Assignment1:

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**Questions**

1. Write a function that prints the numbers from 1 to 100. But for multiples of three, print "Fizz" instead of the number, and for the multiples of five, print "Buzz". For numbers that are multiples of both three and five, print "FizzBuzz".

Code:

function fizzBuzz(n) {

let result = [];

for (let i = 1; i <= n; ++i) {

if (i % 3 === 0 ) {

result.push("Fizz");

}

else if (i % 5 === 0) {

result.push("Buzz");

}

else if (i % 3 === 0 || i % 5 === 0) {

result.push("FizzBuzz");

}

else {

result.push(i.toString());

}

}

return result;

}

let n = 100;

let result = fizzBuzz(n);

console.log(result.join(' '));

1. Write a function that takes a string input representing a simple arithmetic expression (only addition and subtraction) and returns the result.

let expression = '15+12+16-3\*4';

let result = eval(expression);

console.log(result);

1. Write a function that takes a nested array and returns a flattened array.

var flatten = function(a, shallow, r) {

if (!r) {

r = [];

}

if (shallow) {

return r.concat.apply(r, a);

}

for (var i = 0; i < a.length; i++) {

if (a[i].constructor == Array) {

flatten(a[i], shallow, r);

} else {

r.push(a[i]);

}

}

return r;

}

console.log(flatten([11, [22], [43, [[48]]], [54, 65]]));

console.log(flatten([11, [22], [43, [[48]]], [54, 65]], true));

1. Write a function that checks if two given strings are anagrams of each other.

function isAnagram(str1, str2) {

str1 = str1.replace(/\s/g, '').toLowerCase()

str2 = str2.replace(/\s/g, '').toLowerCase()

if (str1.length !== str2.length) {

return false

}

str1 = str1.split('').sort().join('')

str2 = str2.split('').sort().join('')

return str1 === str2

}

const check = isAnagram('anurag', 'anurag')

console.log(check)

1. Write a function that takes an array and returns a new array with duplicates removed.

// program to remove duplicate value from an array

function getUnique(arr){

let uniqueArr = [];

// loop through array

for(let i of arr) {

if(uniqueArr.indexOf(i) === -1) {

uniqueArr.push(i);

}

}

console.log(uniqueArr);

}

const array = [4,5,6,4,5,8];

getUnique(array);

1. Write a function that takes a string and capitalizes the first letter of each word in the string.

function capital\_letter(str) {

str = str.split(" ");

for (var i = 0, x = str.length; i < x; i++) {

str[i] = str[i][0].toUpperCase() + str[i].substr(1);

}

return str.join(" ");

}

console.log(capital\_letter("Write a JavaScript program to capitalize the first letter of each word of a given string."));

1. Write a function that generates the first n numbers of the Fibonacci sequence.

nterms = int(input("How many terms? "))

n1, n2 = 0, 1

count = 0

if nterms <= 0:

print("Please enter a positive integer")

elif nterms == 1:

print("Fibonacci sequence upto",nterms,":")

print(n1)

else:

print("Fibonacci sequence:")

while count < nterms:

print(n1)

nth = n1 + n2

n1 = n2

n2 = nth

count += 1

1. Implement a simple HashMap class with put, get, and remove methods.

class HashMap {

constructor() {

this.\_buckets = [];

}

\_hash(key) {

let hash = 0;

for (let i = 0; i < key.length; i++) {

hash = (hash + key.charCodeAt(i)) % this.\_buckets.length;

}

return hash;

}

set(key, value) {

const index = this.\_hash(key);

if (!this.\_buckets[index]) {

this.\_buckets[index] = [];

}

const bucket = this.\_buckets[index];

for (let i = 0; i < bucket.length; i++) {

if (bucket[i][0] === key) {

bucket[i][1] = value;

return;

}

}

bucket.push([key, value]);

}

get(key) {

const index = this.\_hash(key);

const bucket = this.\_buckets[index];

if (!bucket) {

return undefined;

}

for (let i = 0; i < bucket.length; i++) {

if (bucket[i][0] === key) {

return bucket[i][1];

}

}

return undefined;

}

remove(key) {

const index = this.\_hash(key);

const bucket = this.\_buckets[index];

if (!bucket) {

return;

}

for (let i = 0; i < bucket.length; i++) {

if (bucket[i][0] === key) {

bucket.splice(i, 1);

return;

}

}

}

}

1. Write a function that filters out even numbers from an array.

let numbers = [8,15,21,20,14];

let even = [];

for(let i = 0; i < numbers.length; i++) {

if (numbers[i] % 2 == 0)

even.push(numbers[i]);

}

console.log(`Even numbers in an array are: ${even}`);

1. Write a function that converts a given string to title case (capitalizing the first letter of each word).

function sentenceCase(str) {

if ((str === null) || (str === ''))

return false;

else

str = str.toString();

return str.replace(/\w\S\*/g,

function (txt) {

return txt.charAt(0).toUpperCase() +

txt.substr(1).toLowerCase();

});

}

console.log(sentenceCase('Anurag Karmakar'));