

**SCHOOL OF
COMPUTING
CHENNAI**

20CYS404

Android Application Development

End Sem Lab Exam

Add data to database

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END SEM LAB EXAM

Aim:

To develop an application for course registration

Code:

File : activity_main.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:padding="16dp">

    <!-- Logo ImageView -->
    <ImageView
        android:id="@+id/logo"
        android:layout_width="200dp"
        android:layout_height="80dp"
        android:src="@drawable/logo"
        android:scaleType="centerInside"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="24dp" /> <!-- Adds space below the logo -->

    <!-- Name EditText -->
    <EditText
        android:id="@+id/et_name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Name"
        android:layout_below="@id/logo"
        android:layout_marginTop="8dp" />

    <!-- Course EditText -->
    <EditText
        android:id="@+id/et_course"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Course"
        android:layout_below="@id/et_name"
        android:layout_marginTop="8dp" />

    <!-- Fees EditText -->
    <EditText
        android:id="@+id/et_fees"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Fees"
```

```
    android:layout_below="@id/et_course"
    android:layout_marginTop="8dp" />
```

```
<!-- Save Button -->
```

```
<Button
    android:id="@+id/btn_save"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Save"
    android:layout_below="@id/et_fees"
    android:layout_marginTop="16dp"
    android:layout_alignParentStart="true" />
```

```
<!-- View Button -->
```

```
<Button
    android:id="@+id/btn_view"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="View"
    android:layout_below="@id/et_fees"
    android:layout_marginTop="16dp"
    android:layout_toEndOf="@id/btn_save"
    android:layout_marginStart="16dp" /> <!-- Adds margin between buttons -->
```

```
<!-- Table Layout for Records -->
```

```
<TableLayout
    android:id="@+id/tableLayout"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/btn_save"
    android:layout_marginTop="16dp"
    android:stretchColumns="1" />
```

```
<!-- Footer TextView -->
```

```
<TextView
    android:id="@+id/text_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sridharan [CH.EN.U4CYS21080]"
    android:textSize="25sp"
    android:textColor="#000000"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true"
    android:layout_marginBottom="20dp" />
```

```
</RelativeLayout>
```

File: MainActivity.java

```
package com.example.labexam;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TableLayout;
import android.widget.TableRow;
import android.widget.TextView;
import android.widget.Toast;

import com.google.firebase.FirebaseApp;
import com.google.firebase.database.DataSnapshot;
import com.google.firebase.database.DatabaseError;
import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.FirebaseDatabase;
import com.google.firebase.database.ValueEventListener;
import java.util.concurrent.atomic.AtomicInteger;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    private EditText etName, etCourse, etFees;
    private Button btnSave, btnView;
    private TableLayout tableLayout;
    private SQLiteDatabase db;
    private String selectedName; // To track the selected record for editing

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        etName = findViewById(R.id.et_name);
```

```

etCourse = findViewById(R.id.et_course);
etFees = findViewById(R.id.et_fees);
btnSave = findViewById(R.id.btn_save);
btnView = findViewById(R.id.btn_view);
tableLayout = findViewById(R.id.tableLayout);

// Initialize SQLite database
DBHelper dbHelper = new DBHelper(this);
db = dbHelper.getWritableDatabase();

// Save record to SQLite
btnSave.setOnClickListener(v -> saveRecord());

// View records in a table format
btnView.setOnClickListener(v -> viewRecords());
}

private void saveRecord() {
    String name = etName.getText().toString();
    String course = etCourse.getText().toString();
    String fees = etFees.getText().toString();

    if (name.isEmpty() || course.isEmpty() || fees.isEmpty()) {
        Toast.makeText(this, "Please fill all fields", Toast.LENGTH_SHORT).show();
        return;
    }

    // Save to SQLite
    ContentValues values = new ContentValues();
    values.put("name", name);
    values.put("course", course);
    values.put("fees", fees);

    if (selectedName == null) {
        db.insert("CourseTable", null, values);
        Toast.makeText(this, "Record Added", Toast.LENGTH_SHORT).show();
    } else {
        db.update("CourseTable", values, "name=?", new String[]{selectedName});
        Toast.makeText(this, "Record Updated", Toast.LENGTH_SHORT).show();
        selectedName = null; // Reset the selected name
    }

    clearFields();
    viewRecords(); // Refresh the records displayed
}

private void viewRecords() {
    tableLayout.removeAllViews();

```

```

        tableLayout.setVisibility(View.VISIBLE);

