

Assignment 1

Using the single linked list implementation which is shown in the class, write an application for storing the grades of a class. Suppose you have a class of students. Your application will be used to view and analyze the grades of the students.

Visual Studio 2015 will be used for grading your work.

Q1) Implement the class "Grades" in files "grades.h" and "grades.cpp". Member variables and functions of this class are described below:

Member Variables

Name	Type	Access	Description
courseName	string	private	Name of the course.
gradeList	IntSLList	private	A linked list which stores grades.

Name	Return Type	Parameters	Access	Description
Grades	-	string	public	Initiates the member variable 'courseName'.
add_grade	void	int	public	Adds a new grade to the list of grades. Does not insert the grade if it is not in the range [0, 100].
get_min	int	void	public	Returns the lowest grade present in the list.
get_max	int	void	public	Returns the highest grade present in the list.
get_average	double	void	public	Returns the average grade of the list.
get_num_grades	int	void	public	Returns the number of grades present in the list.
remove_all_grades	void	void	public	Removes all grades from the list. Do not forget to avoid memory leaks.

Your implementation of the class Grades should be able to compile and work with the example main provided.

Q2) Implement a main method in a file named "main.cpp" that will provide a command line menu to do following operations:

- **Create a classroom:** During creation user should be able to name the classroom. This should be done only once.
- **Enter a grade:** This operation will allow the user to enter grades until user types -1. The new grades will be added to the Grades object. If user types -1, the insertion process ends and the main menu will be displayed again.
- **Show stats:** This operation will display some statistical information about the entered grades. The minimum, maximum, average of the grades; and total number of grades in the classroom should be listed.
- **Clear classroom:** This operation will remove all grades from the Grades object.