ITU Computer Engineering Department
BLG 223E Data Structures, Spring 2022
Recitation #1

Problem Definition

In this recitation, you add and list values of an array of object. This array will be created using the Student class. You can access the Student class from the main.cpp file. Student class is as in below:

Code Listing 1: Student Class

```
class Student{
    private:
        string name;
        int grade;
    public:
        Student();
        ~Student();
        void set_grade(int);
        int get_grade();
        string get_name();
        void set_name(string);
};
```

This array and its capacity has been already created. These are kept in the global variables astudents and capacity. Therefore, you can access these variables from all functions.

You should complete 'addStudent', 'listStudents' and 'maxGradeStudent' functions in the code file. You should do following transformation in these functions.

- void addStudent():
  - You are taken student's name and grade from the user. You should set the student's name and grade in astudents array
  - Increases astudents capacity(capacity variable) by 1
- void listStudent(string expr):
  - You should list the student's name and grade in astudents array.
- void maxGradeStudent(string expr):
  - Find the highest grade student and write his/her name and grade.

Note: More than 10 students will not be added to the array.

An example scenario is shown on the next page.

1 Example

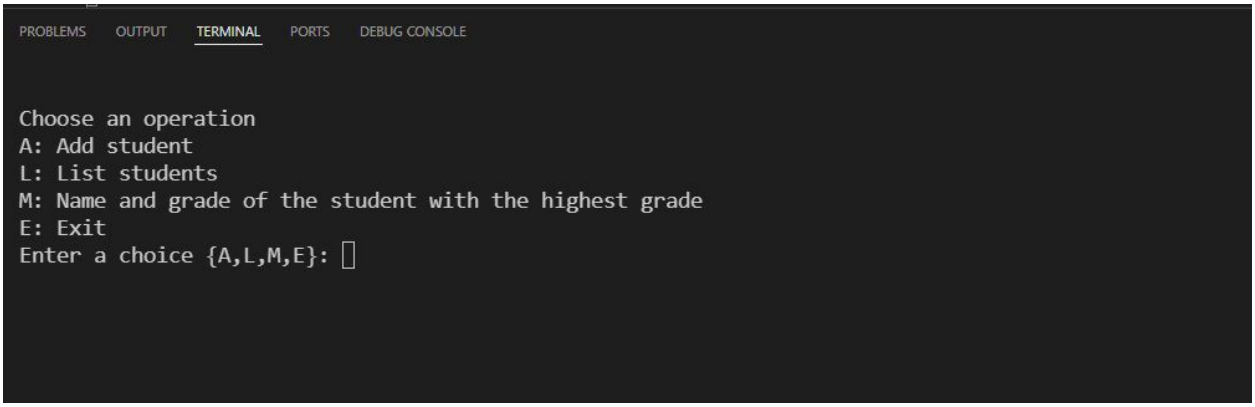

Figure 1: Terminal screen when the program is run.