        Cursor cursor = db.rawQuery("SELECT * FROM CourseTable", null);
        if (cursor.moveToFirst()) {
            do {
                TableRow row = new TableRow(this);
                TextView name = new TextView(this);
                TextView course = new TextView(this);
                TextView fees = new TextView(this);
                Button btnEdit = new Button(this);
                Button btnDelete = new Button(this);

                String recordName = cursor.getString(1);
                name.setText(recordName);
                course.setText(cursor.getString(2));
                fees.setText(cursor.getString(3));

                btnEdit.setText("Edit");
                btnEdit.setOnClickListener(v -> editRecord(recordName, course.getText().toString(),
fees.getText().toString()));

                btnDelete.setText("Delete");
                btnDelete.setOnClickListener(v -> deleteRecord(recordName));

                row.addView(name);
                row.addView(course);
                row.addView(fees);
                row.addView(btnEdit);
                row.addView(btnDelete);
                tableLayout.addView(row);
            } while (cursor.moveToNext());
        }
        cursor.close();
    }

    private void editRecord(String name, String course, String fees) {
        etName.setText(name);
        etCourse.setText(course);
        etFees.setText(fees);
        selectedName = name; // Store the name of the selected record for editing
        btnSave.setText("Update");
    }

    private void deleteRecord(String name) {
        db.delete("CourseTable", "name=?", new String[]{name});
        Toast.makeText(this, "Record Deleted", Toast.LENGTH_SHORT).show();
        viewRecords(); // Refresh the records displayed
    }

```

```

private void clearFields() {
    etName.setText("");
    etCourse.setText("");
    etFees.setText("");
    btnSave.setText("Save"); // Reset button text
}
}

```

File: DBHelper

```

package com.example.labexam;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DBHelper extends SQLiteOpenHelper {
    private static final String DATABASE_NAME = "courses.db";
    private static final int DATABASE_VERSION = 1;

    public DBHelper(Context context) {
        super(context, DATABASE_NAME, null, DATABASE_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        String CREATE_COURSE_TABLE = "CREATE TABLE CourseTable (" +
            "id INTEGER PRIMARY KEY AUTOINCREMENT," +
            "name TEXT," +
            "course TEXT," +
            "fees TEXT)";
        db.execSQL(CREATE_COURSE_TABLE);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS CourseTable");
        onCreate(db);
    }
}

```

File: Android_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">

