

Javascript Scope Exercises

1. Determine what this Javascript code will print out (without running it):

```
x = 1;

var a = 5;

var b = 10;

var c = function(a, b, c) {

    var x = 10;

    document.write(x);

    document.write(a);

    var f = function(a, b, c) {

        b = a;

        document.write(b);

        b = c;

        var x = 5;

    }

    f(a,b,c);

    document.write(b);

}

c(8,9,10);

document.write(b);

document.write(x);

}
```

Answer : x=10 a=8 b=8 b=9 b=10 x=1

2.What is the difference between a method and function?

Answer: A **method**, like a **function**, is a set of instructions that perform a task. The **difference** is that a **method** is associated with an object, while a **function** is not.

3.What does 'this' refer to when used in a Java method?

Answer : The “**this**” keyword **refers** to the current object in a method or constructor.

4. What does 'this' refer to when used in a JavaScript method?

Answer : In a JavaScript method, **this** refers to the **owner object**.

5. What does 'this' refer to when used in a JavaScript constructor function?

Answer : In a **constructor function** this **does** not have a value. It **is** a substitute for the new object.

6. Assume object x is the prototype for object y in Javascript. Object x has a method f() containing keyword 'this'. When f is called by x.f(), what does 'this' refer to?

Answer : this refers to y

7. What is a free variable in JavaScript?

Answer :**Free variables** are simply the **variables** that are neither locally declared nor passed as parameter.

8. Create an object that has properties with name = "fred" and major="music" and a property that is a function that takes 2 numbers and returns the smallest of the two, or the square of the two if they are equal.

Answer :

```
var object {name: "Fred",  
            major:"music",  
            function(x,y) {  
                return findMin();  
            }  
}
```

9. Write Javascript code for creating three Employee objects using the "new" keyword and a constructor function. Employee objects have the following fields: name, salary, position.

Answer :

```
function Employee(name,salary,position) {  
    this.name;  
    this.salary;  
    this.position;  
}  
  
var Employee1 = new Employee("Smith",80000,"Manager");  
var Employee2 = new Employee("Smith",50000,"supervisor");  
var Employee3 = new Employee("Smith",40000,"Sales");
```

10. Write a Javascript function that takes any number of input arguments and returns the product of the arguments.

Answer:

```
def product(n1, n2):  
    return n1 * n2
```

11. Write an arrow function that returns the maximum of its three input arguments

Answer :

```
function findMax() {  
    var i;  
    var max = -Infinity;  
    for (i = 0; i < arguments.length; i++) {  
        if (arguments[i] > max) {  
            max = arguments[i]; } }  
    return max; }  
  
var x = findMax(100, 45, 55);
```