Mobile Computing Lab
Aim: Write a Program to insert and display data from database using Android/other

Aniket Mishra
Roll No.: 34

29th November 2024

MainActivity.java

```
package com.example.android_database;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    DatabaseHelper databaseHelper;
    EditText editTextName, editTextAge;
    Button buttonInsert, buttonDisplay;
    TextView textViewDisplay;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        databaseHelper = new DatabaseHelper(this);
        editTextName = findViewById(R.id.editTextName);
        editTextAge = findViewById(R.id.editTextAge);
        buttonInsert = findViewById(R.id.buttonInsert);
        buttonDisplay = findViewById(R.id.buttonDisplay);
        textViewDisplay = findViewById(R.id.textViewDisplay);
        buttonInsert.setOnClickListener(v -> {
            String name = editTextName.getText().toString();
            String ageStr = editTextAge.getText().toString();
            if (name.isEmpty() || ageStr.isEmpty()) {
                Toast.makeText(MainActivity.this, "Please enter all fields", Toast.
                    LENGTH_SHORT).show();
                return;
            }
            int age = Integer.parseInt(ageStr);
            boolean isInserted = databaseHelper.insertData(name, age);
            if (isInserted) {
                Toast.makeText(MainActivity.this, "Data Inserted", Toast.
                    LENGTH_SHORT).show();
                editTextName.setText("");
                editTextAge.setText("");
            } else {
                Toast.makeText(MainActivity.this, "Insertion Failed", Toast.
                    LENGTH_SHORT).show();
            }
        });
        buttonDisplay.setOnClickListener(v -> {
            Cursor cursor = databaseHelper.getAllData();
            if (cursor.getCount() == 0) {
```

```
                textViewDisplay.setText("No Data Found");
                return;
            }
            StringBuilder stringBuilder = new StringBuilder();
            while (cursor.moveToNext()) {
                stringBuilder.append("ID: ").append(cursor.getInt(0)).append("\n");
                stringBuilder.append("Name: ").append(cursor.getString(1)).append
                    ("\n");
                stringBuilder.append("Age: ").append(cursor.getInt(2)).append("\n\n
                    ");
            }
