

CS2230 – Assignment 2

Due: September 12, 2016 at 11:59pm

Objectives

This assignment will give you practice with the following:

- Class Inheritance practice
- Experience linked lists through Java's `ArrayList` class
- Understanding how to define methods from verbal descriptions

Part 0: Additional Details

You will be practicing both inheritance and simple list structure through the `ArrayList` class. We will discuss `ArrayList` in greater detail during class on Wednesday, September 7, 2016.

For this assignment you have been provided with two skeleton Netbeans projects. You will be expected to complete these projects following the specifications below which are described. Each method will include a short comment explaining the expected behavior of that method.

Part 1: Vehicle (15 pts)

You will be submitting the final `Vehicle`, `Truck` and `Person` classes with a test bed class.

Create a class called `Vehicle` that has the manufacturer's name (type `String`), number of cylinders in the engine (type `int`), and owner (type `Person`).

Then, create a class called `Truck` that is derived from `Vehicle` and has the following additional properties: the load capacity in tons (type `double` since it may contain a fractional part) and towing capacity in pounds (type `int`).

Be sure your class has a reasonable complement of constructors, accessor and mutator methods, and suitably defined `equals` and `toString` methods. (See `Person` for an example `equals` method). Write a program to test all your methods.

Part 2: Contacts (15 pts)

Write a program that uses an `ArrayList` of parameter type `Contact` to store a database of contacts. The `Contact` class should store the contact's first and last name, phone number, and email address. Add appropriate accessor and mutator methods. Your database program should present a menu that allows the user to add a contact, display all contacts, search for a specific contact and display it, or search for a specific contact and give the user the option to delete it. The searches should find any contact where any instance variable contains a target search string.

For example, if "elmore" is the search target, then any contact where the first name, last name, phone number, or email address contains "elmore" should be returned for display or deletion. Use the "for-each" loop to iterate through the `ArrayList`.

Submitting Your Assignment

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The following source files should be submitted to the ICON dropbox inside a zip file containing the package folders:

- package part1vehicle;
 - o Vehicle.java
 - o Truck.java
 - o Person.java
 - o TestBed.java
- package part2contact;
 - o Contact.java
 - o Part2Contact.java