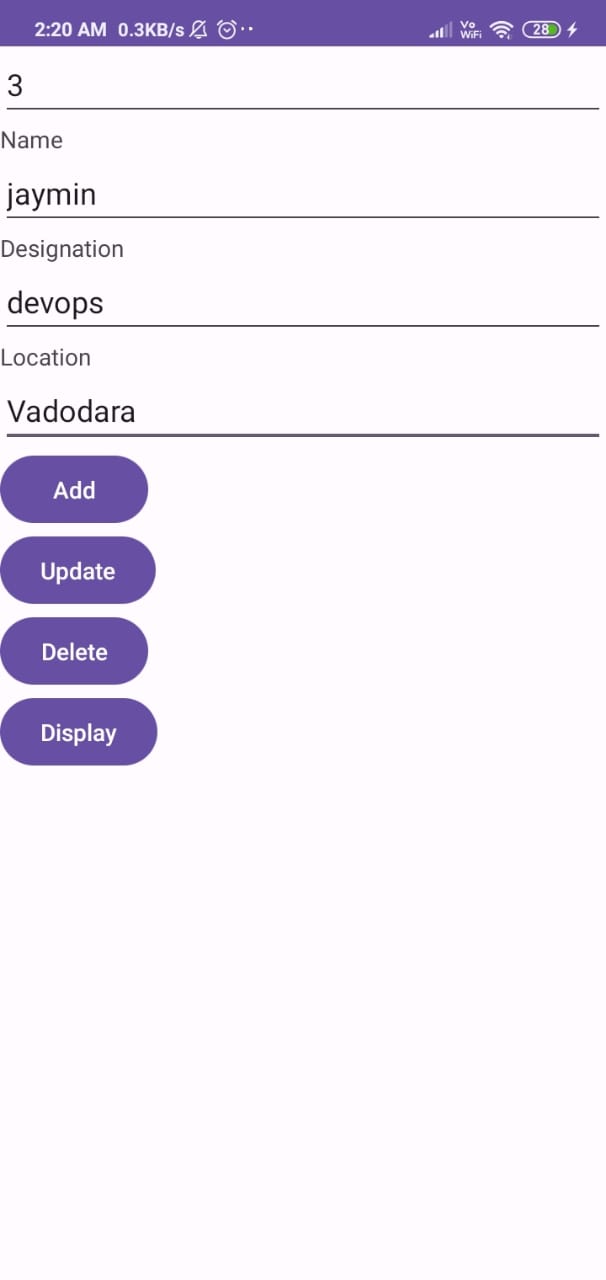
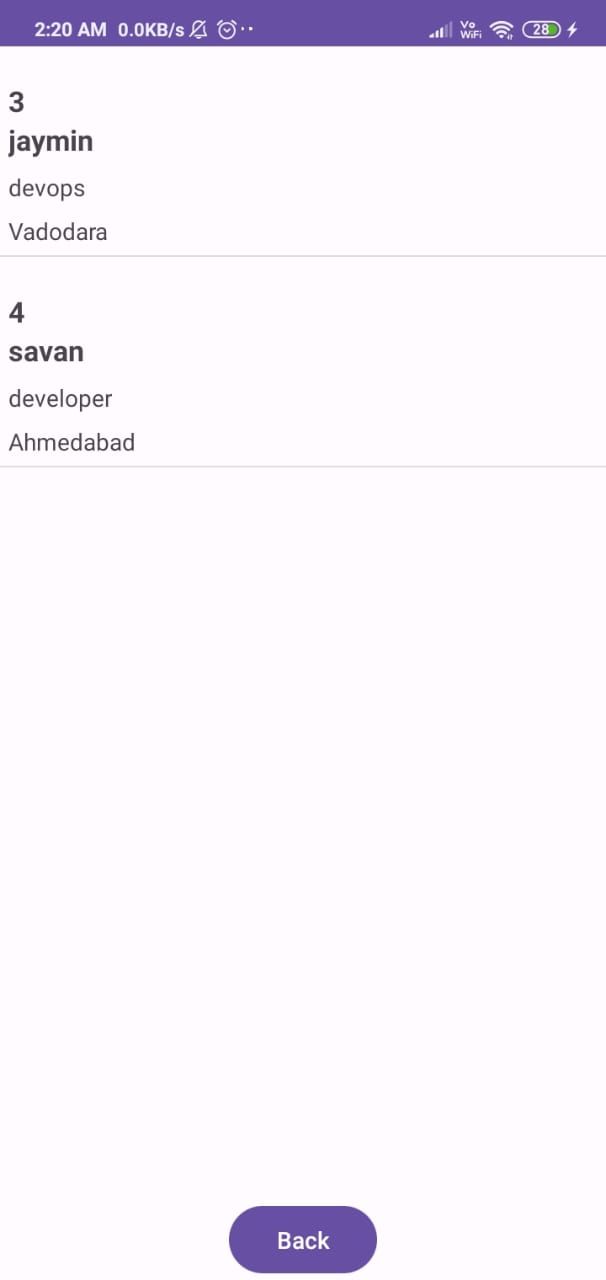
}

