Computer Science Course

"Final Project Submission"

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GitHub Link:

https://github.com/M-Itair/ShareWithHsoub-FinalProject.git

School Database - Project Description:

What is required is to create a system for a school and link it to a database. The database must contain mainly two tables, students and lessons.

When you run the program, a menu should appear as follows:

Please choose the operation you want to perform:

- To add a student, click on the letter **a**
- To delete a student, press the letter **d**
- To modify student information, press the letter **m**
- To view student information, press the letter **v**

- If the user chooses the letter **a** to add a student, we must take the student's information from the user (student ID, first name, last name, age, grade, date of enrollment) and add it to the students' table in the database. We must also take the lessons in which the student is enrolled and add them to the lessons table, then we display a message to the user that the operation was successful.

- If the user chooses the letter **d** to delete a student, we must take the information of the student we want to delete from the database, take (student ID) and check if it exists in the database, delete it, and show a message to the user that the operation was successful.

- If the user chooses the letter **m** to modify the information of a student, we must take the information of the student whose information we want to modify in the database from the user, take (the student ID), and check if it exists in the database, modify his information and show a message to the user that the operation was successful.

- If the user chooses the letter **v** to display the student's information, we must take the student's information whose information we want to display from the user. We take (the student ID) and check if it exists in the database. We fetch his information (student ID, first name, last name, age, grade, registration date, and the lessons enrolled in) and display them to the user.

❖ Note: A student can register in more than one lesson, not in one lesson - Likewise, more than one student can register in one lesson (many-to-many relationship)

❖ Before implementing the project, you must develop the plan that you will follow to create the project, such as creating the algorithm, flow charts, and pseudo code.

❖ The diagram you followed to create the project must be sent in a separate PDF file.

The Pseudocode

START

CREATE function to setup database tables:

  - Connect to database

  - Create 'students', 'lessons', and 'student_lessons' tables if they don't exist

CREATE function to add a student:

  - Get student details from user (ID, first name, last name, age, grade, date of enrollment)

  - Insert student details into 'students' table

  - Ask for number of lessons to enroll in

  - For each lesson, check if it exists in 'lessons' table, if not, add it

  - Link student with lessons in 'student_lessons' table

  - Confirm addition of student

CREATE function to delete a student:

  - Get student ID from user

  - Delete student from 'students' table

  - Delete student's lessons from 'student_lessons' table

  - Confirm deletion

CREATE function to modify a student:

  - Get student ID from user

  - If student exists, allow user to update first name, last name, and grade

  - Update student details in 'students' table

  - Confirm modification

CREATE function to display a student:

- Get student ID from user

- Retrieve and display student details from 'students' table

- Retrieve and display student's lessons from 'student_lessons' table

- If student not found, show error message

CREATE user interface:

- Present user with options (add, delete, modify, view, exit)

- Perform action based on user's choice until 'exit' is chosen

END

The Flowchart