8 MeanMedianMode
+ Object methods

```
function meanMedianMode(array) {

  return {
    mean : getMean(array),
    median : getMedian(array),
    mode : getMode(array)
  };
}

function getMean(array){

  var sum = 0;
  array.forEach((num)=>{
    sum+=num

  });

  var mean = sum / array.length;
  return mean;
}

function getMedian(array){
// sort by ascending order
array.sort((a,b)=>{return a-b });
var median;

//odd number of array,  median = middle element will be median
//even number of array,  median =avg of middle two elements will be median

if (array.length %2 !=0){
  median =
  array[Match.floor(array.length/2)]
} else {
  var mid1 = array[ (array.length/2) -1];
  var mid2 = array[array.length/2 ];
median = (mid1 + mid2)/2;
}

return median;
}
```

```
function getMode(array){

  // object as  hashtable
  // object as every of number of array as property and have each corresponding
value be the nubmer of times that number shows up
  // if we pass this array [3,4,2,3,6,4,1] our hashtable object should look like this
  // {
  // '1':1,
  // '2':1,
  // '3':2,
  // '4':2,
  // '6':1
  // }

  var modeObj = {}
  array.forEach( (num) => {
    if ( !modeObj[num] ){
      modeObj[num] = 0;
    }
    modeObj[num]++;
  } );

  // MODES= now we need to find which number or numbers appear most frequent

  var maxFrequencey = 0;
  var modes = [];
  for(var num in modeObj) {
    if (modeObj[num] > maxFrequencey) {
      modes = [num];
      maxFrequencey = modeObj[num];
    } else if (modeObj[num] == maxFrequencey) {
      modes.push(num);
    }

      // edge case: if every number appear at same frequecy than thsere would be no
mode
    if(modes.length  === Object.keys(modeObj).length) {
      modes = [];
    }

    return modes;
  }
```

```
}
```

meanMedianMode([1,2,3,4,5,4,6,1])

==

- **for/in - loops through the properties of an object**
- **for (var in object) {**
- **code block to be executed**
- **}**

 var person = {fname:"John", lname:"Doe", age:25};

```
    var text = "";
    var x;
    for (x in person) {
        text += person[x] + " ";
    }
```

John Doe 25

==
 Object.keys(modeObj)
return a array of keys

==