

Project 4 Report

The objective of this project was to yet again expand and modify our previous GPA calculation/Degree Requirement check program. The functionality of the finished program in project 4 is the exact same as project 3, however there are some key differences. The primary objective of project 4 is to make the program more modular by assigning each of the different menu options into actual functions and using function calls to organize the program in a easier to read format. This translated into creating a dedicated function for GPA computation, GPA Semester computation, course listing, total hours with grade D, read-in of a course, as well as make a dedicated function for the menu display. All of these functions were relatively straightforward to implement since we were given most of what we needed to design the functions. One hiccup I ran into was not being able to reference an array when adding a new course, however using a different logical approach I was able to solve the issue. For a while I was having an issue where if a new course was added, the name wouldn't be added properly (missing the first character). However, this was because of the use of the `c.ignore()` function, which I have since removed. There are no known problems as of now. Below I have included a list of tests.

Input 1

2
Programming Foundations I
Fall 2015
2004
4
A
Digital Design
Fall 2015
2014
4
B
a
b
e
Sociology
Spring 2016
2003
3
D
c
b
a
q

Output 2

Enter how many classes you're taking/have taken:
Class name:

Term of enrollment (e.g. "Fall 2015"):

Course number:

Hours (1-5):

Grade:

Class name:

Term of enrollment (e.g. "Fall 2015"):

Course number:

Hours (1-5):

Grade:

Welcome to the GPA and Course storage program menu.

Now that you've entered your class information, please enter the character next to the choice you wish to pick.

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Your GPA is: 3.5

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

You have taken 2 classes.

Classes: Programming Foundations I Digital Design

Terms: Fall 2015 Fall 2015

Course Numbers: 2004 2014

Grades: A B

Hours: 4 4

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Class name:

Term of enrollment:

Course number:

Hours (1-5):

Grade:

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Total hours (grade D): 3

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

You have taken 3 classes.

Classes: Programming Foundations I Digital Design Sociology

Terms: Fall 2015 Fall 2015 Spring 2016

Course Numbers: 2004 2014 2003

Grades: A B D

Hours: 4 4 3

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Your GPA is: 2.81818

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Input 2

4
Programming Foundations I
Fall 2015
2004
4
A
Anthropology
Fall 2015
2003
3
B
Psychology
Spring 2015
2003
3
A
Differential Equations
Spring 2015
2584
4
D
a
b
c
d
Spring 2015
Q

Output 2

Enter how many classes you're taking/have taken:

Class name:

Term of enrollment (e.g. "Fall 2015"):

Course number:

Hours (1-5):

Grade:

Class name:

Term of enrollment (e.g. "Fall 2015"):

Course number:

Hours (1-5):

Grade:

Class name:

Term of enrollment (e.g. "Fall 2015"):

Course number:

Hours (1-5):

Grade:

Class name:

Term of enrollment (e.g. "Fall 2015"):

Course number:

Hours (1-5):

Grade:

Welcome to the GPA and Course storage program menu.
Now that you've entered your class information, please enter the character next to the choice you wish to pick.

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Your GPA is: 2.92857

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

You have taken 4 classes.

Classes: Programming Foundations I Anthropology Psychology

Differential Equations

Terms: Fall 2015 Fall 2015 Spring 2015 Spring 2015

Course Numbers: 2004 2003 2003 2584

Grades: A B A D

Hours: 4 3 3 4

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

Total hours (grade D): 4

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program

What term would you like your GPA calculated from?

Your GPA for Spring 2015 is: 2.28571

- A. Compute the GPA for all courses
- B. List all courses
- C. Compute the total credit hours of courses with grade D
- D. Compute the GPA for a particular semester
- E. Add another course to the course list
- Q. Quit the program