**Ch. 4 Written Assignment**

1. What is an array with undefined values called?
   1. **Sparse arrays** which occur when there are undefined items/ values in the middle of an array
2. Code a for loop that iterates and prints out the individual scores of this array: var scores = [4, 5, 6, 8, 2, 5, 9, 3]

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

**console.log(“Score #” + i + ”: ” + scores[i]);**

**document.write(“Score #” + i + ”: ” + scores[i]);**

**};**

1. Code a for loop that iterates and prints out the highest score of this array: var scores = [4, 5, 6, 8, 2, 5, 9, 3]

var highestScore = 0;

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

**if (scores[i] > highestScore) {**

**highestScore = scores[i];**

**};**

**};**

console.log(“Highest Score is “ + highestScore);

document.write(“Highest Score is “ + highestScore);

1. What is the index of the first item in an array?
   1. Index of 0.
   2. E.g. var myArray = [4,5,10,15], to get the first item which is 4, I should trigger it by simply calling myArray[0] 🡺 4.
2. What 2 main types of variables can be stored in an array?
   1. In the lecture at (3:10), it is mentioned that arrays can store strings, numbers, (true, false) Boolean, anything you like.
   2. **Since the question has specified 2 main types, I will go with the most used types of variables which are Strings & Numbers.**
3. What is the relationship between the length of the array and an index of the array.
   1. The index of the array: it is the address/ position of an item w/n the array.
      1. var myArray=[6,3,7,9,1]; myArray[4] 🡺 1
   2. The length of the array is the total count of items in the array
      1. Taking the same array myArray => myArray.length 🡺 5
   3. **Now to get the relationship, you will notice that the last element/ item in an array has an index of array.length – 1**
4. An array is a(n) \_\_\_\_\_\_\_\_\_ data structure.
   1. **Ordered** data structure.
   2. Arrays are a data structure for **ordered data.**
5. What is the value of an item in an array if you don’t specify one in the code?
   1. For this example var myArray = [1, , 9 , “”]

Graphical user interface

Description automatically generated

* 1. As demonstrated in the screenshot above, the value of an unspecified item in an array will be undefined.
  2. This array is called Sparse array.

1. When we use a loop to iterate over an array, what is the property (of the array) that we use to tell the for loop to stop?
   1. For loop: this part is called conditional test. Each time we loop, we perform this test, and if it is false, we stop.
   2. Reference, textbook page 140.
2. What is the name of the type of operator that is used to increment a loop variable? (Hint: the answer is a single word that starts with a “P”)
   1. **Plus**.
   2. **PlusPlus (if you consider it a single word)**