});

}

}

**OUTPUT:**

** **

**Q-2) Create an application which will handle Student Details.**

**• Create a database with name “MyDb”**

**• Create a student table with id, rollno, name and marks.**

**• Create a screen to allow user to input student details, and store the details to table. Display**

**error message if data is empty.**

**• Display all students entered.**

**• Allow the user to edit or remove the student.**

**1) Activity\_main.xml:**

<?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="match\_parent"

android:orientation="vertical">

<EditText

android:id="@+id/txtRollNo"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Roll Number" />

<EditText

android:id="@+id/txtName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Name" />

<EditText

android:id="@+id/txtCMarks"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="C Marks" />

<EditText

android:id="@+id/txtJavaMarks"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Java Marks" />

<EditText

android:id="@+id/txtPythonMarks"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Python Marks" />

<Button

android:id="@+id/btnAdd"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Add" />

<Button

android:id="@+id/btnUpdate"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Update" />

<Button

android:id="@+id/btnDelete"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Delete" />

<Button

android:id="@+id/btnDisplay"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Display" />

</LinearLayout>

**2) details.xml**

<?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="match\_parent"

android:orientation="vertical">

<ListView

android:id="@+id/studentListView"

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1"

android:dividerHeight="1dp" />

<Button

android:id="@+id/btnBack"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Back" />

</LinearLayout>

**3)** **list\_row.xml**

<?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"

android:padding="5dip" >

<TextView

android:id="@+id/rollNo"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textStyle="bold"

android:textSize="17dp" />

<TextView

android:id="@+id/name"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textStyle="bold"

android:textSize="17dp" />

<TextView

android:id="@+id/cMarks"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="7dp"

android:textColor="#343434"

android:textSize="14dp" />

<TextView

android:id="@+id/javaMarks"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textColor="#343434"

android:textSize="14dp" />

<TextView

android:id="@+id/pythonMarks"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textColor="#343434"

android:textSize="14dp" />

</LinearLayout>

**4)Datahandler.java:**

package com.example.apk1;

import android.annotation.SuppressLint;

import android.content.ContentValues;

import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import java.util.ArrayList;

import java.util.HashMap;

public class DbHandler extends SQLiteOpenHelper {

private static final int DB\_VERSION = 1;

private static final String DB\_NAME = "studentdb";

private static final String TABLE\_Students = "studentdetails";

private static final String KEY\_ID = "id";

private static final String KEY\_ROLLNO = "rollno";

private static final String KEY\_NAME = "name";

private static final String KEY\_CMarks = "c\_marks";

private static final String KEY\_JavaMarks = "java\_marks";

private static final String KEY\_PythonMarks = "python\_marks";

public DbHandler(Context context) {

super(context, DB\_NAME, null, DB\_VERSION);

