

Program 2a  
COP-3804 - Java Intermediate Programming  
Professor : Michael Robinson  
e-mail : michael.robinson@cs.fiu.edu  
Web Page : www.cs.fiu.edu/~mrobi002/teaching

- Turn in the signed source code on paper, and email me the source code.
- Make sure the programs are properly documented and aligned uniformly, looking professionally, I will take points off if it is not.
- Include the following header in every program:

```
/******  
Author      : Your Name  
Course      : COP 3804 Days and Time  
Professor   : Michael Robinson  
Program #   : Program Purpose/Description  
             {A brief description of the program }
```

Due Date : MM/DD/YYYY

Certification:

I hereby certify that this work is my own and none of it is the work of any other person.

.....{ your signature }.....

\*\*\*\*\*/

Purpose of this program:

To implent classes using Inheritance

- 1 - Worth 3 points ( Implement super-class - no main method )
  - Create a super class called University
  - In this class create the following global PRIVATE variables which represent the type of classes and credids that all students must take:
    - humanitiesCredits = 6
    - socialScienceCredits = 6
    - englishCredits = 6
    - mathCredits = 3
    - totalCreditsRequired = 128;
  - In this class create the following methods:
    - humanities
    - socialScience
    - english
    - math
    - getHumanitiesCredits()
    - getSocialScienceCredits()
    - getEnglishCredits()
    - getMathCredits()
    - getTotalCreditsRequired()

The first four above methods should print the amount of credits required from its department i.e:

"The English Department requires 6 credits"

the amount of credits should be obtained from the private variables.

The next previous five methods (gets) must return the amount of credits required based on their name.

- 2 - Worth 3 points (Implement sub-classes - no main method)
  - Create the following sub-classes extending University :
    - ComputerScience
    - InformationTechnology
    - NetworkingAndTeleCommunications

In each of the above sub-classes override the following variable:

mathCredits

create the public variable

```
coreCredits = 77;
```

and override the following methods:

```
math()
    making it print
    System.out.printf("sb The Math Department requires %d credits\n", mathCredits);

getMathCredits()
    making it print
    using the sub-classes mathCredits private variable
```

3 - Worth 3 points ( Implement a calling program )

- Create a main program called yourLastNameFirstInitialpgm2.

- Create the following global variables:

```
total = 0;
core = 0;
base = 0;
```

- In the main() call the methods:

```
cs();
it();
tn();
```

each of these methods should print results similar to these:

Computer Science:

```
sp The Humanities Department requires 6 credits
sp The Social Science Department requires 6 credits
sp The English Department requires 6 credits
sb The Math Department requires 12 credits
```

```
Total base Credits 30
Total core Credits 78
Total electives    20
=====
Total to graduate 128
```

Information Technology:

```
sp The Humanities Department requires 6 credits
sp The Social Science Department requires 6 credits
sp The English Department requires 6 credits
sb The Math Department requires 6 credits
```

```
Total base Credits 24
Total core Credits 80
Total electives    24
=====
Total to graduate 128
```

Telecommunications and Networking:

```
sp The Humanities Department requires 6 credits
sp The Social Science Department requires 6 credits
sp The English Department requires 6 credits
sb The Math Department requires 9 credits
```

```
Total base Credits 27
Total core Credits 77
```

Total electives 24  
=====  
Total to graduate 128

Note: The sp at the beginning of the output means this comes from the Super-Class  
The sb at the beginning of the output means this comes from the Sub-Class

The base, core, and Total to graduate values come from the sub-classes.

Since the sub-classes inherit from the super-class you are also using the  
super-class and its variables

4 - GUI Worth 1 points ( Implement GUI messages in addition to printing them in text )

Note: you need to turn in 1 Super-Class, 3 Sub-Classes, and 1 Main program.