**COMP 1230 – Computer Programming II**

**Assignment #3: Abstract Class**



T00612390

Vu Nhat Nguyen

Due: October 1, 2019

**Problem**

Using the classes from Assignment #2, do the following:

1. Modify the parent class (Plant) by adding the following abstract methods:
   1. a method to return the (Latin) name of the plant
   2. a method that describes how the plant is used by humans (as food, to build houses, etc)
2. Add a Vegetable class with a flavor variable (sweet, salty, tart, etc) and 2 methods that return the following information:
   1. list 2 dishes (meals) that the vegetable can be used in
   2. where is this vegetable grown

The Vegetable class should have the usual constructors (default and parameterized), get (accessor) and set (mutator) methods for each attribute, and a toString method

Child classes should call parent methods whenever possible to minimize code duplication.

The driver program must **test all the methods in the Vegetable class, and show that the new methods added to the Plant class can be called by each of the child classes**. Include comments in your output to describe what you are testing, for example System.out.println(“testing Plant toString, accessor and mutator”);. Print out some blank lines in the output to make it easier to read and understand what is being output.

**Criteria**:

1. Does EACH class have all the usual methods?
2. Are **all** methods in EACH class tested, including child objects calling inherited parent methods?
3. Does the child class call the parent’s constructor?
4. Does the child class override the parent’s toString?
5. Does the output produced have lots of comments explaining what is being output?
6. Does each class, and the output, have blank lines and appropriate indenting to make them more readable?

**Test Cases:**

Test both parameterized and default constructor of Vegetable class.

(Since Plant is abstract it cannot be instantized )

Test all mutator and accessor methods as well as abstract methods for the corresponding attributes in Vegetable and parent class (Plant)

Test toString method in Vegetable class