Program 3

Programming in C
CSCI 112, Spring 2021

Objectives

- Create an object oriented program with multiple classes and inheritance

Description:

Create a program that reads in a list of CSCI, EGEN and Biob classes from a file. Store the list in a vector of classes. Allow the user (a student) to have the following options:

1) Print a class given a <type> number
2) Print all classes for a given type.
3) Quit

All output will be written to the screen.

Requirements:

You must create a class for one university class. This university class has the type/number (ex: CSCI 112), title, and professor's name. This information for a set of classes is stored in /public/pgm3/classes.csv. You will pass this filename in via the command line. You will have 3 child classes that inherit from this university class class. You must have a vector for each type of class that stores all the data for each type of class.

You must provide the options to the user on the screen as shown in the screen shot below.

You will ask for additional information (class type/number or type) once the user selects a choice. You will then print the information to the user. Depending on which type of class the user chooses, you will print the university class information in a different order:

For EGEN classes:
Type, professor, title, number

For CSCI classes:
Type, title, number, professor

For BIOB classes:
Type, number, title, professor
`

NO GLOBALS.

You must have each class in a separate file (at least a header file, you will more than likely need a .cpp for each class also). You must make 1 run using the selections/info that I show below in my solution.

My Output:

```
[k57h721@csci112 pgm3]$ ./classpgm /public/pgm3/classes.csv
Choices:
n - print class given number
t - print all classes for a given type
q - quit
n
Enter class type and class number (ex: CSCI 112): BIOB 160
BIOB-160-Principles of Living Systems-Yan Qing
Choices:
n - print class given number
t - print all classes for a given type
q - quit
n
Enter class type and class number (ex: CSCI 112): EGEN 310
EGEN-White Timothy R-Multipdisc Engineering Design-310
Choices:
n - print class given number
t - print all classes for a given type
q - quit
n
Enter class type and class number (ex: CSCI 112): CSCI 127
CSCI-Joy and Beauty of Data-127-DeFrance Daniel Louis
Choices:
n - print class given number
t - print all classes for a given type
q - quit
t
Enter type (CSCI, EGEN, or BIOB: BIOB
BIOB-100-Organism Function-Willey David W
BIOB-105-Introduction to Biotechnology-Sands David C
BIOB-160-Principles of Living Systems-Yan Qing
Choices:
n - print class given number
t - print all classes for a given type
q - quit
q
```

Submission

Due Date: 4/21 at 11:00pm

Each student will complete and submit this assignment individually. I will check for plagerism. Labs submitted after the due date/time will not be accepted.

Grading

Points (100 pts) – you will get a zero if you don't submit the source files

- 5 points – comments explaining what your program does

- 5 points – indent your code so it is readable
- 5 points – submitted screenshot as required above
- 5 points – compiles successfully
- 10 points - create a class to store a university class in
- 10 points - read your data from the file /public/pgm3/classes.csv
- 10 points – create 3 classes (for egen, csci and biob classes) that inherit from your university class.
- 10 points – create a semester class that has the vectors for all 3 university class types.
- 10 points - have a method in your semester class to read a line from the input file and put the data into the right university class child.
- 10 points – have a method in each of your child class types that will print the information required above
- 10 points - have all your data as private in your class.
- 10 points – use getline with a delimiter to pull each input line apart to place each piece of class data in the right data attribute for the class.