

LAB 1 (part C)

Use the project named **lab1** that you created in part B for your work in this part. (Copy your files from part A into this project so that you have one thing to submit for lab 1 work). Make a package to contain your Java files.

This is the final part of Lab 1! It will be due on the week of Feb 23rd, before Wednesday's lecture (on the 25th). As such, you'll have the lab session on Feb 23rd to work on it.

1. A person

Write a **Person** class with the following features:

- The **Person** class should contain a **Name** object (an instance of the **Name** class) that it will use to store the name of the person. This is the class that you wrote in Part B.5. The **Name** object shouldn't be accessible outside of the class.
- The **Person** class should store a hair color for each person as a **String**.
- The **Person** class should store a height for each person.
- A **Person** object should have an **int Id** field that is guaranteed to be unique for each object. The ID is assigned by the computer automatically (that is, not through an argument to a constructor). Use a class variable to keep track of what IDs you have already assigned.
- The class should have constructors that take various parameters to specify, in any combination (except as constrained below)
 - name (first and last names separately),
 - hair color, and
 - height.
 - All constructors must at least specify a name.
 - For constructors where hair color is not specified, set it to **null**.
 - For constructors where height is unspecified, set it to a random number of inches between 4'3" and 7'6".
- The **Person** class methods **name()** and **initials()** should return the same values that the **Name** class methods (of the same name) return. These should be **Person** class methods, however.
- There should be a getter for hair color that returns a **String**. If the hair color was unspecified, return "hair color is unspecified".
- There should be a getter for height that returns the height in as an **int** representing the number of inches tall the person is.
- There should be a getter method for a person's ID.

- The **Person** class should have a **copy()** method that returns another person with all the features *other than ID* copied. ID should be unique! Make sure to use a new **Name** object, rather than reusing the original one. You can add new methods to the **Name** class to make this easier if you wish.

Use the main method in your **Person** class to test all of the above features of a person. You might find it easiest to create several separate testing methods rather than put everything in the single main method.