//Anonymous Function:

// a.   Print odd numbers in an array

//let num = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15]

let odd = function() {

    for (var i = 1 ; i < 16 ; i += 2 ) {

        console.log(i);

}

}

odd ()

//output:

//1

//3

//5

//7

//9

//11

//13

//15

//IIFE Function:

// a.   Print odd numbers in an array

// let num = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15]

(function odd () {

    for (var i = 1 ; i < 16 ; i += 2 ) {

        console.log(i);

}}) ();

//output:

//1

//3

//5

//7

//9

//11

//13

//15

//Arrow Function:

//a.    Print odd numbers in an array

let odd = ()=> {

    for (var i = 1 ; i < 16 ; i += 2 ) {

        console.log(i);

}

}

odd ()

//output:

//1

//3

//5

//7

//9

//11

//13

//15

//Anonymous Function:

// b. Convert all the strings to title caps in a string array

let b = function() {

  function changeToUpperCase(founder) {

    return founder.toUpperCase();

  }

  const result = changeToUpperCase("Arasu Ramanan");

  console.log(result);

}

b ()

//OUTPUT:

//ARASU RAMANAN

//IIFE Function:

// b. Convert all the strings to title caps in a string array

(function() {

    function changeToUpperCase(founder) {

      return founder.toUpperCase();

    }

    const result = changeToUpperCase("Arasu Ramanan");

    console.log(result);

  }) ();

//OUTPUT:

//ARASU RAMANAN

//Arrow Function:

//b.  Convert all the strings to title caps in a string array

let b = ()=> {

    function changeToUpperCase(founder) {

      return founder.toUpperCase();

    }

    const result = changeToUpperCase("Arasu Ramanan");

    console.log(result);

  }

  b ()

//OUTPUT:

//ARASU RAMANAN

//Anonymous Function:

//c.    Sum of all numbers in an array

var arr = [4, 8, 7, 13, 12]

var sum = 0;

for (let i = 0; i < arr.length; i++) {

    sum += arr[i];

}

let b = function() {

console.log("Sum is " + sum);

}

b()

//OUTPUT:

//SUM is 44

//IIFE Function:

//c.    Sum of all numbers in an array

var arr = [4, 8, 7, 13, 12]

var sum = 0;

for (let i = 0; i < arr.length; i++) {

    sum += arr[i];

}

(function() {

console.log("Sum is " + sum);

})

()

//OUTPUT:

//SUM is 44

//Arrow Function:

//c.    Sum of all numbers in an array

var arr = [4, 8, 7, 13, 12]

var sum = 0;

for (let i = 0; i < arr.length; i++) {

    sum += arr[i];

}

let b = ()=> {

console.log("Sum is " + sum);

}

b()

//OUTPUT:

//SUM is 44

//Anonymous Function:

//d.  Return all the prime numbers in an array

let num = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20];

let result = [];

function isPrime(num) {

  if(num < 2) return false;

  for (let k = 2; k < num; k++){

    if(num % k == 0){

      return false;

    }

  }

  return true;

}

let b = function() {

num.forEach(function (element) {

  const item = isPrime(element);

  if (item) {

    result.push(element);

  }

});

console.log(result);

}

b()

//OUTPUT:

// [2, 3, 5, 7, 11, 13, 17, 19]

//IIFE Function:

//d.  Return all the prime numbers in an array

(

    function(numArray){

       numArray = numArray.filter((number) => {

         for (var i = 2; i <= Math.sqrt(number); i++) {

           if (number % i === 0) return false;

         }

         return true;

       });

       console.log(numArray);

   })([1, 2, 3, 4, 5, 6, 7, 8])

   //OUTPUT:

// [2, 3, 5, 7, 11, 13, 17, 19]

//Arrow Function:

//d.  Return all the prime numbers in an array

let num = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20];

let result = [];

function isPrime(num) {

  if(num < 2) return false;

  for (let k = 2; k < num; k++){

    if(num % k == 0){

      return false;

    }

  }

  return true;

}

let b = ()=> {

num.forEach(function (element) {

  const item = isPrime(element);

  if (item) {

    result.push(element);

  }

});

console.log(result);

}

b()

//OUTPUT:

// [2, 3, 5, 7, 11, 13, 17, 19]

//Anonymous Function:

// e.   Return all the palindromes in an array

let  a = function() {

    function is\_palindrome(s) {

    let pal1 = s.toLowerCase();

    let pal2 =pal1.split("");

    let pal3 = pal2.reverse();

    let pal4 = pal3.join("");

    return pal4 === pal1 ? "Palindrome" : "Not a Palindrome"

}

console.log(is\_palindrome("malayalam"));

}

a();

//OUTPUT:

//Palindrome

//IIFE Function:

// e.   Return all the palindromes in an array

    (function is\_palindrome(s) {

    let pal1 = s.toLowerCase();

    let pal2 =pal1.split("");

    let pal3 = pal2.reverse();

    let pal4 = pal3.join("");

    return pal4 === pal1 ? "Palindrome" : "Not a Palindrome"

}) ();

console.log(is\_palindrome("malayalam"));

//OUTPUT:

