Day 9 : Morning

Functions Review

Given this array, write a function that returns all the numbers less then or equal to 15.

```
var numArr = [1,2,4,8,16,32,64];
```

Problem Solving Strategy

Problem Solving Strategy

1. Identify the end goal (output)
    - *What am I trying to do?*
2. Identify the information you have available (input)
    - *What are my options here?*
3. Identify the tools you have at your disposal
    - *What functions can I use?*

Problem Solving Strategy Continued...

1. Identify if your blocks
    - *Should I look to strengthen my knowledge of functions?*
    - *Am I missing some information?*
2. Formulate your strategy
    - *How am I going to approach this?*
    - *What variables or objects should I be creating?*
3. Execute your strategy
    - *Ok I know what I need to do, now all I need is to code the solution*

Functions Review

Built-in functions

Methods

MDN : Arrays Methods

MDN : String Methods

Swap function

Write a function that switches the location of items within the array.

```
var numArr = [1,2,4,8,16,32,64];
```

Popping an array.

Given an array, write a function that removes all the numbers greater then 15.

```
var numArr = [1,2,4,8,16,32,64];
```

Edge case

A special case or situation that may occur only at extreme parameters.

Factorial function

What is factorial?

Factorial is product of all integers that are below a specific integer

4! = 24, because 4 * 3 * 2 * 1 = 24

Factorial function in JS

Recursive functions

Recursive functions

There are two pieces to a successful recursive function:

1. Recursive step - the code that calls itself
2. Base case - the code that dictates when to stop recursing

Codeburst : Recursion in JavaScript

Recursive Factorial function

Data Structure

Abstract data type

- Abstract Stack
- Queue

Stack

Data model

First in last out

e.g. Mathmatical expressions, HTML Dom tree.

Queue

Data model

First In First Out

Last In Last Out

Complexity

Time Complexity

Space Complexity

Medium : Algorithm time complexity