

# Android Application Development 20CYS404

## FINAL LAB EXAM

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### Experiment-2:

1. Create a Course Registration form, Name, Course and Fees,
  2. If OK button is pressed then the data should be saved in SQL lite and the “Record Added” toast should display.
  3. If view is clicked all the previous data should be displayed inside a TABLE  
Format
  4. Perform:
    - EDIT
    - Delete
    - Back operations
- Storage should be done in SQLite and Firebase

### Solution:

Creating 3 activities in one project:

1. For Main Page
2. For View Page
3. For Manipulate Page

### Codes:

#### MainActivity.java:

```
package com.example.courseregistration;

import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
```

```

EditText etName, etCourse, etFee;
Button btnOk, btnView, btnEdit, btnDelete, btnBack, btnManipulate;

DatabaseHelper db;

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

    etName = findViewById(R.id.etName);
    etCourse = findViewById(R.id.etCourse);
    etFee = findViewById(R.id.etFee);
    btnOk = findViewById(R.id.btnOk);
    btnView = findViewById(R.id.btnView);
    btnManipulate = findViewById(R.id.btnManipulate);

    db = new DatabaseHelper(this);

    btnManipulate.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            // Start ManipulateActivity
            Intent intent = new Intent(MainActivity.this, ManipulateActivity.class);
            startActivity(intent);
        }
    });

    btnOk.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            String name = etName.getText().toString();
            String course = etCourse.getText().toString();
            int fee = Integer.parseInt(etFee.getText().toString());

            boolean isInserted = db.insertData(name, course, fee);
            if (isInserted)
                Toast.makeText(MainActivity.this, "Record Added", Toast.LENGTH_LONG).show();
            else
                Toast.makeText(MainActivity.this, "Error Adding Record", Toast.LENGTH_LONG).show();
        }
    });

    btnView.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Intent intent = new Intent(MainActivity.this, ViewDetailsActivity.class);
            startActivity(intent);
        }
    });
}

```

```

public void showMessage(String title, String message) {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}
}

```

### **activity\_main.xml:**

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="100dp"
        android:layout_marginLeft="150dp"
        android:text="Course registration"/>

    <EditText
        android:id="@+id/etName"
        android:layout_width="220dp"
        android:layout_height="wrap_content"
        android:hint="Name"
        android:layout_marginTop="160dp"
        android:layout_marginLeft="100dp"
        />

    <EditText
        android:id="@+id/etCourse"
        android:layout_width="220dp"
        android:layout_height="wrap_content"
        android:hint="Course"
        android:layout_marginTop="240dp"
        android:layout_marginLeft="100dp"/>

    <EditText
        android:id="@+id/etFee"
        android:layout_width="220dp"
        android:layout_height="wrap_content"
        android:hint="Fee"
        android:inputType="number"
        android:layout_marginTop="320dp"

```

```

        android:layout_marginLeft="100dp"/>

<Button
    android:id="@+id/btnOk"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="OK"
    android:layout_marginTop="380dp"
    android:layout_marginLeft="120dp"/>

<Button
    android:id="@+id/btnView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="VIEW"
    android:layout_marginTop="380dp"
    android:layout_marginLeft="210dp"/>

<Button
    android:id="@+id/btnManipulate"
    android:layout_width="140dp"
    android:layout_marginLeft="140dp"
    android:layout_height="wrap_content"
    android:text="MANIPULATE"
    android:layout_marginTop="430dp"/>

<TableLayout
    android:id="@+id/tableLayout"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:stretchColumns="1" />

</RelativeLayout>

```

### **ManipulateActivity.java:**

```

package com.example.courseregistration;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

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

```

```

public class ManipulateActivity extends AppCompatActivity {

    EditText etId, etName, etCourse, etFee;
    Button btnEdit, btnDelete, btnBack;
    DatabaseHelper db;