```

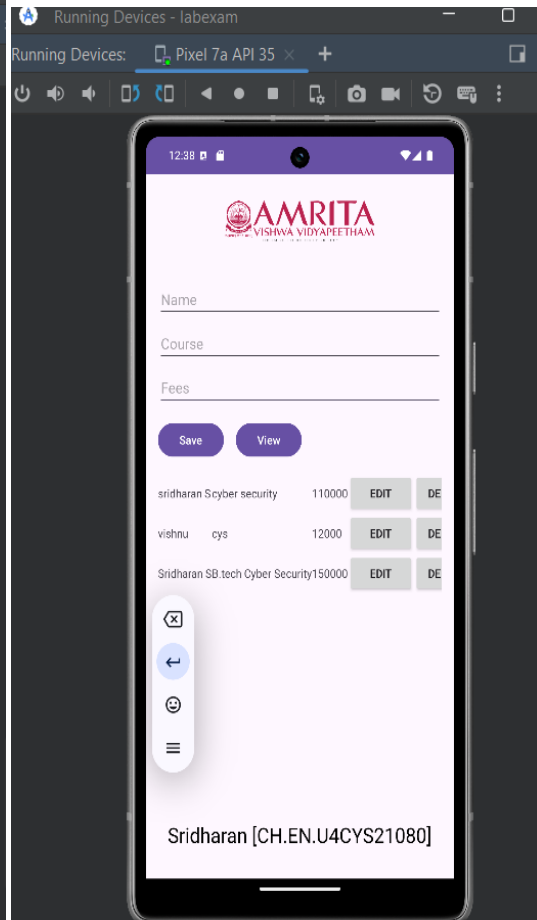
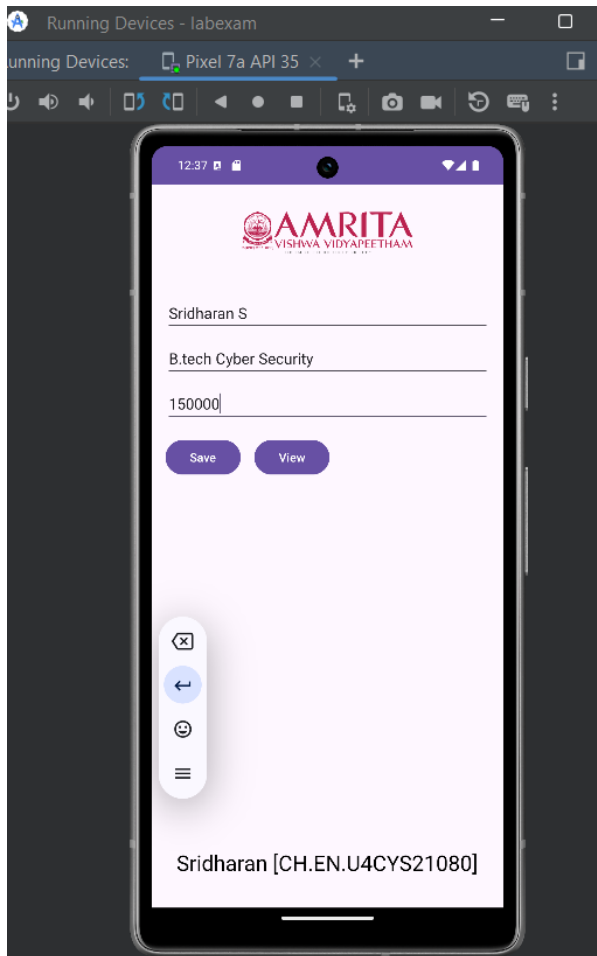
```
<application
  android:allowBackup="true"
  android:dataExtractionRules="@xml/data_extraction_rules"
  android:fullBackupContent="@xml/backup_rules"
  android:icon="@drawable/logo"
  android:label="@string/app_name"
  android:roundIcon="@mipmap/ic_launcher_round"
  android:supportsRtl="true"
  android:theme="@style/Theme.Labexam"
  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>
</application>

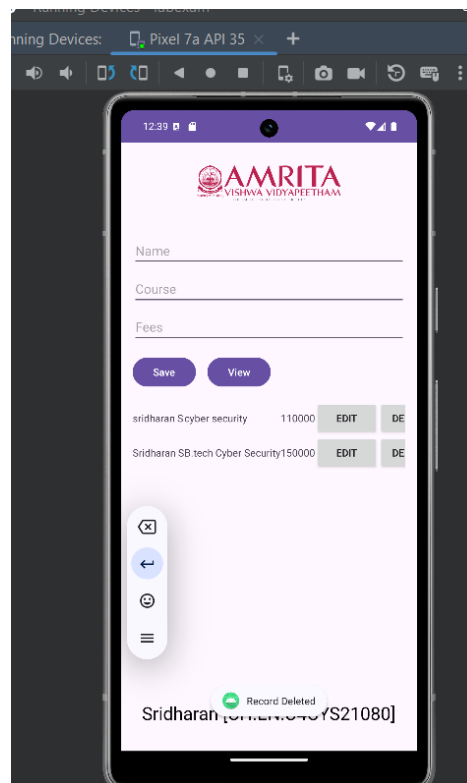
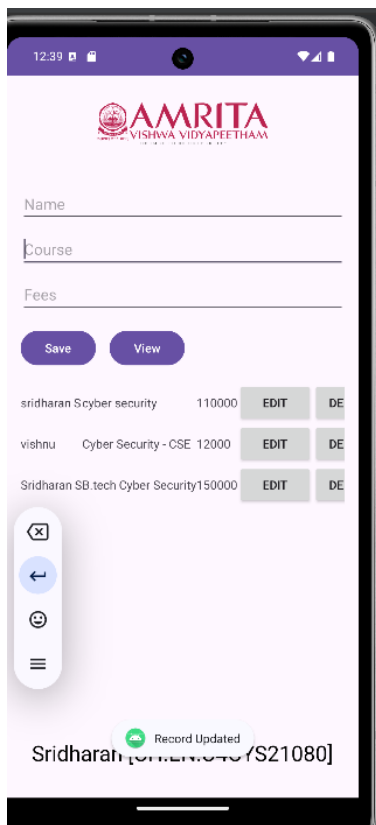
</manifest>
```