}

@Override

public void onCreate(SQLiteDatabase db) {

String CREATE\_TABLE = "CREATE TABLE " + TABLE\_Students + "("

+ KEY\_ID + " INTEGER PRIMARY KEY AUTOINCREMENT,"

+ KEY\_ROLLNO + " TEXT,"

+ KEY\_NAME + " TEXT,"

+ KEY\_CMarks + " INTEGER,"

+ KEY\_JavaMarks + " INTEGER,"

+ KEY\_PythonMarks + " INTEGER"

+ ")";

db.execSQL(CREATE\_TABLE);

}

@Override

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

// Drop older table if exists

db.execSQL("DROP TABLE IF EXISTS " + TABLE\_Students);

// Create tables again

onCreate(db);

}

// Adding new Student Details

void insertStudentDetails(String rollNo, String name, int cMarks, int javaMarks, int pythonMarks) {

// Get the Data Repository in write mode

SQLiteDatabase db = this.getWritableDatabase();

// Create a new map of values, where column names are the keys

ContentValues cValues = new ContentValues();

cValues.put(KEY\_ROLLNO, rollNo);

cValues.put(KEY\_NAME, name);

cValues.put(KEY\_CMarks, cMarks);

cValues.put(KEY\_JavaMarks, javaMarks);

cValues.put(KEY\_PythonMarks, pythonMarks);

// Insert the new row, returning the primary key value of the new row

long newRowId = db.insert(TABLE\_Students, null, cValues);

db.close();

}

@SuppressLint("Range")

public ArrayList<HashMap<String, String>> GetStudents() {

SQLiteDatabase db = this.getWritableDatabase();

ArrayList<HashMap<String, String>> studentList = new ArrayList<>();

String query = "SELECT rollno, name, c\_marks, java\_marks, python\_marks, id FROM " + TABLE\_Students;

Cursor cursor = db.rawQuery(query, null);

while (cursor.moveToNext()) {

HashMap<String, String> student = new HashMap<>();

student.put("rollNo", cursor.getString(cursor.getColumnIndex(KEY\_ROLLNO)));

student.put("name", cursor.getString(cursor.getColumnIndex(KEY\_NAME)));

student.put("cMarks", cursor.getString(cursor.getColumnIndex(KEY\_CMarks)));

student.put("javaMarks", cursor.getString(cursor.getColumnIndex(KEY\_JavaMarks)));

student.put("pythonMarks", cursor.getString(cursor.getColumnIndex(KEY\_PythonMarks)));

student.put("id", cursor.getString(cursor.getColumnIndex(KEY\_ID)));

studentList.add(student);

}

return studentList;

}

@SuppressLint("Range")

public ArrayList<HashMap<String, String>> GetStudentById(int studentId) {

SQLiteDatabase db = this.getWritableDatabase();

ArrayList<HashMap<String, String>> studentList = new ArrayList<>();

String query = "SELECT rollno, name, c\_marks, java\_marks, python\_marks FROM " + TABLE\_Students;

Cursor cursor = db.query(TABLE\_Students, new String[]{KEY\_ROLLNO, KEY\_NAME, KEY\_CMarks, KEY\_JavaMarks, KEY\_PythonMarks},

KEY\_ID + "=?", new String[]{String.valueOf(studentId)}, null, null, null, null);

if (cursor.moveToNext()) {

HashMap<String, String> student = new HashMap<>();

student.put("rollNo", cursor.getString(cursor.getColumnIndex(KEY\_ROLLNO)));

student.put("name", cursor.getString(cursor.getColumnIndex(KEY\_NAME)));

student.put("cMarks", cursor.getString(cursor.getColumnIndex(KEY\_CMarks)));

student.put("javaMarks", cursor.getString(cursor.getColumnIndex(KEY\_JavaMarks)));

student.put("pythonMarks", cursor.getString(cursor.getColumnIndex(KEY\_PythonMarks)));

student.put("id", cursor.getString(cursor.getColumnIndex(KEY\_ID)));

studentList.add(student);

