Student Grading programme

Short description of the programme: This programme is made for calculating the final grade for the student in this course. This programme has different options from which the users can decide what they want to do with the programme. For example, the option one allows the user to insert the student information, similarly option 2 allows the user to display the student data, option 3 allows the user to sort out the list by final grade in ascending order, option 4 allows the user to sort out the list by the name in ascending order, and option 5 allows the user to exit the programme.

Major functions

Structure (struct): this is the main structure "Student" inside which there are five objects as string and float object which we can call later in the programme by .objectname.

Boolean Data: bool is used here in this programme to compare the student grade and name with student a and b, by checking if the student a grade is < student b. similar function for the student's name.

Main function: after this we came to the main function where we make an array "stu[20]" and also declare the variables count, user_input as integers and bool variable check_out as false.

Switch: we use switch function to check the user input by using "case" which gives the option about the programme what to implement. For example, in this programme the case 1 is inserting the student information, case 2 is displaying the student information and so on.

Sorting: here system(cls) command code is used to clear the screen before sorting of the list by grade or name sort command is used to sort the list.

Programme code:

```
#include<iostream>
#include<string>
#include<algorithm>
#include<Windows.h>
using namespace std;


struct Student { // for structure Student
	string name = "";
	int weekly_ex = 0;
	float weekly_grade = 0;
	float final_exam = 0;
	float final_grade = 0;
};
/*
When user insert number 1: the programme will allow to
insert student's information

When user insert number 2: the programme will print out
the student's information

When user insert number 3: the programme will sort the students by grade

When user insert number 4: the programme will sort the students by name

when user insert number 5: exit the programme
*/
bool compareGrade(Student& a, Student& b) {
	return (a.final_grade < b.final_grade);
}



bool compareName(Student& a, Student& b) {
	return (a.name < b.name);
}
int main() {
	Student stu[20]; // array for the student number max 20
	int count = 0; // to count the number of student inserted
	int user_input;
	bool check_out = false;



	cout << "-------Plaese enter one of the Number between 1/2/3/4/5 after the
text ->Your input: according to your wish------- ";
	do {



		cout << "\n1:Insert student's info\n2:Print out the student
info\n3:Sort by grade (ascending)\n4:Sort by name (ascending)\n5:Exit the
program";
		cout << "\n Your input: ";
		cin >> user_input;
		switch (user_input)
		{
		case 1: {
```

```
                        system("cls");
                        cout << "Insert student's name: "; //for student info
                        string a;
                        cin.ignore(); // to ignore the line and giving space
                        getline(cin, a);
                        stu[count].name = a;



                        cout << "Insert the number of weekly exercises: "; //for
weekly exercises
                        cin >> stu[count].weekly_ex;



                        if (stu[count].weekly_ex <= 19) {
                              stu[count].weekly_grade = 0, // for weekly grade
checking
                                    cout << " Weekly exercise grade: " <<
stu[count].weekly_grade << endl;
                        }
                        else if (stu[count].weekly_ex >= 20 && stu[count].weekly_ex
<= 23) {
                              stu[count].weekly_grade = 1,
                                    cout << " Weekly exercise grade: " <<
stu[count].weekly_grade << endl;
                        }
                        else if (stu[count].weekly_ex >= 24 && stu[count].weekly_ex
<= 27) {
                              stu[count].weekly_grade = 2,
                                    cout << " Weekly exercise grade: " <<
stu[count].weekly_grade << endl;
                        }
                        else if (stu[count].weekly_ex >= 28 && stu[count].weekly_ex
<= 32) {
                              stu[count].weekly_grade = 3,
                                    cout << " Weekly exercise grade: " <<
stu[count].weekly_grade << endl;
                        }
                        else if (stu[count].weekly_ex >= 33 && stu[count].weekly_ex
<= 36) {
                              stu[count].weekly_grade = 4,
                                    cout << " Weekly exercise grade: " <<
stu[count].weekly_grade << endl;
                        }
                        else if (stu[count].weekly_ex >= 37 && stu[count].weekly_ex
>= 40) {
                              stu[count].weekly_grade = 5,
                                    cout << " Weekly exercise grade: " <<
stu[count].weekly_grade << endl;
                        }
                        cout << "Insert the final assignment Grade: "; // for final
assignment grade input
                        cin >> stu[count].final_exam;
                        stu[count].final_grade = double(stu[count].weekly_grade * 0.4
+ stu[count].final_exam * 0.6); // for 40% + 60% calculation
                        count++;
                        break;
                  }
                  case 2: {
                        system("cls");
                        for (int i = 0; i < count; i++) { //for student info output
                              cout << "Student Number: " << i + 1 << endl;
```

```
                        cout << "Student Name : " << stu[i].name << endl;
                        cout << "Student Weekly Exercises : " <<
stu[i].weekly_ex << endl;
                        cout << "Student Weekly Exercise Grade : " <<
stu[i].weekly_grade << endl;
                        cout << "Student Final Assighnment Grade : " <<
stu[i].final_exam << endl;
                        cout << "Student Final Grade : " << stu[i].final_grade
<< endl;
                  }
                  break;
            }
            case 3: {  // to sort by grade
                  system("cls");
                  sort(stu, stu + count, compareGrade);
                  cout << "\n-----Sorted list by grade please press 2 to
display the sorted list---------" << endl;
                  break;
            }
            case 4: {  // to sort by name
                  system("cls");
                  sort(stu, stu + count, compareName);
                  cout << "\n-----Sorted list by name please press 2 to display
the sorted list ----------" << endl;
                  break;
            }
            case 5: { // to exit the programme
                  system("cls");
                  check_out = true;
                  cout << " Thank you for using this programme ! Bye bye !!!"
<< endl;
                  break;
            }
            default:
                  break;
            }
      } while (!check_out);
      return 0;
}
```