**CSCI 2010U - Data Structures - Fall 2025**

**Lab 1 - Java Objects and Advanced Programming**

**Learning Objectives:**

In this lab, students will:

* develop a complex Java program that demonstrates an understanding of Java Objects, their creation/use;
* demonstrate your understanding of how to effectively test various scenarios for Java programs for course submissions; and effectively document your Java program to meet documentation and style standards.

**Academic Integrity Reminders:**

* For this lab, you **must** work with a partner, however your group should not consult with other students or any other outside persons except for general guidance.
* The use of generative AI tools to produce any portion of your solution is not permitted.
* You may review tutorials and other sources online for ideas and syntax assistance, but you cannot copy any code from another source. As such, it is recommended that you avoid resources such as Stack Overflow and stick to tutorials and reference sites.
* All code must be written by you on your own computer.
* When in doubt, ask your lab instructor - it’s better to play it safe.

**Part 1 - Burrito Class**

1. Create a Burrito Class in a file named Burrito.java where you will populate your class with attributes and methods.
2. A burrito should have the following attributes, and the appropriate getter/setter methods:
3. size - a burrito can be small or large, stored as a String
4. protein - a burrito can have one of the following proteins, stored as a String: none, chicken, steak, carnitas, or sofritas.
5. rice - a String containing either no, white, or brown
6. beans - a String containing either no, black, or brown
7. toppings - a String representing the toppings the customer wants on their burrito, represented as a comma separated list from among the following options: lettuce, salsa, corn salsa, sour cream, cheese. For example, “salsa, sour cream, cheese”.
8. guac - a boolean value indicating whether they have added guacamole to their burrito.
9. Create the following 3 constructors for your Burrito Class:
10. Burrito() - a default constructor that creates a small Burrito with no protein, no rice, no beans, no toppings, and no guacamole.
11. Burrito(String size, String protein) - a constructor that creates a Burrito of the given size and protein, then the rest of the attributes are the default values from above - no error checking is required at this time.
12. Burrito(String size, String protein, String rice, String beans, String toppings, boolean guac) - a full constructor that sets all elements based on the provided parameters - no error checking is required at this time.
13. Create a simple toString() method for your Burrito class that prints out the Burrito in an easy to understand manner, for example:
14. small chicken Burrito with white rice, no beans, lettuce, salsa, cheese, and no guacamole.
15. large sofritas Burrito with brown rice, black beans, corn salsa, sour cream, cheese, and guacamole.
16. Etc.
17. Create a second Class BurritoOrder in BurritoOrder.java to demonstrate the usage of your Burrito Class. It should have a main method that does the following:
18. Create a Burrito object using the default constructor, then use the set methods to customize the Burrito.
19. Create a Burrito object using the size and protein constructor, then use the remaining set methods to customize the Burrito.
20. Create a Burrito using the complete constructor to provide all details.
21. Print out the complete order of the 3 Burritos, e.g.:
22. Burrito 1: small chicken…
23. Burrito 2: large sofritas…
24. Burrito 3: large steak…

**STOP:** Show the output from your console to the TA to receive your grade for this portion of the lab. They will need to see your code (properly commented) and then the output on the console. **This part of the lab is worth 2 points.**

**Part 2 - Sell Your Burritos**

1. Add a getCost() method to your Burrito Class. It should take no parameters, and return the cost of the current burrito as a double using the following rules:
2. a small Burrito starts at $5.00 and a large Burrito starts at $7.50
3. chicken and steak add $2.00 to the cost, carnitas and sofritas add $3.00
4. adding rice and beans cost $1.00 each regardless of of type
5. all regular toppings are free
6. guacamole is $2.00 extra
7. Update your toString() method to include the price of the Burrito in its string output.
8. Return to your main method, add 3 more burritos to your order (a total of 6 Burritos) and print out the order as above, but it should now include the correct cost of each item.

**STOP:** Show the output from your console to the TA to receive your grade for this portion of the lab. They will need to see your code (properly commented) and then the output on the console. **This part of the lab is worth 1 point.**