5. Develop an application that makes use of database.

Objective:

XML Code:

```
<?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"
    android:padding="16dp">

    <EditText
        android:id="@+id/titleEditText"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Title" />

    <EditText
        android:id="@+id/descriptionEditText"
        android:layout_width="match_parent"
        android:layout_height="48dp"
        android:hint="Description" />

    <Button
        android:id="@+id/addButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Add Note" />

    <ListView
        android:id="@+id/notesListView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

    <TextView
```

```
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:fontFamily="sans-serif"
    android:gravity="bottom|center"
    android:text="Saksham Gupta"
    android:textSize="25sp" />
</LinearLayout>
```

Java Code (DBHelper.java):

```
package com.example.android_db;

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

public class DBHelper extends SQLiteOpenHelper {

   private static final String DATABASE_NAME = "Notes.db";
   private static final int DATABASE_VERSION = 1;
   private static final String TABLE_NAME = "notes";
   private static final String COLUMN_ID = "id";
   private static final String COLUMN_TITLE = "title";
   private static final String COLUMN_DESCRIPTION = "description";

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

   @Override
   public void onCreate(SQLiteDatabase db) {
      String CREATE_TABLE = "CREATE TABLE " + TABLE_NAME + "("
            + COLUMN_ID + " INTEGER PRIMARY KEY AUTOINCREMENT,"
            + COLUMN_TITLE + " TEXT,"
            + COLUMN_DESCRIPTION + " TEXT" + ")";
```

```
        db.execSQL(CREATE_TABLE);
    }

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

    // Insert a new note
    public boolean insertNote(String title, String description) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues values = new ContentValues();
        values.put(COLUMN_TITLE, title);
        values.put(COLUMN_DESCRIPTION, description);
        long result = db.insert(TABLE_NAME, null, values);
        return result != -1;  // returns false if insert fails
    }

    // Get all notes
    public Cursor getAllNotes() {
        SQLiteDatabase db = this.getReadableDatabase();
        return db.rawQuery("SELECT * FROM " + TABLE_NAME, null);
    }

    // Delete a note
    public boolean deleteNoteById(int id) {
        SQLiteDatabase db = this.getWritableDatabase();
        return db.delete(TABLE_NAME, COLUMN_ID + "=" + id, null) > 0;
    }
}
```

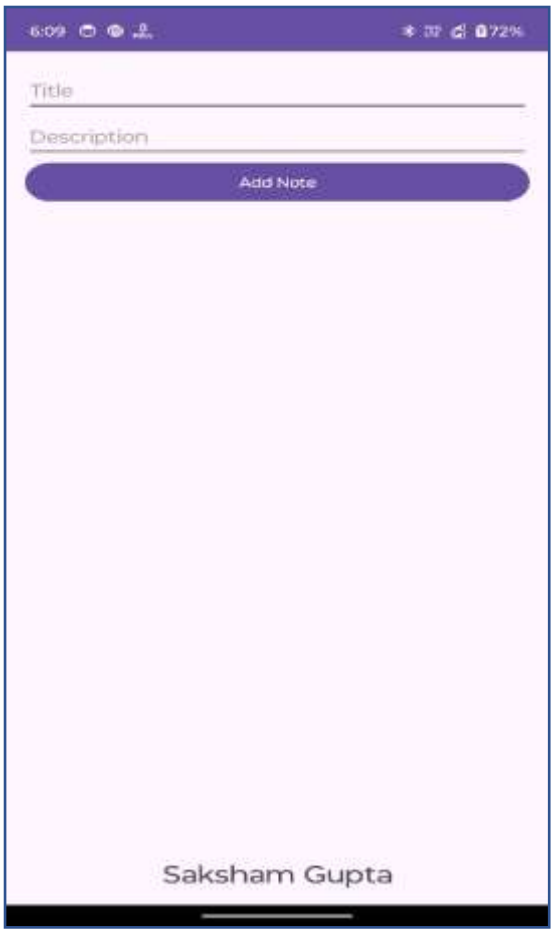
Java Code(MainActivity.java):

