

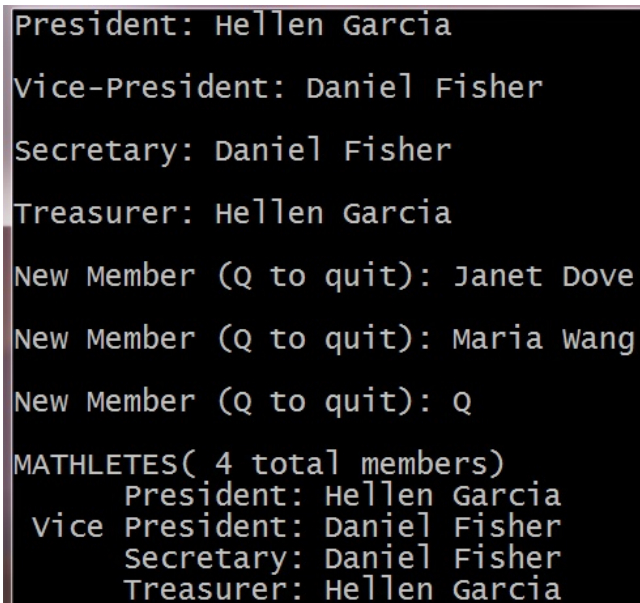
**Problem 1:**

Using good coding practices, create a class `Student` and another called `StudentClub`. `StudentClub` should have the fields `President`, `Vice-President`, `Secretary`, and `Treasurer`, all of which should be pointers to a `Student` object. In this way, the same student could hold different offices. In addition, `StudentClub` should have a `club_members` field, which should be a vector of pointers to `Student` objects.

Your class definition should include (but not limited to) the following constructor and member functions.

```
StudentClub(Student* p, Student* v, Student* s, Student* t,
            vector<Student*> m);
Student* get_president() const;
Student* get_vice_president() const;
Student* get_secretary() const;
Student* get_treasurer() const;
vector<Student*> get_members() const;
void add_member(Student* s);
size_t number_members() const;
```

Finally, create a main function to test your classes such that it prompts the user for the name of the club officers and its members. Then, it prints out the club officers and the number of members. Figure 1 shows a sample output.



```
President: Hellen Garcia
Vice-President: Daniel Fisher
Secretary: Daniel Fisher
Treasurer: Hellen Garcia
New Member (Q to quit): Janet Dove
New Member (Q to quit): Maria Wang
New Member (Q to quit): Q
MATHLETES( 4 total members)
    President: Hellen Garcia
    Vice President: Daniel Fisher
    Secretary: Daniel Fisher
    Treasurer: Hellen Garcia
```

Figure 1: sample output.

**Good Coding Practices:**

- think about cross-platform. Don't use Windows or Mac only commands. For example, `pause == cin.get()` twice, write many `\n` vs. `system("clear")` or `system('cls')`.
- passing objects by reference `&` or `const &` when possible
- using field initializer list when possible in all constructors

**Instructions for submission:**

- Name your files exactly `hw2.cpp`, `Student.h`, `Student.cpp`, `StudentClub.h`, and `StudentClub.cpp`.
- You may not use `#include "stdafx.h"`.
- Add code description in the comment at the beginning of the file.  
A sample description may look like:

```
/*  
    PIC 10B 2A, Homework 1  
    Purpose: Tic-tac-toe game  
    Author: Hanqin Cai  
    Date: 10/10/2019  
*/
```

- Submit your header files and source codes to BurinLearn in separate files. Only `.h` and `.cpp` files should be uploaded.