

Exam2

Due Dec 3 at 11:59pm**Points** 200**Questions** 15**Available** Dec 3 at 12am - Dec 3 at 11:59pm about 24 hours**Time Limit** 180 Minutes

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	92 minutes	80 out of 200 *

* Some questions not yet graded

⚠ Correct answers are hidden.

Score for this quiz: **80** out of 200 *

Submitted Dec 3 at 7:35pm

This attempt took 92 minutes.

Question 1

10 / 10 pts

Since computers cannot be programmed in natural human language, algorithms must be written in a(n)_____ language

Question 2

10 / 10 pts

Computers understand one and only one language, which is called

Question 3**Not yet graded / 10 pts**

List three types of programming errors

Your Answer:

syntax errors, runtime errors, logic errors

Question 4**10 / 10 pts**

What does the following statement print? _____

```
const x = 5;
```

```
x = 6;
```

```
console.log(x);
```

TypeError: Assignment to constant variable.

Question 5**10 / 10 pts**

Name the built-in function in JavaScript to display a data type of a value or a variable

typeof()

Question 6**10 / 10 pts**

Given the following JavaScript code fragment. What does the console.log print?

```
var test = 5;
modify(test);
console.log(test);

function modify(val) {
    val = 10;
}
```

Question 7**10 / 10 pts**

In JavaScript, when a variable is declared but is not assigned a value what would be the data type of the variable _____

Question 8**10 / 10 pts**

What is the runtime of the push method of an array? _____

☐ 2☐ linear

- ☐ log(n) where n is the size of the array
- ☐ quadratic
- ☒ constant

Incorrect**Question 9****0 / 10 pts**

What does the following function print? _____

```
function print() {  
  console.log(a);  
  let a = 7;  
}  
  
print();
```

ReferenceError

Question 10**10 / 10 pts**

Given the following code fragment. What method is used to remove the first element in the array_____

```
arr = [1,2,3,4];
```

//after the remove, the array should have 2,3,4

arr.shift()

Question 11**Not yet graded / 20 pts**

Given an array of integers arr = [1,2,3,4,5,6,7,8]

Implement a method called randomize, which accepts an array of integer and **return a new array of random numbers**. This function should not alter the original array

```
function randomize(arr) {  
    //return a new array  
}
```

Your Answer:

```
function randomize(arr) {  
    let max = arr.length - 1;  
    let newArr = [];  
    for(let i = 0; i < arr.length; i++){  
        newArr.push(arr[i]);  
    }  
  
    for(let i = 0; i < arr.length; i++){  
  
        let rand = Math.floor((max - 1)* Math.random() + 1);  
        [newArr[i], newArr[rand]] = [newArr[rand], newArr[i]];  
  
    }  
    return newArr;  
}
```

Question 12**Not yet graded / 20 pts**

Given an array of integers arr = [1,2,3,4,5,6,7,8]

Implement a method called sum, which accepts an array of integer and return **an average of all the numbers**.

Use the functional programming style will get 2 extra points

Your Answer:

```
function sum(arr){
  let total = 0;
  let avg = 0;

  for(let i = 0; i < arr.length; i++){
    total += arr[i];
  }
  avg = total/arr.length
  return avg;
}
```

Question 13

Not yet graded / 20 pts

Implement a program that performs the following task:

Given an array of words and a search word, return a set of words that **contains** the search key

Your program should satisfy the following requirements

- Should have a function named **containsKeywords**
- The function should accept two formal parameters, which is an array of string, and a search key word (string data type)
- The function should return an array of words such that each word should contain the search key word

Sample runs

```
String[] arr = {"test", "me", "hello", "wow"};
String test = "e";

console.log(containsKeywords(arr, test)); //should return 'test', 'me', hell
o'
```

Your Answer:

```
function containsKeyWords(arr, test){
    let testLen = test.length;
    let wordLen;
    let same = true;
    let answer = "";

    for(m = 0; m < arr.length; m++){
        wordLen = arr[m].length;
        for(let i = 0; i < wordLen - testLen + 1; i++){
            let k = 0;
            for(let j = i; j < i + testLen; j++){

                if(arr[m][j] != test[k]) same = false;
                k++;
            }

            if(same === true) answer += arr[m] + ', ';

            same = true;
        }
    }
    return answer;
}
```

Question 14

Not yet graded / 20 pts

Implement a program that performs the following task:

Given an array of words, return an array list of words that occur more than 2 times

Your program should satisfy the following requirements

- Should have a function named **findOccurences**
- The function should accept two formal parameters, which is an array of String data type and a word .

- The function should return an array list of words that occur **more than two** times

Sample run:

```
test= ["hello","test1","hahaha","hello","hello","test1"];  
keyword = 'hello';  
console.log(findOccurences(test, keyword));  
It should return "hello"
```

Hint: Use the dictionary object to store the count.

Your Answer:

```
function findOccurences(test, keyword){  
    let count = 0;  
    let newArr = [];  
  
    for(m = 0; m < test.length; m++){  
  
        if(test[m] === keyword){  
            count ++;  
            if (count > 2) newArr.push(test[m]);  
        }else{  
            continue;  
        }  
    }  
  
    return newArr;  
}
```

Question 15

Not yet graded / 20 pts

Implement a program to display each digit from the given an integer. Your program should satisfy the following requirements

- The program should have a function called **displayDigit**(number) {...} that print all digits from the given number

Sample runs:

If the end-user enter 1234, the program should return 1,2,3,4

If the end-user enter 45632, the program should return 4,5,6,3,2

Your Answer:

```
function displayDigit(number) {  
  let output = [];  
  while(number > 0 ){  
    output.unshift(number%10);  
    number = Math.floor(number/10);  
  }  
  return output;  
}
```

Quiz Score: **80** out of 200