# SOEN287 – Winter 2018
# Assignment #2

**Due Date:** By 11:59 PM **March 10th**, 2018

**Evaluation:** 11% of final mark (see marking rubric at the end of handout)

**Late Submission:** none accepted

**Purpose:** The purpose of this assignment is to help you learn the JavaScript and HTML documents, and dynamic documents with JavaScript.

**CEAB/CIPS Attributes:** This assignment primarily evaluates use of JavaScript and HTML, and dynamic documents with JavaScript. (Use of engineering tools).

## General Guidelines When Writing Programs:

- Include the following comments at the top of your source codes

```
// -----------------------------------------------------------------------------
// Assignment (include number)
// Written by: (include your name (s) and student id(s))
// For SOEN 287 Section (your section) – Winter 2018
// -----------------------------------------------------------------------------
```

- In a comment, give a general explanation of what your program does.
- Include comments in your program describing key steps in your program.
- Display clear prompts for users when you are expecting the user to enter data from the keyboard.
- All output should be displayed with clear messages and in an easy to read format.

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# Question #1

Write a javascript for an ATM withdrawal application. The ATM machine will only accept a transaction if the withdrawal amount X is a multiple of 20, and account has enough balance to perform withdrawal transaction (including bank charges). For each successful withdrawal the bank charges 0.50$. The account will have an initial balance of 500$.

A) You have to declare an input type and a button in your HTML form with input type having a placeholder

| Enter withdrwal amount | Submit |

B) Javascript has 2 functions validateAmount.js and withdrwawAmount.js

    a. validateAmount: Make sure the amount entered is numeric, alert a message "Please enter numeric value" otherwise.

    b. withdrawAmount: Process transaction and alert one of the following three messages depending on the withdrawal amount

        i. Not multiple of 20: "Incorrect withdrawal amount"

        ii. "Insufficient funds"

        iii. "Successful transaction! \n Current Balance is: " + balance

# Question #2

Write a script that should produce some statistical information on user entered input data. The javascript code should be in an external file called "statistics.js", an HTML file named "numStats.html" should be created which will contain only a **div** element with id "statsOut". Javascript should ask user to enter numerical data until he/she enters -1. You should check for non-numeric and empty values and should ignore that data. Final statistic should be displayed in the div tag of the HTML file.

A) You have to use the external CSS file called "*stats.CSS*" to set border, font, margin, etc. for the div tag. A sample of the style is depicted below.

you have entered below mentioned numbers
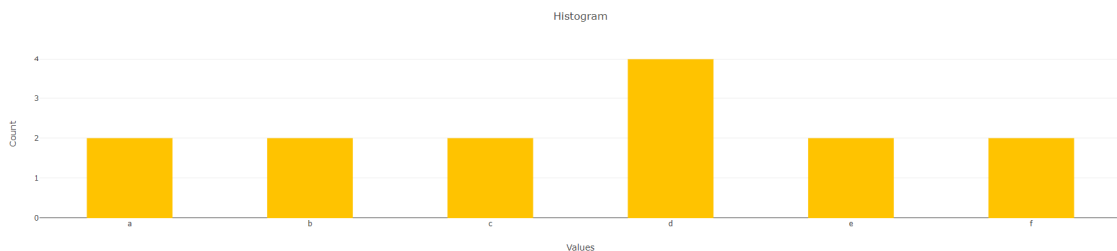5
5
5
You have entered 0 even numbers and 3 odd numbers

B) The JavaScript file (statistics.js) should keep prompting the user for input until he/she enters -1. Non-numerical values and empty input should be handled gracefully and should be ignored. The script should produce data as shown in sample output. It should print all the numbers entered as well as number of odd and even numbers entered by the user.

## Question #3

Write a JavaScript to plot histogram of user entered letters for a sentence entered by the user. Histogram is a graph that will depict frequency of occurrence of user specified letters in a user specified string. You have to make use of "plotly" library and a sample is provided to you.

A) Create an HTML form as depicted below with two labels, two input boxes, a button and a div element. User will enter a string and a word as inputs, and you should plot the histogram in the div element on button click.



B) Create a CSS file to put your favorite styles for all the elements in the form. It should have a minimum of style shown above. You can choose colors of your likings.

C) JavaScript could be within the same html file or as an external file. The choice is again up to you.

## Question #4

Write a Javascript function StringStats(sentence) in <head> that takes in a user specified sentence and prints the words along with number of vowels present in the word. For a word without a vowel you should print "contains 0 vowels". The sentence to be used is "The word rhythms doesn't contain any vowels".

Hint: Use the match method with /i for case insensitivity.

The page should display the following result

String Statistics:

The contains 1 vowel

word contains 1 vowel

rhythms contains 0 vowels

doesn't contains 2 vowels

contain contains 3 vowels

any contains 1 vowel

vowels contains 2 vowels

# Submitting Assignment#2

- Zip the source code (HTML and JavaScript files only please) of this assignment.

- Naming convention for zip file: Create one zip file, containing all source code files for your assignment using the following naming convention:

  ➢ The assignment is done individually:
    The zip file should be called *a#_studentID*, where # is the number of the assignment *studentID* is your student ID number. For example, for the first assignment, student 123456 would submit a zip file named *a3_123456.zip*

- For submission instructions please refer to the course web page.

- Assignments not submitted to the correct location or not in the requested format will not be graded.

- Submit only ONE version of an assignment. If more than one version is submitted the *last one will be graded* and all others will be disregarded.

# Evaluation Criteria of Assignment#2 (20 points)

| HTML Document with JavaScript source code | |
|---|---|
| **Question #1 (5 pts.)** | |
| HTML form | 1 pt. |
| Global variables | 0.5 pt. |
| Function validateAmount() | 1.5 pts. |
| Function withdrawAmount() | 2.0 pts. |
| **Question #2 (5 pts.)** | |
| stats.CSS | 1.0 pt. |
| Prompt boxes for us input | 1.0 pt. |
| Input validation | 0.5 pt. |
| JavaScript stats Function | 2.0 pts. |
| Display the result | 0.5 pt. |
| **Question #3 (5 pts.)** | |
| HTML form | 1.0 pt. |
| CSS for all the styling | 1.0 pt. |
| JavaScript Function to parse input data | 0.5 pts. |
| JavaScript Function to process data for plotly | 2.0 pts. |
| Display the result | 0.5 pt. |
| **Question #4 (5 pts.)** | 0.5 pt. |
| Function StringStats(sentence) described in head | 2.0 pt. |
| Using loop : for | 0.5 pts. |
| Using the If statement | 0.5 pts. |
| Tester described in body section | 1.0 pt. |
| Display the result | 1.0 pts. |