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

        etId = findViewById(R.id.etId);
        etName = findViewById(R.id.etName);
        etCourse = findViewById(R.id.etCourse);
        etFee = findViewById(R.id.etFee);
        btnEdit = findViewById(R.id.btnEdit);
        btnDelete = findViewById(R.id.btnDelete);
        btnBack = findViewById(R.id.btnBack);
        db = new DatabaseHelper(this);

        btnEdit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String id = etId.getText().toString();
                String newName = etName.getText().toString();
                String newCourse = etCourse.getText().toString();
                int newFee = Integer.parseInt(etFee.getText().toString());

                boolean isUpdated = db.updateData(id, newName, newCourse, newFee);
                if (isUpdated)
                    Toast.makeText(ManipulateActivity.this, "Record Updated", Toast.LENGTH_LONG).show();
                else
                    Toast.makeText(ManipulateActivity.this, "Error Updating Record", Toast.LENGTH_LONG).show();
            }
        });

        btnDelete.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String id = etId.getText().toString();
                Integer deletedRows = db.deleteData(id);
                if (deletedRows > 0)
                    Toast.makeText(ManipulateActivity.this, "Record Deleted", Toast.LENGTH_LONG).show();
                else
                    Toast.makeText(ManipulateActivity.this, "Error Deleting Record", Toast.LENGTH_LONG).show();
            }
        });

        btnBack.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                finish(); // Go back to the previous screen
            }
        });
    }
}

```

```

    }
    });
}
}

```

### **activity\_manipulate.xml:**

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ManipulateActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Course Registration"
        android:layout_marginTop="150dp"
        android:textSize="30dp"
        android:layout_marginLeft="80dp"/>
    <EditText
        android:id="@+id/etId"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="ID"
        android:layout_marginTop="200dp"
        android:inputType="number"
        android:textAlignment="center" />

    <EditText
        android:id="@+id/etName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Name"
        android:layout_marginTop="250dp"
        android:textAlignment="center"/>

    <EditText
        android:id="@+id/etCourse"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Course"
        android:layout_marginTop="300dp"
        android:textAlignment="center"/>

    <EditText
        android:id="@+id/etFee"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Fee"

```

```

        android:layout_marginTop="350dp"
        android:inputType="number"
        android:textAlignment="center"/>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:gravity="center"
    android:paddingTop="460dp">

<Button
    android:id="@+id/btnEdit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="EDIT"
    android:layout_marginEnd="8dp"/>

<Button
    android:id="@+id/btnDelete"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="DELETE"
    android:layout_marginEnd="8dp"/>

<Button
    android:id="@+id/btnBack"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="BACK"/>

</LinearLayout>
</RelativeLayout>

```

### **ViewDetailsActivity.java:**

```

package com.example.courseregistration;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

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

```

```

public class ViewDetailsActivity extends AppCompatActivity {
    TextView tvDetails;
    Button btnBack;
    DatabaseHelper db;

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

        tvDetails = findViewById(R.id.tvDetails);
        btnBack = findViewById(R.id.btnBack);
        db = new DatabaseHelper(this);

        // Fetch and display data
        Cursor res = db.getAllData();
        if (res.getCount() == 0) {
            Toast.makeText(ViewDetailsActivity.this, "No Records Found", Toast.LENGTH_LONG).show();
            return;
        }

        StringBuilder buffer = new StringBuilder();
        while (res.moveToNext()) {
            buffer.append("ID: ").append(res.getString(0)).append("\n");
            buffer.append("Name: ").append(res.getString(1)).append("\n");
            buffer.append("Course: ").append(res.getString(2)).append("\n");
            buffer.append("Fee: ").append(res.getString(3)).append("\n\n");
        }

        tvDetails.setText(buffer.toString());

        // Back button functionality
        btnBack.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                finish(); // Go back to MainActivity
            }
        });
    }
}

```

#### **activity\_view\_details.xml:**

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ViewDetailsActivity">

```



```

<TextView
    android:id="@+id/tvDetails"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="50dp"
    android:layout_marginLeft="20dp"
    android:textSize="18sp"/>

```

```

<Button
    android:id="@+id/btnBack"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="440dp"
    android:layout_marginLeft="170dp"
    android:text="Back" />

```

```

</RelativeLayout>

```

### **AndroidManifest.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="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.CourseRegistration"
        tools:targetApi="31">
        <activity
            android:name=".ViewDetailsActivity"/>
        <activity android:name=".ManipulateActivity" />
        <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>

