

Jefferson Community College

Watertown, NY 13601

Data Structures

CIS 250

Spring 2021, Section 1

Laboratory 01/Homework 01

You work in a "store" that sells customer-assembled ice-cream. Customers can fill cups, regular cones, or waffle cones with ice-cream and assorted toppings. The pricing depends upon how much of what item is added.

Write a Java program that keeps track of information for ice-cream sales. Use an object to implement a customer purchase. The object should keep track of which type of container is used as well as the volume of ice-cream, hot toppings, and candy toppings. Operations to be allowed upon the object should include selecting a container, adding ice-cream, adding hot-topping, adding candy toppings, and displaying a sales summary.

Assume that the user can change their choice of container prior to the addition of any other product. Also assume that cups are at no added charge, while traditional cones are \$0.50 added charge and waffle cones are \$1.50 added charge. Also assume that for every one second of dispensing time, ice-cream adds 80 grams, hot topping adds 65 grams, and candy toppings add 47 grams. At no point should the capacity of a cup exceed 1064 grams, a traditional cone 1211 grams, and a waffle cone 1789 grams. The company charges \$0.87 per 100 grams of mass (not counting the container). All of the pricing and weight-limit data should be initially loaded from a file via a constructor method.

The main program should be menu-driven and should allow the user to perform any and all of the tasks listed above. When selling ice-cream, a sales summary should be created showing all elements with their masses and costs as well as a subtotal, tax, and total.

Create and use appropriate methods to access the object.

Turn in Class and System Sequence diagrams (as homework) on Wednesday, February 3rd, 2021.

Turn in a copy of the data file, inputs, output, and source code. This assignment is due on Friday, February 5th, 2021.