

```

1 // ===== Memoization and Algorithm Optimization =====
2
3 // storing the value into a Array
4
5 let str = [];
6
7 function pow(x, y){
8     let total = 1;
9
10    for(let i = 1; i <= y; i++){
11        total *= x;
12    }
13    str.push(total);
14    console.log(str); // array
15    return total;
16 }
17
18 // call the function
19 let res = pow(3, 3);
20 console.log(res); // 27
21 // again call the function
22 pow(2, 3); // (2)^3 [27, 8]
23
24 //***** string value in Object key value pair or Map *****
25
26 pow1.calculated = {}; // create object of this function .. we call use simply variable as well
27
28 function pow1(x, y){
29     let stringVersion = x + "^" + y;
30     // check if x and y power already have or not
31     if(stringVersion in pow1.calculated){
32         return pow1.calculated[stringVersion]; // it return the (3,3) => 27 value
33     }
34
35     let total = 1;
36     for(let i = 1; i <= y; i++){
37         total *= x;
38     }
39     pow1.calculated[stringVersion] = total;
40     console.log(pow1.calculated); // {3^3: 27, 2^3: 8}
41     return total;
42 }
43 pow1(3, 3);
44 pow1(3, 3);
45 pow1(2, 3);

```