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 :
10 8 8 9 9 10 1

2. What is the difference between a method and a function?
Answer :
A function is a piece of code that is called by name. It can be passed data to operate on (i.e. the parameters) and can optionally return data (the return value). All data that is passed to a function is explicitly passed.

A method is a piece of code that is called by a name that is associated with an object. In most respects it is identical to a function except for two key differences:

1. A method is implicitly passed the object on which it was called.
2. A method is able to operate on data that is contained within the class

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

Answer

reference to the current object, whose method or constructor is being invoked

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

Answer

In an object method, this refers to the "owner" of the method.

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

Answer

In a function, this refers to the global object.

In a function, in strict mode, this is undefined.

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 the "owner" of the method, Object X

7. What is a free variable in JavaScript?

Answer :

free variable: 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 object1={
        'name':"fred",
        'major':"music",
        'mult':function(x,y){
                if(x==y)
                        return Math.sqrt(x*y) ;
                else
                        return x<y?x:y
        }
```

```
      };
```

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

```javascript
var object1= new Employee("Mahlet",20000,"Programmer");

var object2= new Employee("Lina",30000,"economist");

var object3= new Employee("Fast",40000,"hair stylist");
```

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

```javascript
function product(...args){
        var total = 1;
        if(args.length > 0){
                for (let i=0; i<args.length; i++) {
                        total *= args[i];
                }
        }
        console.log(total);
}
```

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

```javascript
function max(x,y,z){
        let temp = x>y ? x:y;
        return temp>z ? temp:z;
}
```