Problem Set 4 Exercise #17: Class Roster

Reference: Lecture 11 notes

Learning objectives: Array of structures; Sorting

Estimated completion time: 45 minutes

Problem statement:

CS1010X maintains a class roster for all students. Essential information of a student includes (this is a simplified version):

- Student number (a single word string, e.g. "A0083070W")

- Major of a student (a single word string, e.g. "CEG").

Your task is to write a program **roster.c** to read student information, sort roster in ascending order of student numbers and then print it out.

Your program should contain the following two functions:

- **`int read_roster(student_t roster[])`** that stores information of all students in an array of **student_t** variables. This function returns the number of student record read.

- **`void sort_roster(student_t students[], int size)`** that sorts **`students`** array in ascending order of student numbers.

You may assume that the maximum number of students is 1000.

Sample run #1:

```
Enter the number of students in class: 2
Enter student number and major of each student:
A0097754M CEG
A0097379H CEG
Sorted list:
A0097379H CEG
A0097754M CEG
```

Sample run #2:

```
Enter the number of students in class: 4
Enter student number and major of each student:
U096906Y Engineering
A0092061K Arts
A0093344J SoC
A0092515W Science
Sorted list:
A0092061K Arts
A0092515W Science
A0093344J SoC
U096906Y  Engineering
```