Basic Algorithm Scripting Activities

These activities will help you practice some of the concepts we've been discussing in the lectures as well as your problem solving skills.

1. Element of Randomness

Write a function called `getRandomElement` that takes an array of strings as input and returns a random element from the array.

```
console.log(getRandomElement(["Bob", "Frank", "Stan"])); // Should return randomly selected name, either "Bob", "Frank" or "Stan". Should not return undefined
console.log(getRandomElement([])) // "Please provide elements in the array"
```

2. It's a Jungle Out There

Write a function called `getAnimalType` that takes a string representing an animal name and returns a category based on this logic:

Animal	Category
"dog", "cat"	"mammal"
"elephant", "giraffe"	"large mammal"
"zebra"	"striped mammal"
anything else	"unknown mammal"

```
console.log(getAnimalType("dog")); // "mammal"
console.log(getAnimalType("giraffe")); // "large mammal"
console.log(getAnimalType("zebra")); // "striped mammal"
console.log(getAnimalType("snake")); // "unknown animal"
console.log(getAnimalType("horse")); // "unknown animal"
console.log(getAnimalType("")); // "unknown mammal"
console.log(getAnimalType("7")); // "unknown mammal"
```

3. Reverse a String

Write a function called `reverseString` that takes a string and returns the reverse of the string. For example, "hello" should become "olleh".

```
console.log(reverseString("hello")); //olleh
console.log(reverseString("Stan")); //natS
console.log(reverseString("The quick brown fox jumped over the lazy red dog"));
```

```
//god der yzal eht revo depmuj xof nworb kciuq ehT
console.log(reverseString("")); // Please submit a string
console.log(reverseString(7)); // Please submit a string
console.log(reverseString("a")); // a
```

4. Find the Factorial

Write a function called `factorialize` that takes an integer and returns the factorial of that integer.

Hint: If the integer is represented with the letter n, a factorial is the product of all positive integers less than or equal to n.

Factorials are often represented in mathematics with the shorthand notation n!

For example: 5! = 1 * 2 * 3 * 4 * 5 = 120

```
console.log(factorialize(5)); // 120
console.log(factorialize(3)); //6
console.log(factorialize(5.5)); //120
console.log(factorialize(77)); //1.451830920282859e+113
console.log(factorialize(0.5)); // It is not possible to find the factorial of an
integer less than 0. Submit an integer greater than 0.
console.log(factorialize("")); //It is not possible to find the factorial of an
integer less than 0. Submit an integer greater than 0.
```

5. Largest Number of Array

Write a function called largestOfArr that takes an array of arrays and return an array consisting of the largest number from each provided sub-array.

```
console.log(
  largestOfArr([
    [13, 27, 18, 26],
    [4, 5, 1, 3],
    [32, 35, 37, 39],
    [1000, 1001, 857, 1],
  ])
); // [27, 5, 39, 1001]
console.log(largestOfArr([[1], [2], [3], [4]])); // [1, 2, 3, 4]
console.log(
  largestOfArr([
    [-17, -12, -19],
    [-2, -8, -11],
  ])
); // [-12, -2]
console.log(largestOfArr([])); // []
```

```
console.log(largestOfArr("James")); //Please submit an array
console.log(largestOfArr([[1, 2, 3], ["Carl"], [7, 8, 0]])); // All elements in
sub arrays must be numbers
console.log(largestOfArr([[22, 17, 9], "Mike", [1, 2, 3]])); // Please submit an
array of arrays
console.log(largestOfArr([[1, 2, 3], [], [4, 5]])); // [3, [], 5];
console.log(
  largestOfArr([
    [1, 2],
    [NaN, 4],
  ])
); // All elements in sub arrays must be numbers
console.log(largestOfArr([[1, 2], "", [3, 4]])); //Please submit an array of
arrays
```