

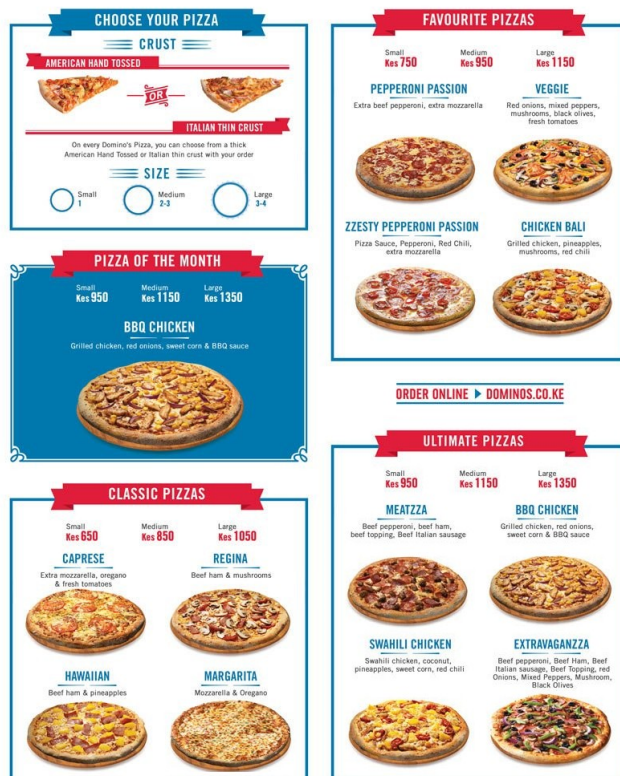
Homework #2

Due October 2nd, 2020

Objects and JavaScript

1. Introduction

This assignment helps you review the concepts of object orientated programming and also practice Javascript programming skills. You have been given this scenario: You are a programmer for Domino's Pizza and have been asked to use Javascript to develop a way for customers in Kenya to order from the local Domino's pizza stores. A sample menu is pictured below:



(This menu will be included as a separate file for closer examination)

2. Environment Setup

This assignment can be done in JSFiddle or your IDE. The submission will be three *.js files that should run on JSFiddle if copied over to it. Use that site to verify your code runs on a neutral platform.

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3. Design Phase 1: Menu

In this phase, you will design a class to represent menu items, create 6 instances off the chosen menu, and use them to define another class called Menu. Follow the instructions below:

1. Create a new Javascript file called "Phase 1.js".
2. Create a class "MenuItem", with a constructor. The items should have the properties of a pizza: name, ingredients, and prices.
3. Create instances of MenuItems for the following items on the menu: Regina, Hawaiian, Veggie, Zesty Pepperoni Passion, Chicken Bali, and BBQ Chicken (for some of the items ignore the "extra mozzarella" and unique sauces for this assignment).

Use the console to examine the instances, and make sure they represent their items correctly. This can be done by using the `console.log()` command with those instances being passed in the argument.

4. Create a class "Menu", which provides access to one or more MenuItem instances. It has: 1) an `addMenuItem()` method which can add a MenuItem to the menu; 2) a `findMenuItems(ingredient)` method which returns all the MenuItems that contain the ingredient.
5. Create an instance of the Menu class, add the 6 MenuItem instances to it, and use the `findMenuItems()` method to find the items which are made with pineapples.

6. Press the "Save" button (or "Update" button if you have pressed "Save" before) to create a URL to your code on JSFiddle.

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4. Design Phase 2: Order

In this phase, you will implement the code to support customer orders. Follow the instructions below:

1. Copy your "Phase1.js" *.js file and rename the copy as "Phase2.js" (or just copy the contents into a new Javascript file). If working on a JSFiddle account, you can fork your work to create a second instance of it that will be separate from that first phase. Make sure you either have an account or record the URL of that instance to keep track of it.
2. Create a class "Pizza" to represent actual pizzas that the customers want to order. (Hint: The constructor takes a MenuItem instance, and a string representing the desired size of "Small", "Medium", or "Large", as well as the crust "Hand Tossed" or "Thin").
3. Create a class "Order" to represent a customer order, which may contain one or more pizzas. The class has methods for adding a pizza and calculating total cost.
4. Exercise your Order class by creating an instance, adding at least two pizzas, and checking if the total cost is correct.
5. Press the "Update" button to create a URL to your code.

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5. Design Phase 3: Inventory

In this phase, you will implement the code to support store inventory for making pizzas. Follow the instructions below:

1. Repeat step 1 from part 4, but with "Phase2.js" and "Phase3.js" instead. Same with JSFiddle and the fork function if using that.
2. Create a class "Inventory" that holds the number of servings available for each ingredient. Such as, there are 20 servings of beef ham, 40 servings of pineapples, 12 servings of grilled chicken, etc.
3. Create an instance of the Inventory class, and set the inventory for the ingredients in our menu items: pinapples, beef ham, mushrooms, mixed peppers, black olives, fresh tomatoes, pepperoni, red chili, grilled chicken, and sweet corn.
4. Create a class "Store". A store is constructed with an inventory instance which determines whether or not it has sufficient ingredients to make a pizza. (NOTE: the servings of each item needed for a pizza by size is: 3 for Large, 2 for Medium, and 1 for Small)
5. Create a "placeOrder" method which accepts an Order instance and attempts to fulfill it. It will return an array of all the pizza instances it was able to make without running out of ingredients. So, if the stores inventory does not have enough of an ingredient, the pizza will not be made.
6. Call the placeOrder method with the instance of the order you did at the end of Phase 2. One of these pizzas should have enough ingredients to be made, and the other not. Have the result of the placeOrder call print to the console.
7. Press the "Update" button to create a URL to your code.

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6. Submission

This assignment is due at 11:59pm on 10/2/2020. Late submissions are subject to a 20% penalty. Late submissions will not be accepted after 3 days past the deadline (11:59pm on 10/5/2020).

For this Assignment, the README file should contain a header with your student information followed by a short summary detailing any part of the assignment that was left unfinished or what errors you found that were not fixed. If this doesn't apply, then no summary is needed. This is your opportunity to highlight any issues for the graders use.

Each *.js file should have your name at the top as a comment.

Submit the following files as a package to Blackboard:

README.txt

Phase1.js

Phase2.js

Phase3.js

7. Grading

20pts Phase 1

20pts Phase 2

20pts Phase 3

10pts Code Readability

TOTAL: 70 pts