Student Information App with Navigation

Objective

In this to-do, you will create a Student Information application that demonstrates your understanding of fundamental Android development concepts. The app will have two main fragments accessible through a bottom navigation bar, combining multiple Android components into a functional application.

Technical Requirements

1. **SharedPreferences with Singleton Pattern**
   - Create a singleton class called `SharedPrefManager`
   - Store at least 6 pieces of profile information:
     - Full Name
     - Student ID
     - Email
     - Phone Number
     - Department
     - Year of Study

2. **SQLite Database**
   - Create a database helper class called `DatabaseHelper`
   - Database name: `StudentNotes.db`
   - Create a `notes` table with columns:
     - id (Primary Key, Auto-increment)
     - title (Text)
     - content (Text)
   - Implement methods to:

○　Add a new note
　　　　　○　Get the latest note
　　　　　○　Get total note count
　　　　　○　Delete all notes

3. Two Fragments with Navigation
    ● **ProfileFragment**: Display form for user information
    ● **NotesFragment**: Display interface for creating notes
    ● Implement a fragment transaction to switch between them
    ● Add visual feedback (button color change) to show active fragment:

Hint:

```
button.setBackgroundColor(getResources().getColor(android.R.color.holo_blue_dark));
```

Fragment Specifications
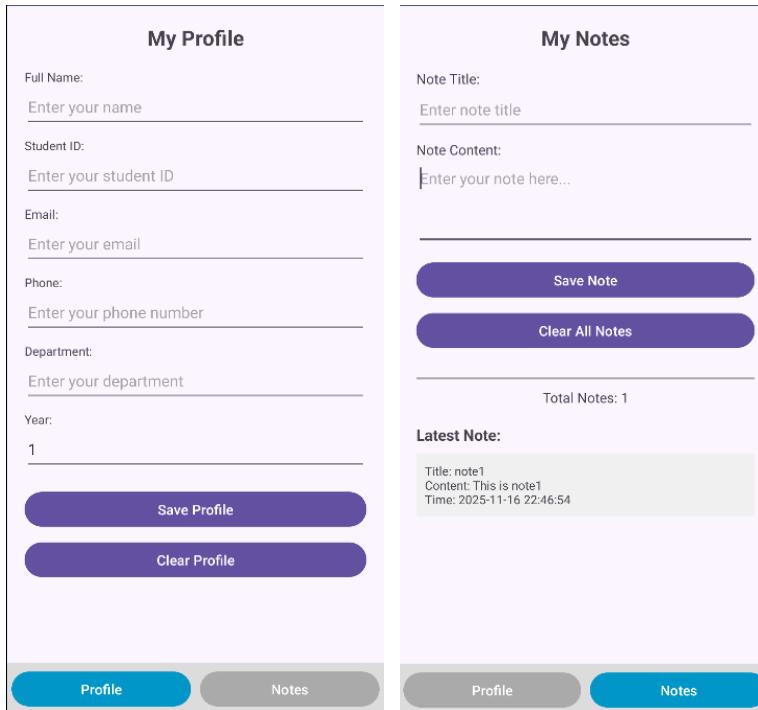
Profile Fragment Requirements

Functionality:

● Load existing profile data when the fragment opens
● Validate that Name and Student ID are not empty before saving
● Save all data using SharedPreferences singleton
● Show success message (Toast) when saved
● Apply animation to Save button when clicked
● Clear all fields and SharedPreferences when Clear is pressed

Notes Fragment Requirements

Functionality:

● Validate both title and content are not empty
● Save notes to SQLite database
● Update note count after each save
● Display the most recent note automatically
● Clear input fields after successful save
● Apply animation when note is saved

Fragments Screenshots

Navigation Requirements (Main Activity)

Bottom Navigation Bar

- Active button should have a different color (`holo_blue_dark`)
- Inactive button should be gray

Navigation Behavior

- Default fragment on app launch: Profile Fragment
- Clicking navigation buttons should:
    - Replace current fragment with selected one
    - Change button colors to indicate active state
    - Don't add to back stack (direct replacement)

Animations Required

- Fade-in animation for the "My notes" and "My Profile" Texts.
- Scale animation when "Save Notes" button is clicked (scale-in and scale-out together)

What to Hand in:

1. Project.zip file (Size in KB)
From Android Studio: File → Export to zip file

Good Luck!