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);

// 10 – print local variable x

// 8 – print function variable a

// 8 – print local variable b = a

// 9 – print function variable b

document.write(b); // 10 – print global variable b

document.write(x); // 1 – print global variable x

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

A JavaScript function is a block of code designed to perform a particular task.

JavaScript methods are actions that can be performed on objects. A JavaScript **method** is a property containing a **function definition**. Methods are functions stored as object properties.

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

‘this’ refers to the current object – the object whose method is being called

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

‘this’ refers to the object that owns the method

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

In a constructor function this does not have a value. It is a substitute for the new object. The value of this will become the new object when a new object is created.

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?

‘this’ refers to x

7. What is a free variable in JavaScript?

A free variable is 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.

var ob = {

name: "fred",

major: "music",

m: function(a, b) {

if (a === b) {

return a \* a;

} else if (a < b) {

return a;

} else {

return b;

}

}

}

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.

function Employee(name, salary, position) {

this.name = name;

this.salary = salary;

this.position = position;

}

var employee1 = new Employee("George Smith", 70000, "Junior Software Enginneer");

var employee2 = new Employee("Ken Jones", 90000, "Software Enginneer");

var employee3 = new Employee("John Doe", 100000, "Senior Software Enginneer");

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

function product() {

var p = 1;

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

p \*= arguments[i];

}

return p;

}

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

const max = (x, y, z) => {

var m = x;

if (y > m) {

m = y;

} else if (z > m) {

m = z;

}

return m;

};