

Code

Sunday, January 12, 2025 9:33 PM

Pseudo Code: Python/MongoDb App

Initialize the App

1. Connect to the database (student_database).
2. Define three collections:
 - students: Stores student details.
 - lessons: Stores lesson details.
 - subscriptions: Stores the relationship between students and lessons.
3. Define a predefined list of lessons:
 - Example: [(1, "Math"), (2, "English"), (3, "IT"), (4, "Arabic"), (5, "Physics")].
4. Insert predefined lessons into the lessons collection if they don't already exist.

Main Menu

1. Display menu options:
 - A - Add Student
 - D - Delete Student
 - U - Update Student Info
 - S - Show Student Info
 - E - Exit
2. Prompt user for input.
3. Call the corresponding function based on the user's choice:
 - A: Add a student.
 - D: Delete a student.
 - U: Update student info.
 - S: Show student info.
 - E: Exit the program.

Functions

Add Student

1. **Prompt User Input:**
 - Enter student number (validate as numeric).
 - Enter name, nickname, age (validate as numeric), grade, and registration date.
2. **Save Student Data:**
 - Insert student details into the students collection.
3. **Display Predefined Lessons:**
 - List all lessons with their IDs.
4. **Select Lessons for the Student:**
 - User enters lesson IDs (comma-separated).
 - For each lesson ID:
 - Validate if the ID exists in the lessons collection.
 - Insert a subscription linking the student number and lesson ID into the subscriptions collection.
5. **Confirm Success:**
 - Print "Student and lessons added successfully."

Delete Student

1. Prompt for student number.
2. Check if the student exists in the students collection.
 - If not found, print "Student not found."
3. If found:
 - Delete the student from the students collection.
 - Delete all their subscriptions from the subscriptions collection.

4. Print "Student deleted successfully."

Update Student Info

1. Prompt for student number.
2. Check if the student exists in the students collection.
 - If not found, print "Student not found."
3. If found:
 - Display current details.
 - Prompt for updated values (leave blank to keep current values).
 - Validate and update the student's data in the students collection.
4. Print "Student information updated successfully."

Show Student Info

1. Prompt for student number.
2. Check if the student exists in the students collection.
 - If not found, print "Student not found."
3. If found:
 - Display student details.
 - Query the subscriptions collection for their lesson IDs.
 - For each lesson ID, fetch the lesson name from the lessons collection.
 - Display the list of lessons.
4. Print "Student information displayed."

Initialize Lessons

1. Loop through the predefined list of lessons.
2. For each lesson:
 - Check if it exists in the lessons collection.
 - If not, insert it.

Utility Functions

1. **List Predefined Lessons:**
 - Print all lessons with their IDs.
2. **Validate Numeric Input:**
 - Check if input is numeric. If not, prompt the user again.

Exit

1. When the user selects E, print "Goodbye!" and terminate the program.