JavaScript Assignment – Lecture 1

Instructions: Answer all questions. Write code where required and explain your answers clearly.

Part 1: Variables and Scope

1. Explain how var works in JavaScript. What is variable hoisting? Give a code example.

var is function scope.

variable hoisting happen when declare a variable with var.we can use it before we declare it

```
2
3   console.log(x)
4   var x
```

2. What is the scope of a variable declared with var inside a function? What about inside a block (e.g., an if statement)?

We can use it only in the function but if we declare it in block we can use it in any place as it become global variable

3. List all JavaScript primitive types in ES5. Give an example of each.

Number,string,undefined,null,Boolean

Var x = 5 => number

4. What is the difference between a primitive type and an object type? Give an example where this difference is important.

In the primitive we can compare with (==) because we compare the value but in the object we compare the reference.

We can use functions and declare it in the object type.

5. Create a number, string, and boolean using both literal and constructor syntax. Show the difference in their types using typeof.

```
var num = 5
var str = "str"
var bool = true

var num2 = Number(5)
var str2 = String("str")
var bool2 = Boolean(true)

console.log(typeof num)
console.log(typeof str)
console.log(typeof bool)
console.log(typeof num2)
console.log(typeof str2)
console.log(typeof bool2)
```

```
number                                  assignment.js:11
string                                  assignment.js:12
boolean                                 assignment.js:13
number                                  assignment.js:14
string                                  assignment.js:15
boolean                                 assignment.js:16
>
```

6. Why is it generally recommended to use literals instead of constructors for primitive types?

Easy,cleaner,faster

7. Given the following code, what will be the output? Explain why.

```
var x = 123.4567;
console.log(x.toFixed(2));
```

output : 123.46

two numbers after the (.)

```
console.log(x.toPrecision(4));
```

123.5

Four numbers from the beginning of the number

8. What is NaN? How can you check if a value is NaN? Give an example.

It’s a value that mean it’s not a number.

Happen when we need to cast a string to a number but it’s not a number like this : “a123”

9. What is the difference between parseInt, parseFloat, and Number? Give an example for each.

parseInt : convert to int

parseFloat : convert to float

Number : convert to int and float

```
var str1 = "12.12"
var str2 = "12.12"
var str3 = "12.12"

str1 = parseInt(str1)
str2 = parseFloat(str2)
str3 = Number(str3)

console.log(str1)
console.log(str2)
console.log(str3)
```

```
12                                  assignment.js:11
12.12                               assignment.js:12
12.12                               assignment.js:13
>
```

10. What is the difference between implicit and explicit type casting? Give an example of each.

Explicit : the developer who cast the variable

Implicit : JS cast the variable based on the operator used like (+ - *)

11. What will be the result and type of the following expressions? Explain your answer.

- true + 5 = 6
- "10" – 2 = 8
- 12 - "1a" NAN
- 5 / 0 infinity
- 5 + undefined = NAN

12. What will be logged to the console in the following code? Explain each step.

var a = "15.5";

var b = +a;

console.log(b, typeof b);

it print => 15.5 'number'

because the (+) operator will cast the variable (a) to a Number

13. What will be the output of:

var result = 20 > true < 5 == 1;

console.log(result);

Explain why.

it print => True

the sequence is :
20 > true => true

true < 5 => true

true == 1 => true

14. Write a function that takes a string and returns true if it can be converted to a valid number, and false otherwise.

```
function validNumber (str){
    var num = Number(str)
    return !isNaN(num)
}

console.log(validNumber("a"))

```

15. Write a program that prints all numbers from 1 to 20 using a while loop.

```
var reach = 20
var begin = 1
while(begin <= reach){
    console.log(begin);
    begin+=1
}

```

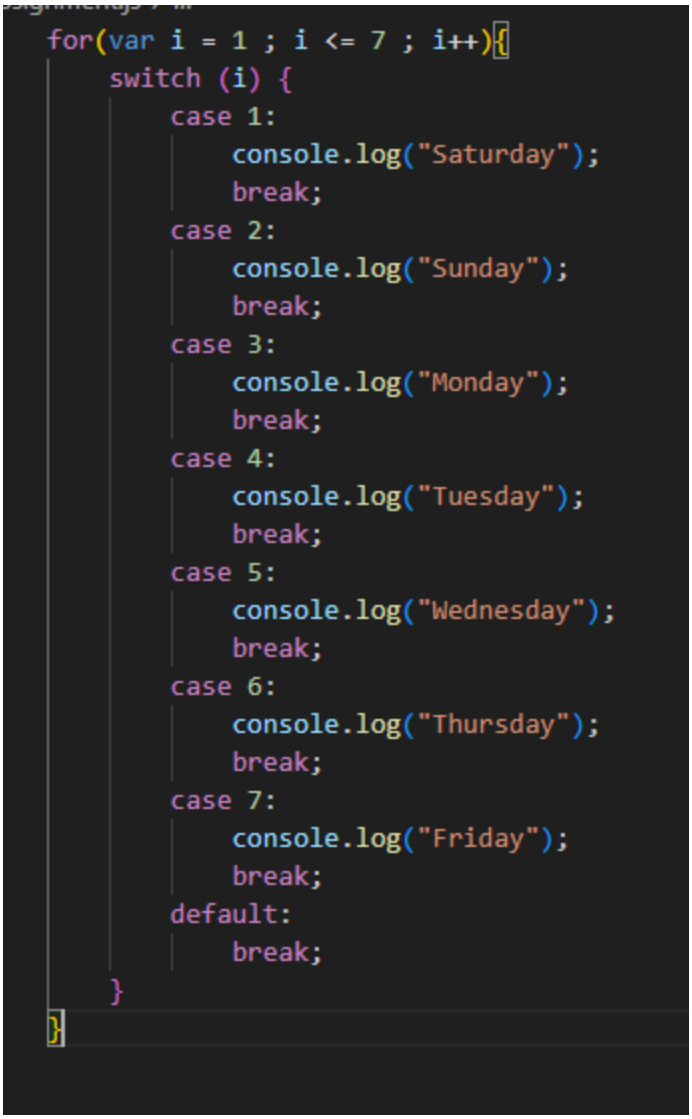
16. Write a program that asks the user to enter numbers until they enter 0, using a do...while loop. After the loop ends, print the sum of all entered numbers (excluding 0).

```
var res = 0
do {
    var userInput = Number(prompt("enter a number please"))
    res += userInput
} while (userInput != 0);

console.log(res);

```

17. Write a program that takes a number from 1 to 7 and prints the corresponding day of the week using a switch statement. Use a for loop to test your program with all numbers from 1 to 7.



```
for(var i = 1 ; i <= 7 ; i++){
    switch (i) {
        case 1:
            console.log("Saturday");
            break;
        case 2:
            console.log("Sunday");
            break;
        case 3:
            console.log("Monday");
            break;
        case 4:
            console.log("Tuesday");
            break;
        case 5:
            console.log("Wednesday");
            break;
        case 6:
            console.log("Thursday");
            break;
        case 7:
            console.log("Friday");
            break;
        default:
            break;
    }
}
```