

## Quiz 6:

9. Write expected output of following code on paper:

```
var x = 1;

function foo() {
  console.log(x);
  var y = 2;

  function foo1() {
    var y = 3;
    if (!x) {
      z = 4;
    }
    var x = 5;
    console.log(x + y + z);
  }

  if(y==2){
    var x = 3;
  }
  //console.log(z);
  foo1(); /* Comment this call and see the changes */
  console.log(x);
  console.log(y);
  console.log(z);
}

console.log(x);
//console.log(y);
//console.log(z);
foo(); /* Comment this call and see the changes */
console.log(x);
//console.log(y);
//console.log(z);
```

a. Run and compare the results with your expected output, make sure you understand the outputs:

This is the output with explanation:

1 //console.log(x) print 1 because x is declared at the beginning and has 1 as value

Undefined /\*this is foo function scope the value of x is undefined because the variable x is declared in the condition 'if' and there is no value assigned to x before this statement \*/

12 /\*execution of foo1(): the y is declared inside the foo1 and 3 assigned to it, x is undefined because it's redeclared in the foo1 scope function, which mean the condition is true and a new global variable declared 'z', the value 5 assigned to x. to resume x=5, y=3 and z=4 the sum is 12\*/

3 //in the scope of foo y=2 so the condition is true which means x=3

2 // y in the scope of foo equals 2

4 // z declared in the foo1 as global variable and the value of 4 assigned to it.

1 //in the global scope x=1;

b. Now uncomment commented parts one at a time and you will notice you won't see all the outputs, it will fail at the line you just uncommented, see the console for reason of failure and make sure you understand why.

- If we uncomment the first statement, we will get an error because the foo1 function not called yet and the global variable z is defined in the foo1 function
- If we uncomment the two statement before foo() statement we will get an error, because the variable y and z not declared in the global scope.
- If we uncomment the two statement after foo() function we will display just z because it's declared in the foo1 as global variable but y is declared as variable in the scope of foo so we will get an error because it's not declared in the global scope

c. Next, comment the call to inner function foo1() and examine the result.

We will get an error to display the value of z inside the foo function because z is declared in the foo1 function as global and the foo1 is not executed.

**10. Figure out the output of following lines of code:**

```
var x = 1;
var y = 2;
var z = 3;

function foo() {
  function foo1() {
    console.log(`value of x: ${x}`);
    console.log(`value of y: ${y}`);
    console.log(`value of z: ${z}`);
  }

  var z = 4;
  foo1();
  var x = 3;

  console.log(`value of x: ${x}`);
  console.log(`value of y: ${y}`);
}
console.log(`value of y: ${y}`);
foo();
console.log(`value of x: ${x}`);
console.log(`value of z: ${z}`);
```

The out put is

value of y: 2 // the value of y is 2 declared as global scope

value of x: undefined /\*because x is declared in the foo scope and any value assigned to x before the statement foo1\*/

value of y: 2 // global variable and not redeclared in any function

value of z: 4 // redeclared and 4 assigned to z before the execution of foo1()

value of x: 3 // redeclared and 3 assigned to it before this statement

value of y: 2 // global variable and not redeclared in any function

value of x: 1 // global variable

value of z: 3 // global variable