//Palindrome

//Arrow Function:

//e.    Return all the palindromes in an array

let  a = ()=> {

    function is\_palindrome(s) {

    let pal1 = s.toLowerCase();

    let pal2 =pal1.split("");

    let pal3 = pal2.reverse();

    let pal4 = pal3.join("");

    return pal4 === pal1 ? "Palindrome" : "Not a Palindrome"

}

console.log(is\_palindrome("malayalam"));

}

a();

//OUTPUT:

//Palindrome

//Anonymous Function:

//f. Return median of two sorted arrays of the same size.

let median= function (array1,array2) {

    array1=[...array1,...array2]

    console.log(`Unsorted array after merging two arrays :${array1}`)

    let temp

       for(var i=0;i<array1.length;i++)

           {

                    for(var j=i;j<array1.length;j++)

                         {

                                    if(array1[i]>array1[j+1])

                                       {

                                            temp=array1[i]

                                            array1[i]=array1[j+1]

                                            array1[j+1]=temp

                                       }

                         }

             }

     console.log(`sorted array is: ${array1}`)

       let n=array1.length

       let median

       if(n%2==0)

         {

              let x=n/2

 median=(array1[x-1]+array1[x])/2

          }

       else if(n%2!=0)

         {

              let x=Math.round(n/2)

             median=array1[x-1]

          }

     return median

}

console.log(`Median of two sorted arrays of same size is: ${median([1,3,5,7,9],[2,4,6,8,10])}`)

//OUTPUT:

//Unsorted array after merging two arrays :1,3,5,7,9,2,4,6,8,10

//sorted array is: 1,2,3,4,5,6,7,8,9,10

//Median of two sorted arrays of same size is: 5.5

//IIFE Function:

//f.  Return median of two sorted arrays of the same size.

( function median(array1,array2) {

    array1=[...array1,...array2]

    console.log(`Unsorted array after merging two arrays :${array1}`)

    let temp

   /\* array1=array1.sort((a,b)=>a-b)

    console.log(array1)\*/

    for(var i=0;i<array1.length;i++)

        {

                for(var j=i;j<array1.length;j++)

                    {

                           if(array1[i]>array1[j+1])

                             {

                                 temp=array1[i]

                                 array1[i]=array1[j+1]

                                 array1[j+1]=temp

                             }

                    }

     }

  console.log(`sorted array is: ${array1}`)

 let n=array1.length

 let median

 if(n%2==0)

  {

    let x=n/2

    median=(array1[x-1]+array1[x])/2

  }

  else if(n%2!=0)

  {

    let x=Math.round(n/2)

    median=array1[x-1]

  }

  console.log(`Median of two sorted arrays of same size is: ${median}`)

 }([1,3,5,7,9],[2,4,6,8,10]))

 //OUTPUT:

//Unsorted array after merging two arrays :1,3,5,7,9,2,4,6,8,10

//sorted array is: 1,2,3,4,5,6,7,8,9,10

//Median of two sorted arrays of same size is: 5.5

//Anonymous Function:

//g.    Remove duplicates from an array

let duplicates = function (values=[])

    {

 for(var i = 0;i<values.length; i++)

    {

for(var j = i+1; j<values.length; j++)

    {

if(values[i] == values[j])

    {

values.splice(j,1)

                                              }

   }

     }

return values

  }

console.log("Unique values in array are:");

console.log(duplicates([1, 2, 1, 3, 4, 5, 4, 3, 5, 6]));

//OUTPUT:

//Unique values in array are:

// [1, 2, 3, 4, 5, 6]

//IIFE Function:

//g.    Remove duplicates from an array

(function duplicates (values=[]) {

    for(var i = 0;i<values.length;i++)

        {

 for(var j = i+1; j<values.length; j++)

        {

 if(values[i] == values[j])

        {

 values.splice(j,1)

         }

         }

         }

console.log(`Unique values in array are: ${values}`)

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

//OUTPUT:

//Unique values in array are:

// [1, 2, 3, 4, 5, 6]

//Anonymous Function:

// h.   Rotate an array by k times

let rotate=function (elements,k)

     {

 for(var i=0;i<k;i++)

     {

leftrotate(elements)

     }

function leftrotate(elements)

     {

 var temp=elements[0]

for(var i=0;i<elements.length-1;i++)

                                                            {

                                                                 elements[i]=elements[i+1]

    }

 elements[elements.length-1]=temp

  }

 return elements

     }

 console.log(`Left rotating elemnts :${rotate([3,4,5,6,7],2)}`)

 //OUTPUT:

//Left rotating elemnts :5,6,7,3,4

//IIFE Function:

// h.   Rotate an array by k times

(function rotate (elements,k)

  {

for(var i=0;i<k;i++)

   {

 leftrotate(elements)

    }

function leftrotate(elements)

   {

 var temp=elements[0]

for(var i=0;i<elements.length-1;i++)

                                                            {

 elements[i]=elements[i+1]

   }

elements[elements.length-1]=temp

                                                    }

console.log(`Left rotating elemnts :${elements}`)

}([3,4,5,6,7],2))

 //OUTPUT:

//Left rotating elemnts :5,6,7,3,4