CSCE 145: Algorithmic Design

Lab - 8

Task:

Write a program that creates 2 classes:

- Apple and
- AppleTester

Instructions:

First create a class called **Apple**

- The class **Apple** DOES NOT HAVE a main method
- Some of the attributes of Apple are
    - Type: A string that describes the apple. It may only be of the following types:
        - Red Delicious
        - Golden Delicious
        - Gala
        - Granny Smith
    - Weight: A decimal value representing the apple's weight in kilograms.
        - The weight must be between 0 kg and 2 kg
    - Price: The price per apple.
        - This must be a non-negative decimal value.
- Create the following constructors:
    - Default Constructor - has no parameters. It sets everything to default values.
        - Default value for type is Gala
        - Default value for weight is 0.5 kg

        - Default value for price is $0.88
    - Parameterized Constructor with 3 parameters - xType, xWeight and xPrice
- Create Accessors and Mutators for each instance variable
    - MAKE SURE THE MUTATORS CHECK FOR VALID VALUES!
- Create the following Methods
    - writeOutput() : displays the values of the instance variables

Finally, create a class called **AppleTester**

- This class DOES HAVE a main method
- Create at least 2 different types of apples

(a) create the 1st apple object using the default constructor

(b) create the 2nd apple object using the parameterized constructor

1. Accept values for apple type, weight and price from the user
2. Include the user provided values as arguments in the parameterized constructor call *[see sample output]*

- Display the values of the 2 apples you created on the console.

Sample Output-1:

Welcome to the Apple tester!!!

Creating the first apple!

Default values of the first apple object:

Type: Gala

Weight: 0.5 kg

Price: $0.88

Enter the type of the second apple object:

Granny Smith

Enter the weight of the second apple object:

0.7

Enter the price of the second apple object:

1.45

Creating the second apple object!

Values of the second apple object:

Type: Granny Smith

Weight: 0.7 kg

Price: $1.45

Sample Output-2:

Welcome to the apple tester!!!

Creating the first apple!

Default values of the first apple object:

Type: Gala

Weight: 0.5 kg

Price: $0.88

Enter the type of the second apple object:

Banana

Enter the weight of the second apple object:

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3.5

Enter the price of the second apple object:

-2.22

Creating the second apple object!

Invalid value for type!

Invalid value for weight!

Invalid value for price!

Values of the second apple object:

Type: null

Weight: 0.0 kg

Price: $0.0

Lab Submission:

- At the beginning of your program, insert your full name as a comment.
- Include comments in your program wherever necessary.
- Upload all .java files on Dropbox

Lab Report Submission:

- First, download the Lab report Template document on Dropbox.
- Use this template to complete your lab report.
- Additional Questions:

1. (5 points) Explain the meaning of the keyword *void* in a method definition.
2. (5 points) What is the purpose of an accessor?

3. (5 points) What is the purpose of a mutator?

- Upload your lab report as a PDF document on Dropbox.