

CS102B - Introduction to Computer Science
Fall 2019
11/21/19
Quiz #4

Name: _____

Score: ____/10

Fruit Stand (10 points)

Throughout NYC, there are many fruit stands and their business is all done with manual calculations. Being an entrepreneur with a strong engineering background, you decide to build a program to assist the fruit vendor's daily life.

This program is a simple cash register that can be used on any mobile device. The following are the requirements:

- (2) Create a Fruit structure that contains the following 3 members. Choose your own types appropriately.
 - fruit name
 - price
 - quantity purchased
- (2) Create a Basket structure that has the following 2 members. Again, choose your own types appropriately.
 - customer name
 - number of unique fruits
 - array of Fruits (max size is 10)
- (2) Write a function that puts a fruit to a customer's basket. Hint: Use the number of unique fruits member to index into the array of fruits.
- (2) Write a function that computes the total price for all the fruits in the basket. Be sure to account for the quantity of fruit in the basket.
- (2) Write a main function that does the following:
 - Create a Fruit with the following properties:
 - name: Apple
 - price: \$1.50
 - quantity: 2
 - Create a Fruit with the following properties:
 - name: Banana
 - price: \$0.50
 - quantity: 5
 - Create an instance of Basket with your name and add the apples and bananas into your basket.
 - Call the function that computes the total price for all of the fruits in your basket and print it out.

(Extra credit on the back)

- (+2 bonus) Extend this simple program to include a loyalty program.
 - Each fruit (quantity) that is purchased will result in 1 loyalty point.
 - The total loyalty points are stored in a member in the Basket structure.
 - Each time a fruit is added to the basket, recompute the total loyalty points in the basket.
 - If the basket has 5 loyalty points, automatically add 1 dragon fruit into the basket with a price of \$0.
 - In the above example, there is a quantity of 7 fruits purchased.
 - Note: you will have to modify your program and write additional functions as needed.