## **Purpose**

The purpose of this assignment is to utilize basic JavaScript, as learned in this class, to show knowledge on objects functions, variables, and more.

## **Tasks**

### Credit Card Validation

You're starting your own credit card business. You've come up with a new way to validate credit cards with a simple function called validateCreditCard that returns true or false.

Here are the rules for a valid number:

* Number must be 16 digits, all of them must be numbers
* You must have at least two different digits represented (all of the digits cannot be the same)
* The final digit must be even
* The sum of all the digits must be greater than 16

 The following credit card numbers are valid:

* 9999-9999-8888-0000
* 6666-6666-6666-1666

The following credit card numbers are invalid:

* a923-3211-9c01-1112 invalid characters
* 4444-4444-4444-4444 only one type of number
* 1111-1111-1111-1110 sum less than 16
* 6666-6666-6666-6661 odd final number

 You will need to the realine approach that is introduced in the discussion to allow your users to enter credit card numbers and on change, validate if the credit card is valid and display a message to the user accordingly.

Hint: Remove the dashes from the input string before checking if the input credit card number is valid. (check out split() and join() methods.

**3 points extra:** Make your credit card scheme even more advanced! What are the rules, and what are some numbers that pass or fail? Ideas: check expiration date! Check out the [Luhn Algorithm (Links to an external site.)](https://en.wikipedia.org/wiki/Luhn_algorithm" \t "_blank) for inspiration.

### The Cash Register

* Write a shopping cart constructor that allows you to create a shopping cart to include item names and their prices.
* A shopping car class should have a list of items
* It should have a function called addItem(item), which adds a new item to the shopping cart
* Write a function called cashRegister that takes a shopping cart object. The function should return the total price of the shopping cart.

Create multiple instances of the shopping cart object and show the results for each instance in your choice of display.

**Bonus (Extra 3 points):**Update your Shopping Cart Object to add a taxable field to each item in the cart. Update your cashRegister function to apply 10% tax to the taxable items only, and outputs the correct total. Create multiple instances of the shopping cart object and show the results for each instance in your choice of display.

## **Acceptance Criteria**

1. Your code must be appropriately commented.  Any variables, functions, objects, or algorithms that are not obvious, must be commented. You will receive an automatic 5 point deduction for each function not commented.
2. Your code must output the required output.

## **Completion**

submit a SINGLE JavaScript file with the name lastname\_firstname\_assignment5.js or copy and paste your code into the Canvas so that your instructor can run them successfully in Visual Studio Code.  No HTML is needed for this assignment.  You can use the console.log to test your program.