```

### DatabaseHelper.java:

```
package com.example.courseregistration;

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

public class DatabaseHelper extends SQLiteOpenHelper {

    private static final String DATABASE_NAME = "course_registration.db";
    private static final String TABLE_NAME = "course_table";
    private static final String COL_ID = "ID";
    private static final String COL_NAME = "NAME";
    private static final String COL_COURSE = "COURSE";
    private static final String COL_FEE = "FEE";

    public DatabaseHelper(Context context) {
        super(context, DATABASE_NAME, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("CREATE TABLE " + TABLE_NAME + " (ID INTEGER PRIMARY KEY  
AUTOINCREMENT, NAME TEXT, COURSE TEXT, FEE INTEGER)");
    }

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

    public boolean insertData(String name, String course, int fee) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(COL_NAME, name);
        contentValues.put(COL_COURSE, course);
        contentValues.put(COL_FEE, fee);
        long result = db.insert(TABLE_NAME, null, contentValues);
        return result != -1;
    }

    public Cursor getAllData() {
        SQLiteDatabase db = this.getWritableDatabase();
        return db.rawQuery("SELECT * FROM " + TABLE_NAME, null);
    }

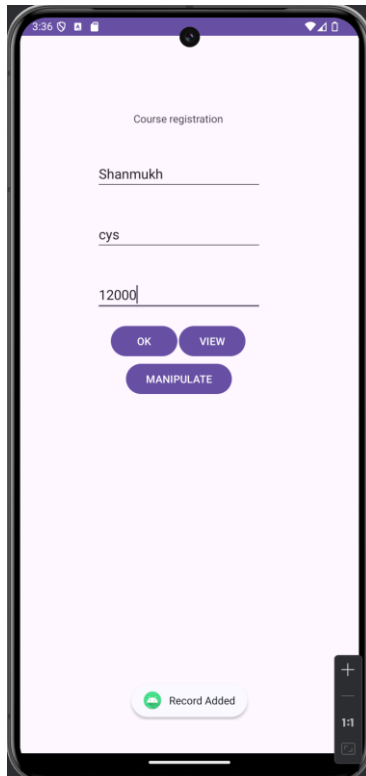
    public boolean updateData(String id, String name, String course, int fee) {
        SQLiteDatabase db = this.getWritableDatabase();
    }
```

```
ContentValues contentValues = new ContentValues();
contentValues.put(COL_NAME, name);
contentValues.put(COL_COURSE, course);
contentValues.put(COL_FEE, fee);
db.update(TABLE_NAME, contentValues, "ID = ?", new String[]{id});
return true;
}

public Integer deleteData(String id) {
    SQLiteDatabase db = this.getWritableDatabase();
    return db.delete(TABLE_NAME, "ID = ?", new String[]{id});
}
}
```

