

## Lab 2\_1 [24 points] JavaScript Basics

### Objectives

- Understand how expressions are evaluated
- Create simple JavaScript code
- Use the browser development tool to run JavaScript code

### What to do

Please follow the steps and answer the questions in a text file

1. Download and extract the lab2\_1.html file
2. Open the file in Chrome, right click on the page and select **Inspect**
3. Select the **Console** tab.
4. Type the following JavaScript code line by line into the console. Click enter after each line the code.

```
let p1 = document.getElementById('p1');  
p1.innerHTML;  
p1.innerHTML = 'This is a modified paragraph';
```

Based on your observations of the output and research, answer the following questions

- a. [2 points] Explain what the first line of code does. Is the 'undefined' message referring to p1 as undefined or not?
- b. [2 points] What was returned to the console when you enter the second line of code? Why?
- c. [2 points] What was returned to the console when you enter the third line of code? What is modified in the webpage?

You can now refresh the webpage, observe the changes, and answer the following question

- d. [2 points] What has been changed after refreshing the page? Why?

5. Continue to use the lab2\_1 html web page. Type the following JavaScript code line by line into the console. Click enter after each line the code.

```
let footer = document.getElementById('homefooter');  
footer.innerText.substring(12,16);  
let str1 = footer.innerText.substring(12,16);  
typeof(str1);  
Number(str1);
```

Based on your observations of the output and research, answer the following questions

- a. [2 points] Why is the second line returning '2022' to the console? What is the result if we change the code to p1.innerHTML.substring(1,2); ?
- b. [1 point] What does the fourth line of code do?

- c. [1 point] What does the fifth line of code do?
- d. [2 points] What is result of `Number(str1)` if we change (12, 16) in lines 2 and 3 to (1, 2)? What is the meaning of the result?

Evaluate the value of the following expressions in 6-10 [10 points] at the end of each code block. Provide the steps of your evaluation. A grade zero will be given you have no middle steps. Hint: You can use the console to verify your result.

Example:

```
let a = 3;
```

```
a + 1 + 'a' + 1 + a == '4a4'
```

**Answer:** The expression can be evaluated as the following steps

Step 1: `4 + 'a' + 1 + 3 == '4a4'`

Step 2: `'4a' + 1 + 3 == '4a4'`

Step 3: `'4a1' + 3 == '4a4'`

Step 4: `'4a13' == '4a4'`

Step 5: false

6. `'cc' > 'cd' || 2 != '2'`

7. `false || true && !false`

8. `let a = 3;`

```
a += 3;
```

```
let b = 1;
```

```
b **= a;
```

```
((a >= 11) || (b <= 1)) && (a === b)
```

9. `let row = 3;`

```
let col = 4;
```

```
let reserved = 2;
```

```
let n;
```

```
'There are ' + row * col + reserved + ' cars in the parking lot' === 'There are 14 cars in the parking lot'
```

10. `let name1 = 'Alice';`

```
let name2 = 'Ava';
```

```
name1.length > name2.length && (name1.substring(0,1) === name2.substring(0,1))
```

## Submission:

Zip the text file and submit to Brightspace.