Output:

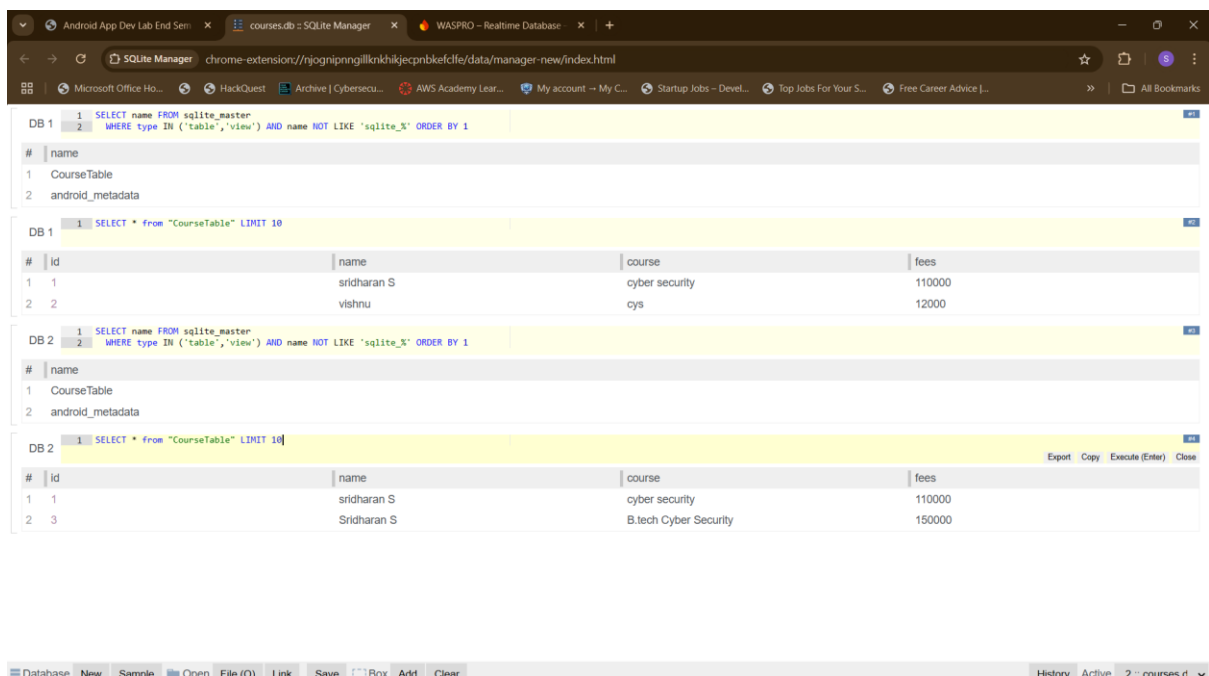
Record added and displayed



Record updated and record deleted are performed below



Sqlite database connection and records



Firebase Database connection

WASPRO - Realtime Database

console.firebase.google.com/project/waspro-eba10/database/waspro-eba10-default-rtdb/data

Microsoft Office Ho... HackQuest Archive | Cybersecu... AWS Academy Lear... My account - My C... Startup Jobs - Devel... Top Jobs For Your S... Free Career Advice J... All Bookmarks

Firestore

Project Overview

Generative AI

Build with Gemini

Project shortcuts

Realtime Database

Product categories

Build

Run

Analytics

All products

Related development tools

IDX ⓘ ⓘ

Checks ⓘ ⓘ

Spark
No cost (\$0/month) Upgrade

WASPRO

Realtime Database

Need help with Realtime Database? Ask Gemini

Data Rules Backups Usage Extensions

https://waspro-eba10-default-rtdb.firebaseio.com

https://waspro-eba10-default-rtdb.firebaseio.com/

course

1

data1: "Sridharan"

data2: Cyber Security ABC

data3: "120000"

Database location: United States (us-central1)