**Task – 2**

2. Write a write up on Difference between copy by value and copy by reference.

A: JavaScript has 5 data types that are passed by value: Boolean, null, undefined, String, and Number, these are primitive data types, whereas Array, Function, and Object are non – primitive data types and are passed as reference.

Copy by Value:

Let’s take an example for this:

Var x = 10;

Var y = 20;

Here, x is 10 and y is 20. Now,

A =x;

B =y;

Here A takes the value of x and B takes the value of y, i.e. A is 10 and B is 20. Changing the value of either x or y will not affect the values of A and B, they remain independent.

Copy by Reference: A variable assigned to an object stores not the object itself, but its “address in memory” – in other words “a reference” to it. When an object variable is copied, the reference is copied, but the object itself is not duplicated.

Let’s also take an example for this:

Let student = {name: ‘Khan’};

The object is stored in the memory and it only has the access (address) of the name key to it.

Now let’s copy it.

Let child = student;

Now we have two variables, each storing a reference to the same object (student). When we access the name key from child, this will affect the student variable as well. They are dependant.

Ex,

Child.name = ‘Jamie’;

Now both the student and the child have name = Jamie.

This is copy by reference.

3.How to copy by value a composite datatype (array+objects).

A: We can copy by value a composite datatype by the use of spread operator, it spreads the elements of that particular array or object and its values can be used to assign to some other variable.

For Ex.

Var n = [10,11,12,13,14];

Var m = [...n];