}

return studentList;

}

public void DeleteStudent(int studentId) {

SQLiteDatabase db = this.getWritableDatabase();

db.delete(TABLE\_Students, KEY\_ID + " = ?", new String[]{String.valueOf(studentId)});

db.close();

}

public int updateStudentDetails(String rollNo, String name, int cMarks, int javaMarks, int pythonMarks, int id) {

SQLiteDatabase db = this.getWritableDatabase();

ContentValues cValues = new ContentValues();

cValues.put(KEY\_ROLLNO, rollNo);

cValues.put(KEY\_NAME, name);

cValues.put(KEY\_CMarks, cMarks);

cValues.put(KEY\_JavaMarks, javaMarks);

cValues.put(KEY\_PythonMarks, pythonMarks);

int count = db.update(TABLE\_Students, cValues, KEY\_ID + " = ?", new String[]{String.valueOf(id)});

db.close();

return count;

}

// Delete Student Details

public void deleteStudent(int studentId) {

SQLiteDatabase db = this.getWritableDatabase();

db.delete(TABLE\_Students, KEY\_ID + " = ?", new String[]{String.valueOf(studentId)});

db.close();

}

// Get Student Details (All)

@SuppressLint("Range")

public ArrayList<HashMap<String, String>> getStudents() {

SQLiteDatabase db = this.getWritableDatabase();

ArrayList<HashMap<String, String>> studentList = new ArrayList<>();

String query = "SELECT rollno, name, c\_marks, java\_marks, python\_marks, id FROM " + TABLE\_Students;

Cursor cursor = db.rawQuery(query, null);

while (cursor.moveToNext()) {

HashMap<String, String> student = new HashMap<>();

student.put("rollNo", cursor.getString(cursor.getColumnIndex(KEY\_ROLLNO)));

student.put("name", cursor.getString(cursor.getColumnIndex(KEY\_NAME)));

student.put("cMarks", cursor.getString(cursor.getColumnIndex(KEY\_CMarks)));

student.put("javaMarks", cursor.getString(cursor.getColumnIndex(KEY\_JavaMarks)));

student.put("pythonMarks", cursor.getString(cursor.getColumnIndex(KEY\_PythonMarks)));

student.put("id", cursor.getString(cursor.getColumnIndex(KEY\_ID)));

studentList.add(student);

}

return studentList;

}

}

**5)MainActivity.java:**

package com.example.apk1;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

EditText rollNo, name, cMarks, javaMarks, pythonMarks;

Button addButton, updateButton, deleteButton, displayButton;

Intent intent;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

rollNo = findViewById(R.id.txtRollNo);

name = findViewById(R.id.txtName);

cMarks = findViewById(R.id.txtCMarks);

javaMarks = findViewById(R.id.txtJavaMarks);

pythonMarks = findViewById(R.id.txtPythonMarks);

addButton = findViewById(R.id.btnAdd);

updateButton = findViewById(R.id.btnUpdate);

deleteButton = findViewById(R.id.btnDelete);

displayButton = findViewById(R.id.btnDisplay);

addButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String rollNo1 = rollNo.getText().toString();

String name1 = name.getText().toString();

String cMarks1 = cMarks.getText().toString();

String javaMarks1 = javaMarks.getText().toString();

String pythonMarks1 = pythonMarks.getText().toString();

if (rollNo1.isEmpty() || name1.isEmpty()) {

Toast.makeText(getApplicationContext(), "Roll No and Name are required.", Toast.LENGTH\_SHORT).show();

return;

}

DbHandler dbHandler = new DbHandler(MainActivity.this);

dbHandler.insertStudentDetails(rollNo1, name1, Integer.parseInt(cMarks1), Integer.parseInt(javaMarks1), Integer.parseInt(pythonMarks1));

Toast.makeText(getApplicationContext(), "Student Details Inserted Successfully", Toast.LENGTH\_SHORT).show();