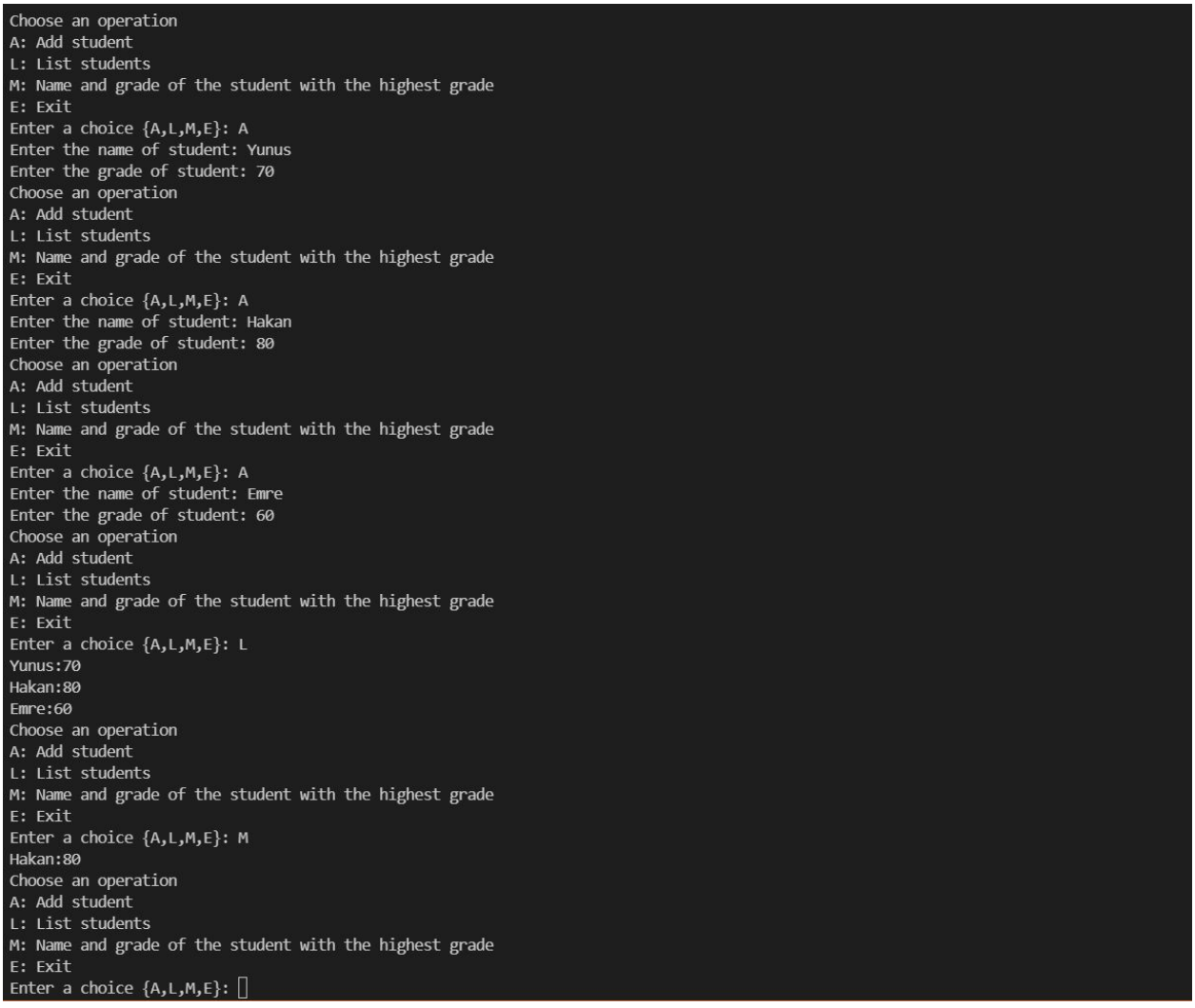

Figure 2: Terminal screen when the input is entered.

Submission Rules

- Make sure you write your name and number in all of the files of your project, in the following format:

  /* @Author

  Student Name: <student_name>

  Student ID : <student_id>

  Date: <date> */

- Use comments wherever necessary in your code to explain what you did.
- Your program will be checked by using **Calico(https://bitbucket.org/uyar/calico)** automatic checker.
- Do not share any code or text that can be submitted as a part of an assignment (discussing ideas is okay).
- Only electronic submissions through Ninova will be accepted no later than deadline.
- You may discuss the problems at an abstract level with your classmates, but you should not **share or copy code** from your classmates or from the Internet. You should submit your **own, individual** homework.
- Academic dishonesty, including cheating, plagiarism, and direct copying, is unacceptable.
- If you have any question about the recitation, you cand send e-mail to Yunus Emre Cebeci(cebeci16@itu.edu.tr).
- Note that **YOUR CODES WILL BE CHECKED WITH THE PLAGIARISM TOOLS!**