

Iterative Algorithms - Practice Problems

Do the given problems using JavaScript.

1. Write a Program to find two array elements in an array that add up to a number

Example:- Input: arr = [1,9,0,7,5], 10

Output: 1, 9

2. Write a Program to find the sum of n numbers using a while loop.
3. Write a Program to iterate from 0 to n using JavaScript for loop . For each iteration, it will check if the current number is odd or even, and display a message to the screen.
4. Write a Program to find and print the first n happy numbers.

According to Wikipedia a happy number is defined by the following process :
"Starting with any positive integer, replace the number by the sum of the squares of its digits, and repeat the process until the number equals 1 (where it will stay), or it loops endlessly in a cycle which does not include 1. Those numbers for which this process ends in 1 are happy numbers, while those that do not end in 1 are unhappy numbers (or sad numbers)".

Example:- n = 5

First 5 happy numbers are : 1, 7, 10, 13, 19

Solutions

1.

```
function findSum (arr, sum) {
  for (var i=0, arrLength=arr.length; i<arrLength; i++){
    for (var j=i+1; j<arrLength; j++) {
      if (arr[i]+arr[j]==sum){
        return [arr[i],arr[j]];
      }
    }
  }
  return -1;
}
```

2.

```
function numSum (num) {
  var sum = 0,i=1;
  while(i<=num){
    sum+=i;
    i++;}
  return sum;
}
```

3.

```
function evenOrOddNum (n) {
  for (var i=0; i<=n; i++) {
    if (i === 0) {
      console.log(i + " is even");
    }
    else if (i % 2 === 0) {
      console.log(i + " is even");
    }
    else {
      console.log(i + " is odd");
    }
  }
}
```

4.

```
function happy_number(num)
{
  var m, n ;
  var c = [] ;

  while(num != 1 && c[num] !== true)
```

```

    {
        c[num] = true ;
        m = 0 ;
        while (num > 0) {
            n = num % 10 ;
            m += n * n ;
            num = (num - n) / 10 ;
        }
        num = m ;
    }
    return (num == 1) ;
}

var n = 5, temp = n; // n numbers
var num = 1;
var f5 = '';
while(n-- > 0)
{
    while(!happy_number(num))
        num++;
    f5 = f5+(num + ", ") ;
    num++;
}
console.log('First ' + temp + ' happy numbers are : '+f5);

```