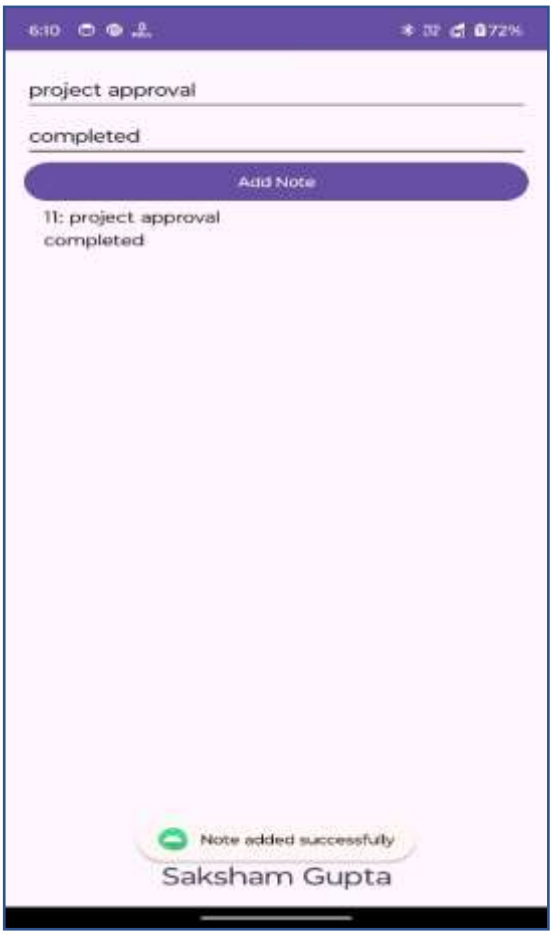
```
package com.example.android_db;

import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.Toast;
import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {

    DBHelper dbHelper;
    EditText titleEditText, descriptionEditText;
    Button addButton;
    ListView notesListView;
    ArrayList<String> notesList;
    ArrayAdapter<String> notesAdapter;

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

        dbHelper = new DBHelper(this);
        titleEditText = findViewById(R.id.titleEditText);
        descriptionEditText = findViewById(R.id.descriptionEditText);
        addButton = findViewById(R.id.addButton);
        notesListView = findViewById(R.id.notesListView);
        notesList = new ArrayList<>();

        loadNotes();

        addButton.setOnClickListener(v -> {
```

```
            String title = titleEditText.getText().toString();
            String description = descriptionEditText.getText().toString();

            if (title.isEmpty() || description.isEmpty()) {
                Toast.makeText(MainActivity.this, "Please enter both title and
description", Toast.LENGTH_SHORT).show();
                return;
            }

            boolean isInserted = dbHelper.insertNote(title, description);
            if (isInserted) {
                Toast.makeText(MainActivity.this, "Note added successfully",
Toast.LENGTH_SHORT).show();
                loadNotes();
            } else {
                Toast.makeText(MainActivity.this, "Failed to add note",
Toast.LENGTH_SHORT).show();
            }
        });

        notesListView.setOnItemLongClickListener((parent, view, position, id) -> {
            String selectedItem = notesList.get(position);
            int noteId = Integer.parseInt(selectedItem.split(":")[0]);
            boolean isDeleted = dbHelper.deleteNoteById(noteId);
            if (isDeleted) {
                Toast.makeText(MainActivity.this, "Note deleted",
Toast.LENGTH_SHORT).show();
                loadNotes();
            } else {
                Toast.makeText(MainActivity.this, "Failed to delete note",
Toast.LENGTH_SHORT).show();
            }
            return true;
        });
    }

    private void loadNotes() {
```

```
        Cursor cursor = dbHelper.getAllNotes();
        notesList.clear();
        if (cursor.moveToFirst()) {
            do {
                int id = cursor.getInt(0);
                String title = cursor.getString(1);
                String description = cursor.getString(2);
                notesList.add(id + ": " + title + "\n" + description);
            } while (cursor.moveToNext());
        }
        notesAdapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, notesList);
        notesListView.setAdapter(notesAdapter);
        notesAdapter.notifyDataSetChanged();
    }
}
```