}

});

updateButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String rollNo1 = rollNo.getText().toString();

String name1 = name.getText().toString();

String cMarks1 = cMarks.getText().toString();

String javaMarks1 = javaMarks.getText().toString();

String pythonMarks1 = pythonMarks.getText().toString();

// Get the student ID that you want to update (you should have this information)

int studentIdToUpdate = 1; // Replace with the actual student ID

DbHandler dbHandler = new DbHandler(MainActivity.this);

int updatedRowCount = dbHandler.updateStudentDetails(rollNo1, name1, Integer.parseInt(cMarks1), Integer.parseInt(javaMarks1), Integer.parseInt(pythonMarks1), studentIdToUpdate);

if (updatedRowCount > 0) {

Toast.makeText(getApplicationContext(), "Student Details Updated Successfully", Toast.LENGTH\_SHORT).show();

} else {

Toast.makeText(getApplicationContext(), "Failed to update student details", Toast.LENGTH\_SHORT).show();

}

}

});

deleteButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

// Get the student ID that you want to delete (you should have this information)

int studentIdToDelete = 1; // Replace with the actual student ID

DbHandler dbHandler = new DbHandler(MainActivity.this);

dbHandler.deleteStudent(studentIdToDelete);

Toast.makeText(getApplicationContext(), "Student Details Deleted Successfully", Toast.LENGTH\_SHORT).show();

}

});

displayButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

startActivity(intent);

}

});

}

}

**6)** **DetailsActivity.java**

package com.example.apk1;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.Button;

import android.widget.ListView;

import android.widget.SimpleAdapter;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;

import java.util.HashMap;

public class DetailsActivity extends AppCompatActivity {

Intent intent;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.details);

DbHandler db = new DbHandler(this);

ArrayList<HashMap<String, String>> studentList = db.GetStudents();

ListView lv = findViewById(R.id.studentListView);

// Create a SimpleAdapter to populate the ListView with student data

SimpleAdapter adapter = new SimpleAdapter(

DetailsActivity.this,

studentList,

R.layout.list\_row,

new String[]{"rollNo", "name", "cMarks", "javaMarks", "pythonMarks"},

new int[]{R.id.rollNo, R.id.name, R.id.cMarks, R.id.javaMarks, R.id.pythonMarks}

);

lv.setAdapter(adapter);

lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {

@Override

public void onItemClick(AdapterView<?> parent, View view, int position, long id) {

)

HashMap<String, String> selectedStudent = studentList.get(position);

String studentId = selectedStudent.get("id");

Toast.makeText(DetailsActivity.this, "Selected Student ID: " + studentId, Toast.LENGTH\_SHORT).show();

}

});

Button backButton = findViewById(R.id.btnBack);

backButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

startActivity(intent);