## Output:

### Virtual Output:



Course registration

Shanmukh

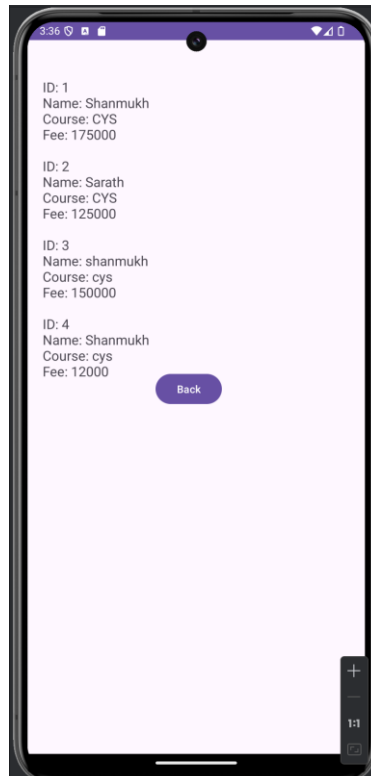
cys

12000

OK VIEW

MANIPULATE

Record Added



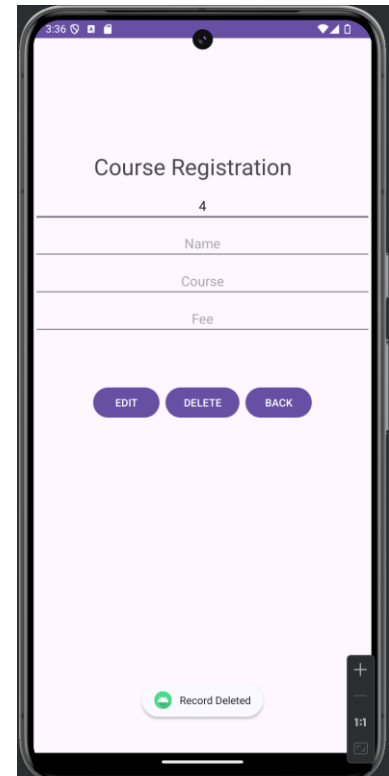
ID: 1  
Name: Shanmukh  
Course: CYS  
Fee: 175000

ID: 2  
Name: Sarath  
Course: CYS  
Fee: 125000

ID: 3  
Name: shanmukh  
Course: cys  
Fee: 150000

ID: 4  
Name: Shanmukh  
Course: cys  
Fee: 12000

Back



Course Registration

4

Name

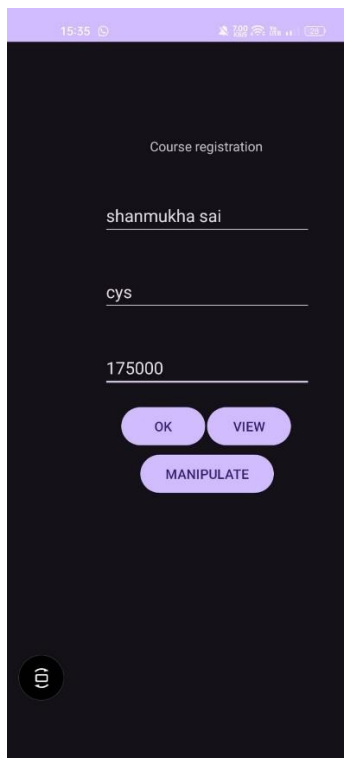
Course

Fee

EDIT DELETE BACK

Record Deleted

### Mobile Output:



Course registration

shanmukha sai

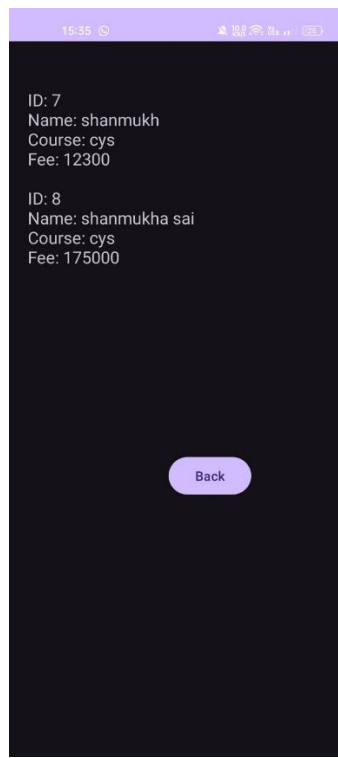
cys

175000

OK VIEW

MANIPULATE

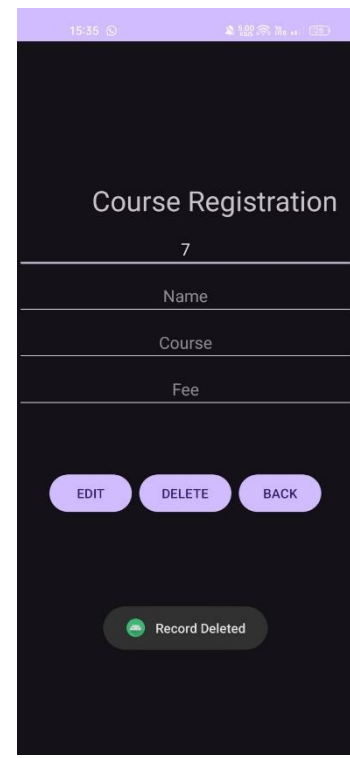
Record Added



ID: 7  
Name: shanmukh  
Course: cys  
Fee: 12300

ID: 8  
Name: shanmukha sai  
Course: cys  
Fee: 175000

Back



Course Registration

7

Name

Course

Fee

EDIT DELETE BACK

Record Deleted

