// Identification: Joel Torney / 3/5/18 / CIS 270 FizzBizz

// Purpose: Use user input to create an array of Fibonacci numbers and display in a div.

//Also determine whether every number from 1 to the user's input is divisible by either 3 or 5 or both,...

//and writing the corresponding word for each (Fizz,Buzz,FizzBuzz).

// Algorithm / Overview:

// \* add event listeners to divs to respond on click

// \* then prompt user to ask and receive input.

//\* create function to call and reference other functions or methods.

//\* functions to loop the number of times as the user input and create an array incrementing correctly.

// \* Display arrays onto divs

window.onload = function () {

document.getElementById("Fibonacci").addEventListener("click", startProgram);

document.getElementById("FizzBuzz").addEventListener("click", fizzbuzz);

};

// global var for user input

var input;

//prompt user for input, parses it then call function fibb() and printArray() to print Fibonacci

// numbers onto the div

function startProgram() {

var string = prompt("Enter a number between 2 and 50");

var fibs = []; // empty array

var maxnum = 50;

var usernum = parseFloat(string);

input = usernum;

if (usernum !== -1) { // if user input is valid, proceed

fibb(usernum, fibs);

printArray(fibs);

}

//adds horizontal line break to the end of the sequence

if (usernum <= 50) {

document.getElementById("Fibonacci").innerHTML += ("<hr><hr>");

}

}

//Takes user input, starts at 1 and increments by 1 up to the users input

// determine whether the user's input and every number in between are divisible...

// by either 3 or 5 or both.

function fizzbuzz(n) {

//prompts user for input number

var string = prompt("Enter a number between 1 and 50");

//converts input to int

n = parseFloat(string);

var max = 50;

// if the user input is not a numerical value within the range (2-50) a input error message will display

if (isNaN(n) || n == null || n == undefined) {

input = 20;

} else if (n > max || n < 1) {

input = 20;

}

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

//outputs the word "Fizz" in place of #'s divisible by 3, "Buzz" for #'s divisible by 5

// And "Fizzbuzz" for #'s divisible by both

if (i % 5 == 0 && i % 3 == 0) {

document.getElementById("FizzBuzz").innerHTML += (i + ': <span style="background-color: #FF0000">FIZZBUZZ</span> <br>');

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

document.getElementById("FizzBuzz").innerHTML += (i + ':<span class="High" >BUZZ</span> <br>');

} else if (i % 3 == 0) {

document.getElementById("FizzBuzz").innerHTML += (i + ':<span style="background-color: #FFFF00">FIZZ</span> <br>');

} else {

document.getElementById("FizzBuzz").innerHTML += (i + ':<br>');

}

}

//puts horizontal line breaks after each successful sequence

if (n <= 50) {

document.getElementById("FizzBuzz").innerHTML += ("<hr><hr>");

}

}

// Creates the array for the basis of the Fibonacci functions

// Uses user input "n" to create array length

function fibb(n, arrayRef) {

var max = 50;

// if the user input is not a numerical value within the range (2-50) a input error message will display

if (isNaN(n) || n == null || n == undefined) {

input = 20;

} else if (n > max || n < 1) {

input = 20;

}

// use user input 'n' for loop max

n = input;

arrayRef[0] = 0;

arrayRef[1] = 1;

for (var i = 2; i <= n; i++) {

arrayRef[i] = arrayRef[i - 1] + arrayRef[i - 2];

}

}

//references the array from function fibb to display Fibonacci numbers

function printArray(arrayRef) {

for (i = 0; i < arrayRef.length - 1; i++) {

//styles even and odds with different highlight and text colors

if (arrayRef[i] % 2 == 0) {

document.getElementById("Fibonacci").innerHTML += ((i + 1) + ':<span style="background-color: #FFFF00" > ' + arrayRef[i].toLocaleString('en') + '</span><br>');

} else {

document.getElementById("Fibonacci").innerHTML += ((i + 1) + ':<span class="High" > ' + arrayRef[i].toFixed(2) + '</span><br>');

}

}

}