

CSCI221 Fall 2016

Programming Assignment 2, Due Wednesday, October 5, 10pm.

Instructor: McCauley

**Collaboration Policy:** individual Assignment

50-Points

**Program Requirements** Make the following updates to the **Company** class. A sample solution is provided, or you may work from your own solution. And add a new class **CompanyRoster** described below.

**Company class:**

Do not remove any of the existing methods, but note that some methods/constructors may need to be modified to satisfy the new requirements.

Upgrade the Company class to

- Keep counts of each existing type (I, O, D) of company. These are class, rather than instance variables. (Hint, static variables.) All constructors will update (one of) these counts.
- Include methods to return the class counts mentioned immediately above (one method for each company type).
- Include a method to return the total number of companies that exist.

Class method	Description and Preconditions (if any)
numberOfInternationalCompanies( )	Number of international companies that exist. Precondition: None.
numberOfOverseasCompanies( )	Number of overseas companies that exist. Precondition: None.
numberOfDomesticCompanies( )	Number of domestic companies that exist. Precondition: None.
numberOfCompanies( )	Number of companies that exist. Precondition: None.

- Include what is sometime called a copy constructor

Constructor	Description and Preconditions (if any)
Company( Company c )	Constructor: a new company that is a <b>copy</b> of company c. Precondition: c is an existing company.

- Include the following instance methods

Instance methods	Description and Preconditions (if any)
equals( Company c )	Returns true if this company stores same data as company c, returns false otherwise. Precondition: c is an existing company.
equalsID( Company c )	Returns true if this company has same ID as company c, returns false otherwise.

	Precondition: c is an existing company.
<code>equalsName( Company c )</code>	Returns true if this company has same name as company c, returns false otherwise. Precondition: c is an existing company.
<code>copy( )</code>	Returns a new object that is a copy of this company. Precondition: none.

Develop a **main** method in the Company class that demonstrates that all methods and constructors work properly.

The documentation requirements, grading rubric, and file naming and submission procedures are the same as with Programming assignment 1.

Use package name: **prog2.csci221** for this project.

### Grading Rubric

10 Points	Style: Comments and Indentation
40 Points	Functionality: <ul style="list-style-type: none"> <li>• Program compiles (5)</li> <li>• Program runs (5)</li> <li>• For given inputs, program produces correct output (30)</li> </ul>

If the submitted program does not compile: 0 of 40 points

If the submitted program compiles but does not run: 5 of 40 points

If the submitted program compiles and runs: 10 of 40 points

If the submitted program compiles, runs, and produces correct output: 40 of 40 points

The correctness of your program will be evaluated using test cases developed by the instructor. Late assignments will not be accepted – no exceptions (please do not email me your assignment after the due date, I will not accept it).

Please feel free to setup an appointment to discuss the assigned problem.