**DASC 1204 – Introduction to OOP for Data Science**

**Programming Project Report**

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**Academic Integrity Statement:** I pledge that this programming project is my work and that I have neither given nor received unauthorized help on this assignment.

**Problem Statement:**

* This section should describe the goals of the assignment.
* What are the program inputs?
* What are the program outputs?
* What error handling was required?

The goal of the assignment was to create a menu for a taco restaurant, but I decided to do a hotdog restaurant. The customers are supposed to order meals, and the bill will be printed.

Program inputs: The customer chooses between 9 different choices, 1 through 9 in the command line. If the customer selects –1, the program will print the bill.

Outputs: The menu is printed with all the choices of hotdogs, and the bill is printed after the choices are made.

Error Handling: if a customer selects a choice not on the list, nothing will be added to the bill.

**Design:**

* This section should describe the design decisions you made.
* What data structures did you use?
* What algorithms did you use?
* What were pros/cons of the choices above?

Data structures: I used an array to store the hotdog choices

Algorithms: there were many functions, but they all centered around adding food to the menu, setters and getters, and calculating the bill. I also used a while(true) loop for printing the bill once the customer inputs –1.

Pros/Cons: The array was nice because it was easy to add new food items or takeaway if I wanted to. The while(true) loop I’ve never used before, so I don’t think it’s the most efficient way to do things, but it got the job done.

**Implementation:**

* This section should describe your implementation process.
* What sample code did you start with?
* How did you extend or adapt this code?
* What was your development timeline?
* If you used concepts outside of the scope current topics in this class, where did you gain this knowledge?

I started with the Food class and Menu class and the main method.

Extension: I added sub classes to the Food class: Appetizer, Dessert, MainCourse.

Timeline: This took me about 3 days to finish. The first day was a lot of planning and trying to understand the steps and what had to get done. The second day was jumping into it and getting majority of the coding done. The third day was lots of error handling because I had almost 20 errors. I also am writing this report on the same day.

I went to w3school for the while(true) loop. I know it was shown in class, but I totally forgot that a while loop could just take the parameter true. I also forgot how you could use break; in there.

**Testing:**

* This section should describe your testing process.
* Show your program output with simple test cases
* Show your program output with special test cases
* Did everything work as expected?

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| Hotdog Restaurant Menu |

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Item: 1) Main Course

Name: Veggie Dog Delight

Description: A plant-based hotdog topped with avocado slices and a splash of vegan mayo

Price: $8.50

Vegetarian: true

Gluten Free: false

Item: 2) Main Course

Name: Frankfurter Fiesta

Description: A classic beef frank served in a gluten-free bun with jalapeño cheese sauce and crispy onions

Price: $7.25

Vegetarian: false

Gluten Free: true

Item: 3) Main Course

Name: Monster Dog

Description: Triple meat hotdog with layers of bacon, beef, and pepperoni, smothered in BBQ sauce

Price: $9.75

Vegetarian: false

Gluten Free: false

Item: 4) Appetizer

Name: Mini Dog Bites

Description: Bite-sized hotdog rounds, deep-fried and served with a honey mustard dip

Price: $5.99

Number of Portions: 4

Temperature: hot

Item: 5) Appetizer

Name: Chili Dog Nachos

Description: Crispy tortilla chips topped with hotdog slices, warm chili, melted cheese, and a dollop of sour cream

Price: $6.75

Number of Portions: 3

Temperature: hot

Item: 6) Appetizer

Name: Cold Dog Salad

Description: Chopped cold hotdogs mixed with diced cucumbers, tomatoes, red onions, and a light vinaigrette dressing

Price: $4.99

Number of Portions: 2

Temperature: cold

Item: 7) Dessert

Name: Hotdog Bun Bread Pudding

Description: Sweet bread pudding made from leftover hotdog buns, soaked in vanilla custard and sprinkled with cinnamon

Price: $3.99

Calories: 350

Contains Nuts: false

Item: 8) Dessert

Name: Caramel Dog Delight

Description: Hotdog slices dipped in caramel and rolled in crushed peanuts, served chilled

Price: $5.50

Calories: 450

Contains Nuts: true

Item: 9) Dessert

Name: Banana Dog Split

Description: A playful twist on the classic banana split where a banana is served in a hotdog bun, topped with ice cream, chocolate syrup, and cherries

Price: $6.25

Calories: 520

Contains Nuts: false

What would you like to order? (Enter -1 to exit)

4

Ordering: Mini Dog Bites for $5.99

2

Ordering: Frankfurter Fiesta for $7.25

0

-2

9

Ordering: Banana Dog Split for $6.25

10

11

3.4

Exception in thread "main" java.util.InputMismatchException

at java.base/java.util.Scanner.throwFor(Scanner.java:939)

at java.base/java.util.Scanner.next(Scanner.java:1594)

at java.base/java.util.Scanner.nextInt(Scanner.java:2258)

at java.base/java.util.Scanner.nextInt(Scanner.java:2212)

at Menu.main(Menu.java:84)

Decimals throw an exception. Values not on the menu do not add anything to the bill.

-1 exits the while(true) loop.

All tests performed as expected.

**Conclusions:**

* This section should describe the overall result of the assignment.
* Was the programming project a success?
* What would you do same or differently next time?
* How long did the project take to complete?
* Choose the most challenging section of code, and explain what is happening and how it works. (this will likely be 2-10 lines of code total)

The project was a success. I feel like I could have made the user input more efficient. Using in inheritance felt easier with this project; probably because I spent more time with this one. Took me about 12 hours over the three days for everything. The hardest part was the while(true) loop.

while (true){

input = menu.scanner.nextInt();

if (input == -1){

break;

}

double price = menu.orderFood(input);

totalFoodPrice += price;

}