

Program 1a
COP-3804 - Java Intermediate Programming
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- Turn in the signed source code on paper, and email me the source code.
- Make sure the program is 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 }.....

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Purpose of this program:

- Implement a main program that will use external classes and constructors using
 - Enhanced for loops
 - Final Variables
 - Variable-Length Argument List in Methods
 - ternary "if"
 - Use GUI messageDialog Boxes and inputDialogBoxes for all communications with the user.
- Each task must be done inside its own method.
- Use the main method to create variables and call the methods ONLY.
- Make the FINAL variables global.
- External class and Constructors DO NOT contain data, they PROCESS data send by the user (main program)

1 - Worth 3 points (Implement Constructor - no main method)

- Create a class with constructors and name it :
lastName + first letter of your last name + the word Const
ex: perezMConst

This class must have:

- Private variables
- Three constructors that will accept:
 - constructor one = nothing
 - constructor two = an array of the grades you would like in this class
 - constructor three = the following three integers 66 40 2
- EACH constructor MUST have its mutator/setter method that will be used to receive other variables from the calling program and set your private variables.
- EACH constructor MUST have its accessor/gettter method that will be used to return values requested by the calling program.

2 - Worth 2 points (Implement external classes - no main method)

- Create a class and name it:
lastName + first letter of your last name + the word Class
ex: perezMClass
- Create a method that will accept an array of doubles containing the values of your grades in the constructor, and calculate an average grade, returning the average to the main program for printing using the printf command.
- Create a method that will accept the three values (66 44 2) in the constructor, being passed as an array of Objects.
Using the SWAP method or the Bubble Sort, place these numbers in ascending order,

return these values in an array to the main program for printing using the printf command.

3 - Worth 2 points

In the same previous external class:

- Create a method that will receive and print a String containing your major
- Create a method that will receive and print a String containing your credits taken
- Create a method that will receive and print a String containing your credits needed
- Create a method that will receive and print a String containing current GPA

4 - Worth 3 points (Implement calling program with main method in it)

- Create a main program called : your last name + First name initial + pgm1.

- At the main(String arg[]) method in main program:

- Call a method that will:

- Create an object/instance of a class for a constructor that will accept nothing
- Using this constructor's "set" method PASS your first name and last name in two different Strings
- Using this constructor's "get" method obtain and print your name.

- Call a method that will:

- Create an object/instance of a class for a constructor that will accept the numbers 66 40 2 as three separate ints
- Using this constructor's "get" method obtain these three number sorted in ascending order and print them.
Use a SWAP or the Bubble Sort method from your external class to do the sorting.

- Call a method that will:

- Create an object/instance of a class for a constructor that will accept your goal grades for this class as an array of Objects.
- Using this constructor's "get" method obtain your grade average.
Use an AVERAGE method from your external class to do this operation.

- Call the following methods in the external class PASSING the data:

- method that will receive and print a String containing your major
- method that will receive and print a String containing your credits taken
- method that will receive and print a String containing your credits needed
- method that will receive and print a String containing current GPA

Note: you need to turn in three programs, your Constructor program, the External Class program and the main program that uses the Constructor and the External Class.