CSCI S-38 Summer 2018
Problem Set 2

I Operator and If Practice

- Create three variables: x, y, z, all integers and a double called d.
- Set x and y to 10
- Add one to x using the = and + operators. Display
- Add one to x using the ++ operator. Display
- Add one to x using the += operator. Display
- Set y to 4 and z to 8. Divide z by y and store the result in x. Display
- Divide y by z and store the result in d. Display (The result should be .5)
- If x is greater than 0, add 10 to x. Display x.
- If x is greater than 0 and y is less than 10, add 1 to d. Display x, y, d
- If x is greater than 0 or y is less than 10, add 1 to d. Display x, y, d

II Joe's Hotdogs- version 2

Update your Joe's hotdogs program as follows:

1. If there are no items in the order, let the user know and end the program.
2. Apply a 10% discount if the order is at least $20 (before sales tax is added)
3. Display the result to exactly 2 decimal places
4. ***Extra credit (required for grad students)***
   Implement a "buy 3 get 1 free" day on Mondays. Use the time/date functions to determine the day of the week (you will need to figure this out- we are not covering it in class). If it is a Monday, give a 4^{th} item free if they purchase 3. For example, if they order 4 orders of fries, they will only pay for 3. If they request 10 orders of fries, charge for 8 of them.
   Testing becomes critical for this problem. We will be looking for how and how thoroughly you checked that this worked

III Fibonacci Sequence

A Fibonacci Sequence follow the pattern: 0 1 1 2 3 5 8 13 21 …

where the next element is always the sum of the last two elements.

The series is always seeded with 0, 1 to start.

This sequence carries great significance in mathematics and proportions in nature – I suggest reading up on it for fun. https://www.livescience.com/37470-fibonacci-sequence.html

Your assignment is to create/store a Fibonacci sequence and then display it.

Create an array of up to 30 numbers. Ask the user how many numbers they want displayed in the sequence. The number they enter must be between 1 and 30. If it is not, continue to ask for the size until they enter a valid number.

You may assume the user is entering integers only. You only need to validate for the size of the number.

Note: you must create and store the sequence first, and then display it.