CMSI 186-01, 186-04
PROGRAMMING LABORATORY
Spring 2015

Assignment 0205 Part 1: Money

Okay, here we go—full-blown Java programming commences with this assignment.

Outcomes

This assignment will affect your proficiency measures for outcomes *1a–1c*, *2a–2c*, and *3a–3f*.

Not for Submission

At this point you will probably transition from reading the Java Tutorials through to using them primarily for reference:

http://docs.oracle.com/javase/tutorial/

Definitely feel free to do so, and consider using other documentation on that site to help you do your work, particularly the API documentation.

For Submission

Define a class called `ChangeMaker` and give it the following methods:

- `public static int getQuarters(int cents)` returns the number of quarters needed if you were providing change for the given amount in cents.
- `public static int getDimes(int cents)` returns the number of dimes needed.
- `public static int getNickels(int cents)` returns the number of nickels needed.
- `public static int getPennies(int cents)` returns the number of pennies needed…you get the idea.
- `public static int[] getChange(int cents)` returns a 4-integer array indicating the number of coins needed to make change for the given amount in cents. The first element should hold the number of quarters, the second element should hold the number of dimes, the third element should hold the number of nickels, and finally the fourth element should hold the number of pennies.
- `public static void main(String[] args)` displays the change to be made for the given amount in cents (`args[0]`).

- If the user does not supply any arguments, display the message:

  ```
  Usage: java ChangeMaker <amount in
  cents>
  ```

- If the user enters a decimal number or any other non-integer, display the message:

  ```
  Supplied value is not an integer.
  ```

- If the user enters a negative integer, display the message:

  ```
  Cannot make change for negative
  cents.
  ```

- Ignore all other arguments, if any.
- If the entered amount is valid, display the change required, one line per denomination:

  ```
  Quarters: 5
  Dimes: 2
  Nickels: 0
  Pennies: 1
  ```

  …that would be the output for:

  ```
  java ChangeMaker 146
  ```

To assist you in development, a test program is available on the course website. The test program tests the supporting methods but not the full command line invocation.

How to Turn It In

Upload your code to your GitHub repository. Don't forget to commit as you go.