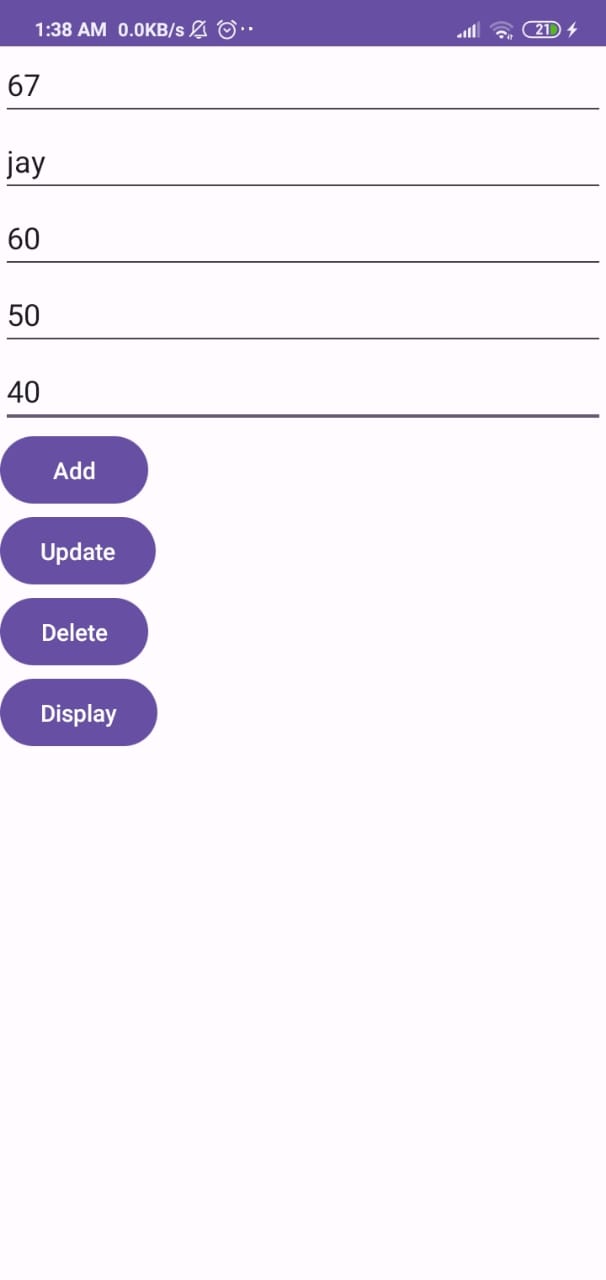
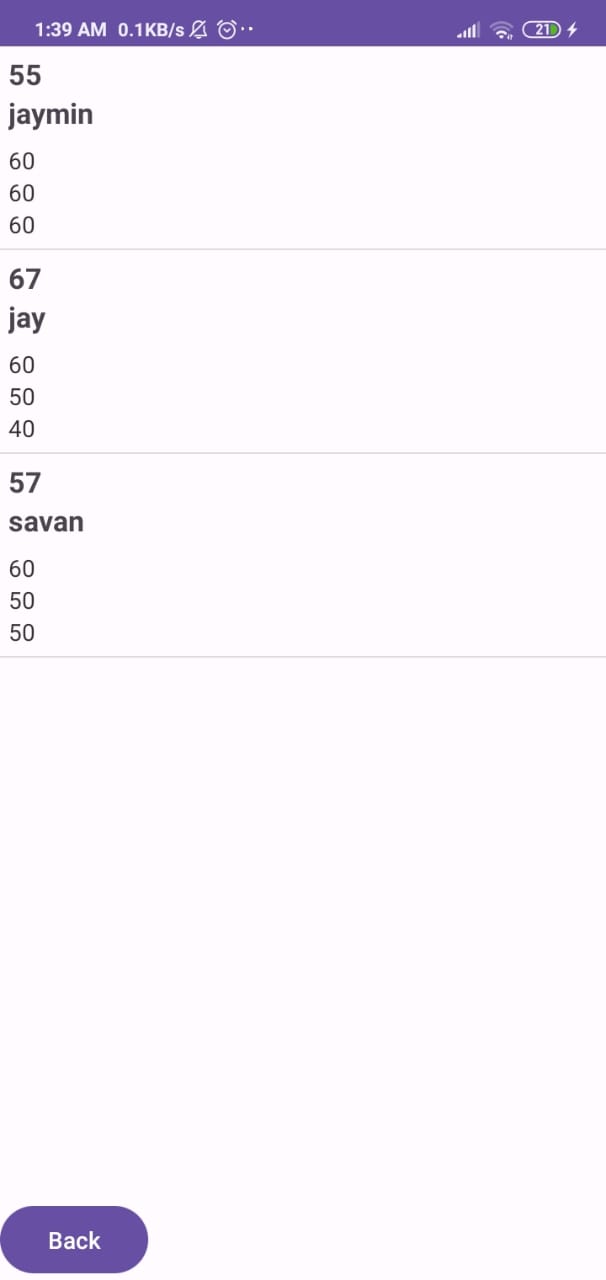
}

});

}

}

**OUTPUT**

** **