            textViewDisplay.setText(stringBuilder.toString());
        });
    }
}
```

activitymain.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"
    android:padding="16dp">
    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Name" />
    <EditText
        android:id="@+id/editTextAge"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Age"
        android:inputType="number" />
    <Button
        android:id="@+id/buttonInsert"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:backgroundTint="@color/black"
        android:text="Insert Data" />
    <Button
        android:id="@+id/buttonDisplay"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:backgroundTint="@color/black"
        android:text="Display Data" />
    <TextView
        android:id="@+id/textViewDisplay"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:paddingTop="16dp" />
</LinearLayout>
```

DatabaseHelper.java

```
    package com.example.android_database;

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 = "UserDB";
    private static final String TABLE_NAME = "Users";
    private static final String COLUMN_ID = "ID";
    private static final String COLUMN_NAME = "Name";
    private static final String COLUMN_AGE = "Age";
    public DatabaseHelper(Context context) {
        super(context, DATABASE_NAME, null, 1);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String createTable = "CREATE TABLE " + TABLE_NAME + "("
                + COLUMN_ID + " INTEGER PRIMARY KEY AUTOINCREMENT, "
                + COLUMN_NAME + " TEXT, "
                + COLUMN_AGE + " INTEGER)";
        db.execSQL(createTable);
    }
    @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, int age) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(COLUMN_NAME, name);
        contentValues.put(COLUMN_AGE, age);
        long result = db.insert(TABLE_NAME, null, contentValues);
        return result != -1; // Returns true if insert is successful
    }
    public Cursor getAllData() {
        SQLiteDatabase db = this.getReadableDatabase();
        return db.rawQuery("SELECT * FROM " + TABLE_NAME, null);
    }
}
```

Output:

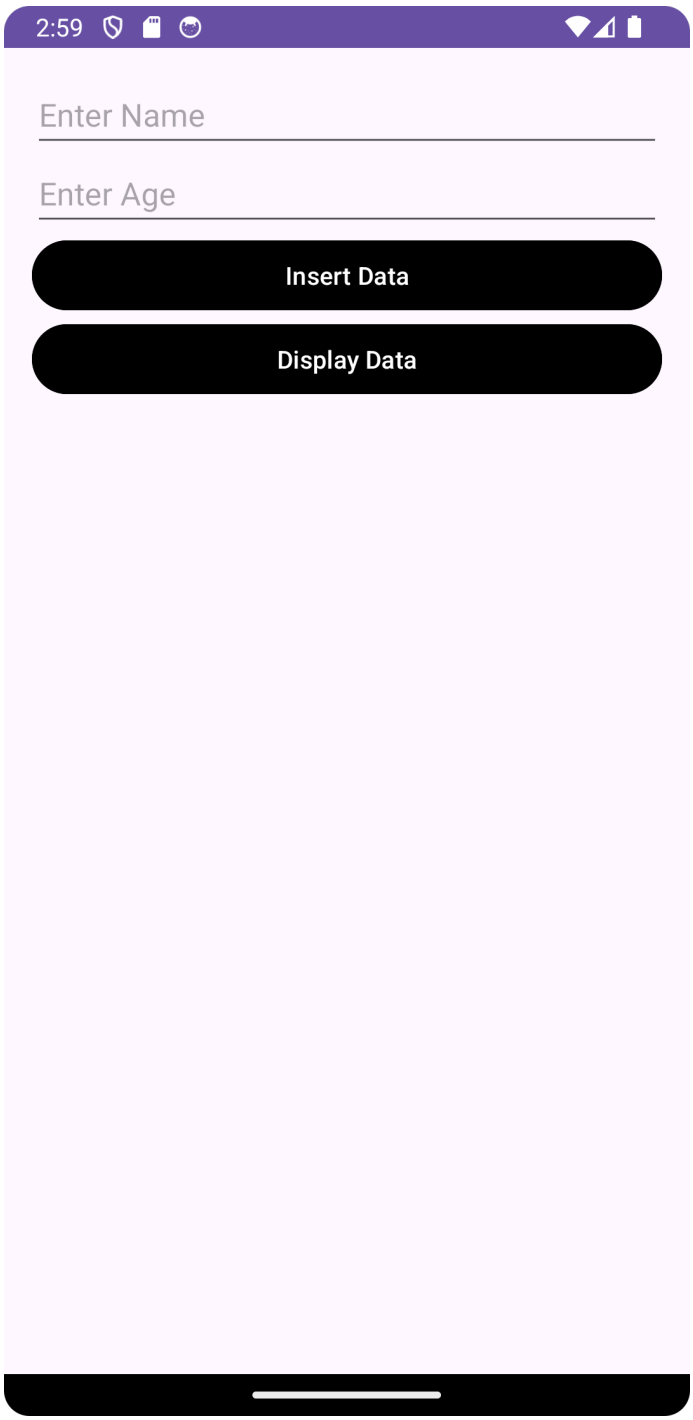

Figure 1: Interface

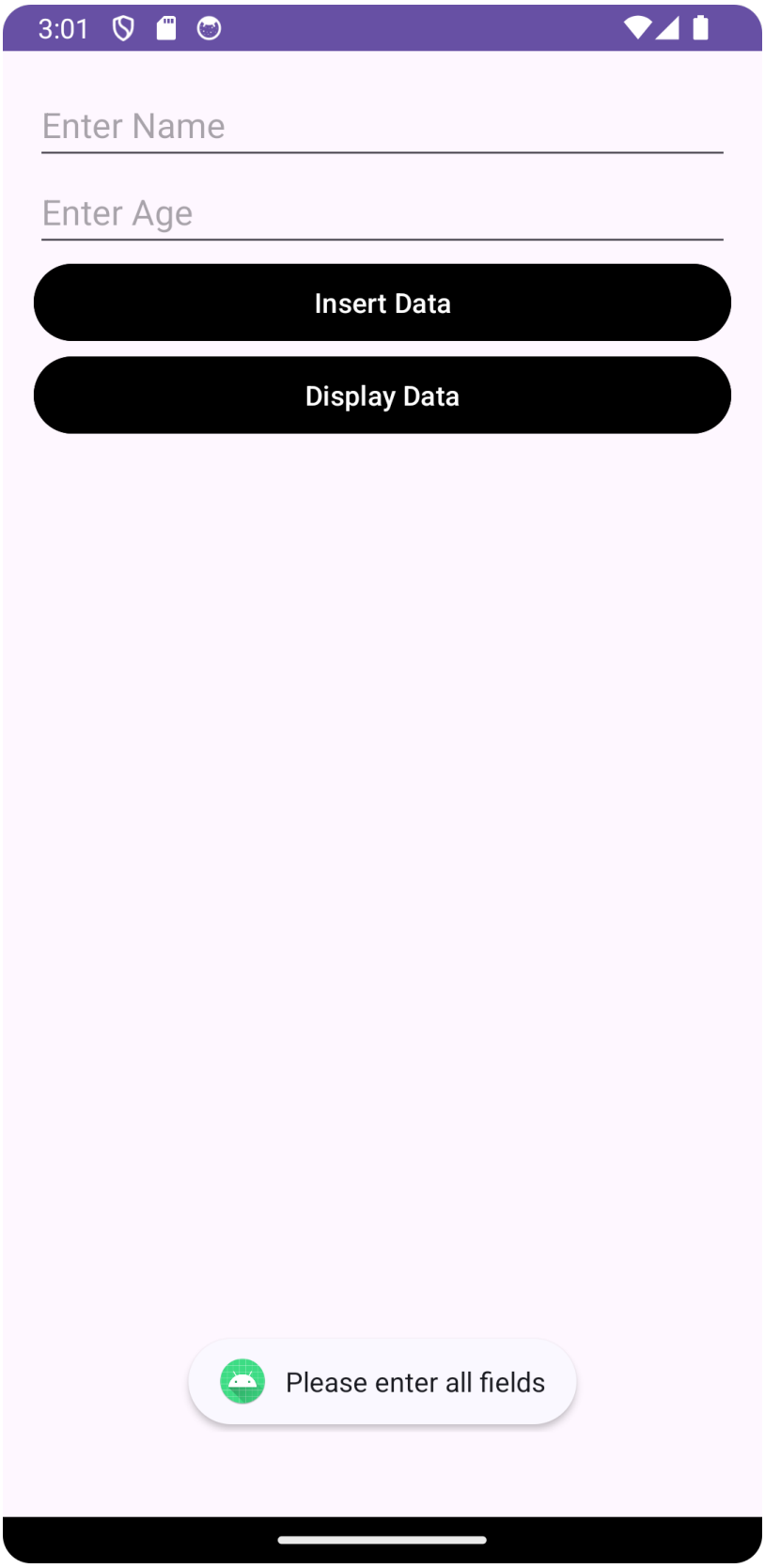

Figure 2: Empty Data Validation

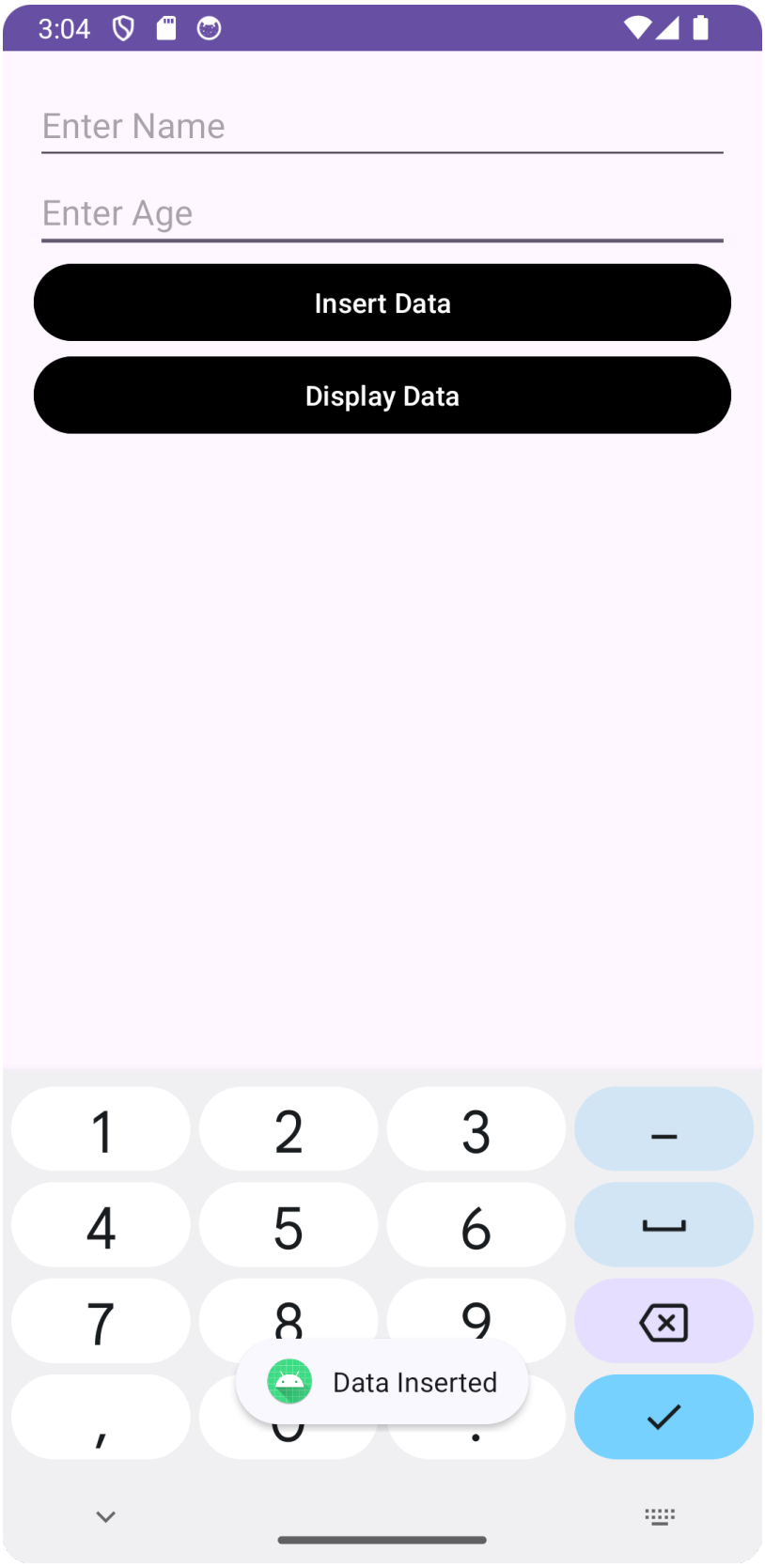

Figure 3: Inserted Data Toast

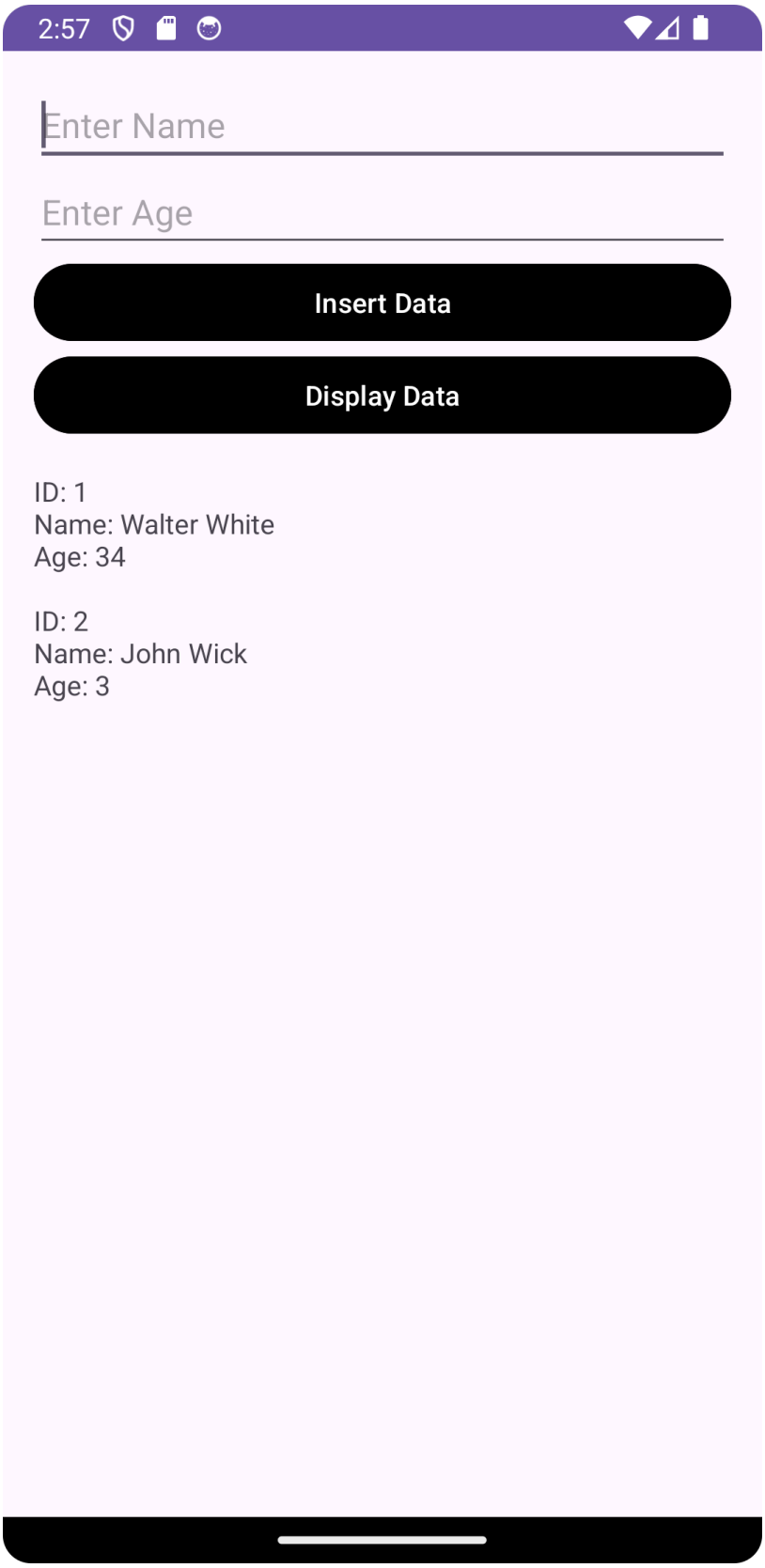

Figure 4: Inserted Users Displayed