

Javascript Scope Exercises

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

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```
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);
```

Output : 10 8 8 9 10 1

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

Answer :

Function or method is a block of code which perform some task. But some difference between the function and methods are:

function is independent which can be invoked by it's name. but when a function is declared inside a class or is written as property of a object then it is called method, which is invoked by it's (objectname.functionName).

Function:

```
var x=10;
function xy(){
    var x=12;
    console.log(x)
}
xy()
```

Method :

```
class People{
    constructor(name,age){
        this.name=name;
        this.age=age;
    }
    information(){
        return "the name is "+this.name+" age is "+this.age
    }
}
var people=new People("Mazed",29);
document.write(people.information());
```

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

Answer : when “this” used in a Java method it refers to the it’s current object in a method or constructor.

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

Answer : As method is called the property of an object , then “this ” indicates the parents of the method, where the method is declared.

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

Answer : When an instance of a constructor function is created with the new keyword, then “this” defines to that newly created instance.

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 : here , “this” refers to the object x

7. What is a free variable in JavaScript?

Answer : A variable referred to by a function that is not one of its parameters or local variables.

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",
  objFunc:function(a,b){
    if(a==b) return Math.sqrt(a*b);
    else if(a>b) return b;
    else return a;
  }
}
```

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=name;
    this.salary=salary;
    this.position=position;
}

var employee1=new Employee("Dominda",200000,"Tester");
var employee2=new Employee("Mazed",400000,"HR");
var employee3=new Employee("Sazed",300000,"Developer");
```

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

Answer :

```
function product(...rest){
    let multiply=1;
    for(let i of rest){
        multiply=multiply*i;
    }
    return multiply;
}
```

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

Answer:

```
var maxFunc=(a,b,c)=>{

    let max = Math.max(a,b);
    return Math.max(c,max);
}
```