CAT Reloaded

Embedded Circle

Beginner Level: First Project

Deadline : 14/5/2022 at 12:00 AM

Topics covered:

1. Arrays
2. Pointers
3. Unions and Structures
4. Strings
5. Dynamic memory allocation
6. Source and Header files
7. The preprocessor

First, you should watch this video to be able to work with your group:

Link: [How work with group with git & GITHUB](#)

Student Record System

- This is a mini-project "Student Record System Project using C"
- Student record contains his name, total grade, unique id, age, gender, and password.
- The system has two modes:
    1. Admin mode
    2. User mode

    and the user has to choose the mode at the beginning.
- If the user chooses admin mode, ask him for the password and he has these privileges:
    1. Add student record
    2. Remove student record
    3. View student record
    4. View all records
    5. Edit admin password
    6. Edit student grade

- When the user chooses "student mode", ask him for the id and the password, and he has these privileges:
    1. View your record.
    2. Edit your password.
    3. Edit your name

1

Admin mode

The system asks for the password, the default password is 1234. The user has 3 attempts to enter the password correctly.

1. Add student record:
- To add a new student, the admin shall enter this basic information: (student name, total grade, unique id, age, gender, and password).
- The ID shall be unique for the user, if the entered ID already exists, the system shall reject the entry.

2. Remove student record:
- The admin can remove a student record by entering the student ID. if the entered ID doesn't exist, the system shall reject the transaction.

3. View student records:
- By entering the student ID, the system shall show the basic information for the student.

4. View all records:
- This function displays all entered student records.

5. Edit admin password

6. Edit student grade
- It will take a student Id, if the ID exists, it will edit the total grade

NOTE: The student grade should be between 0 to 100.

User mode

1. View your record
- By entering your ID, the system shall show the basic information for your record.

2. Edit your password
- By entering your ID, you can edit your password.

3. Edit your name
- By entering your ID, you can edit your name.

Hints

- The name and password have to be of type char*.
- Use dynamic memory allocation to store student names and passwords.
- Take care of hidden memory leaks when removing or editing student records.
- After using the free function, take care of assigning NULL to the pointer to avoid dangling the pointer.
  Ex :

        free(ptr);
        ptr = NULL;
- Use this approach when storing either the name or the password of the student:

        char *name = (char*) malloc(strlen(newName)+1);
        strcpy(name,newName);