Output:





Toast Message

Objective: The objective of this project is to develop a simple Android application that demonstrates the use of a Toast message in Java. The application will include a user interface with a button, and when the button is clicked, a Toast message will appear on the screen providing brief feedback to the user.

Xml Code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
   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:orientation="vertical"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="50sp"
   tools:context=".MainActivity">

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="SignUp"
      android:layout_gravity="center"
      android:textSize="35sp"/>
   <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="horizontal">
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="User Id"/>
```

```
    <EditText
        android:id="@+id/et1"
        android:layout_width="250dp"
        android:layout_height="50dp"
        android:layout_marginLeft="45dp"
        android:hint="UserId"/>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="30dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password"/>

    <EditText
        android:id="@+id/et2"
        android:layout_width="250dp"
        android:layout_height="50dp"
        android:hint="Password"
        android:layout_marginLeft="30dp"/>
</LinearLayout>

<Button
    android:id="@+id/btn"
    android:layout_width="wrap_content"
    android:layout_height="50dp"
    android:layout_marginTop="30dp"
    android:layout_gravity="center"
    android:text="Submit"/>
<TextView
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:fontFamily="sans-serif"
```

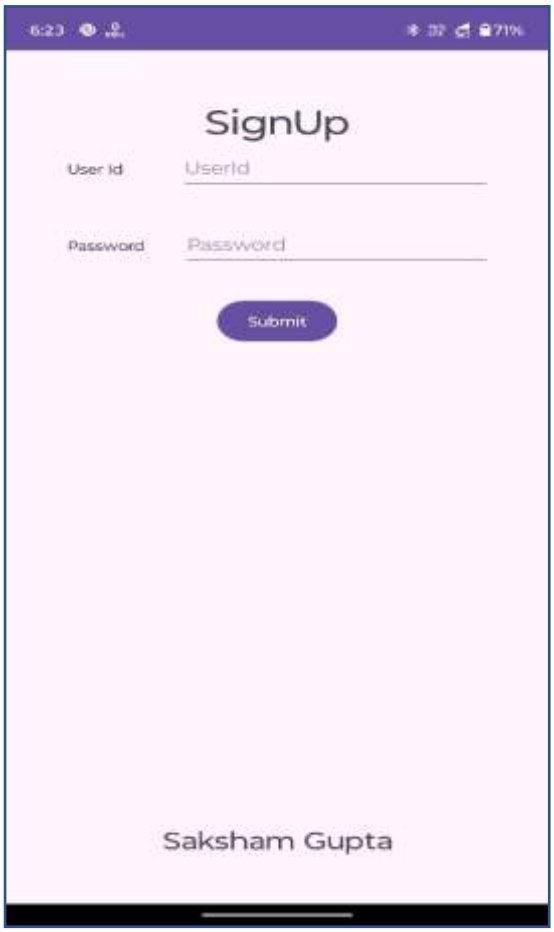
```
    android:gravity="bottom|center"
    android:text="Saksham Gupta"
    android:textSize="25sp" />
</LinearLayout>
```

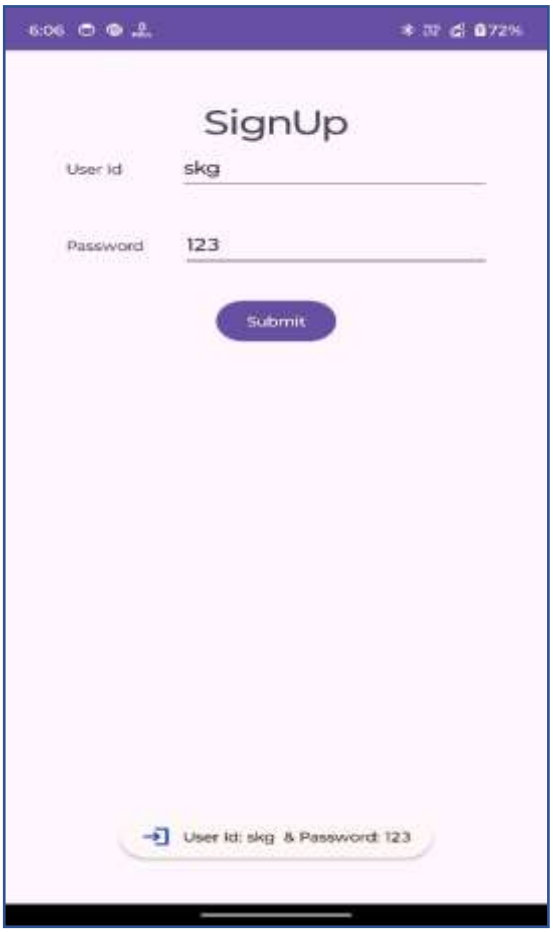
Java Code

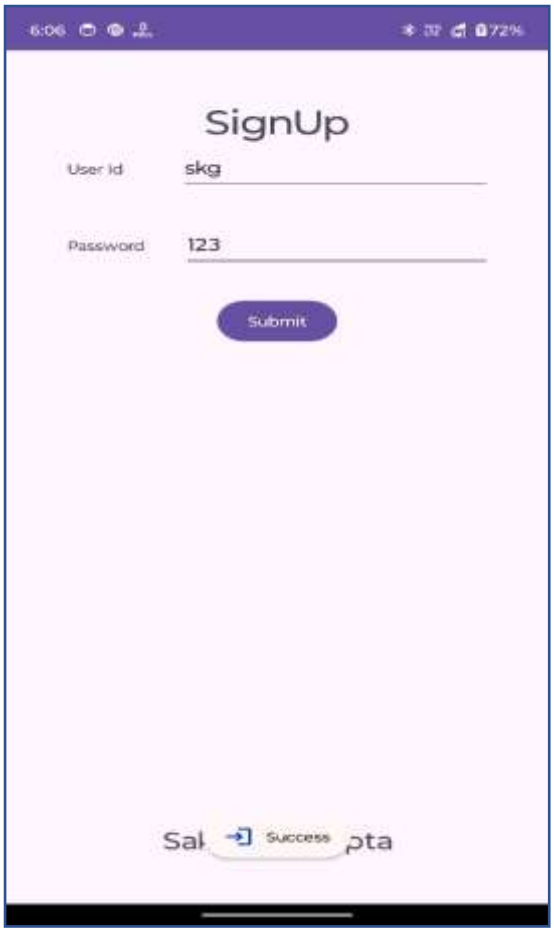
```
package com.example.toastmsg;

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 {

   private EditText editText1,editText2;
   private Button button;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      editText1 = findViewById(R.id.et1);
      editText2 = findViewById(R.id.et2);
      button = findViewById(R.id.btn);

      button.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
          String text = editText1.getText().toString();
          String text1 = editText2.getText().toString();

            Toast.makeText(MainActivity.this, "User Id: skg  & Password: 123",
```

```
Toast.LENGTH_SHORT).show();

            if (text.equals("skg") && text1.equals("123")) {

                Toast.makeText(MainActivity.this, "Success",
Toast.LENGTH_LONG).show();
            }
            else {
                Toast.makeText(MainActivity.this, "Failed",
Toast.LENGTH_SHORT).show();
            }
        }
    });
  }
}
```

Output:






6:06
72%
SignUp
User id
skg
Password
123
Submit
Success