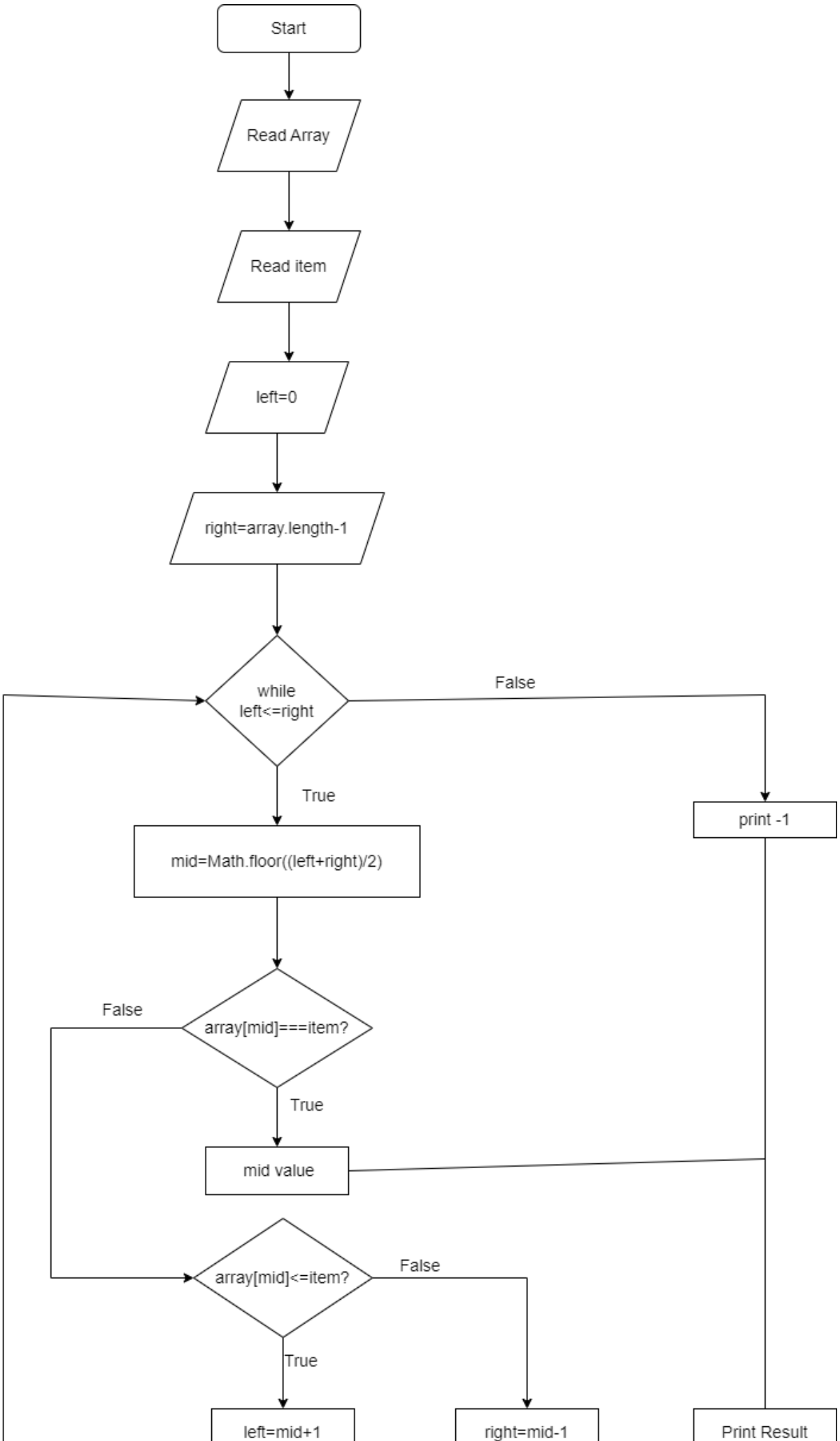
Binary_Search Code=

```
function binarySearch(array,item)
{
   left=0
   right=array.length-1

   while(left<=right)
   {
      mid=Math.floor((left+right)/2)
      if(array[mid]===item)
      {
        return mid
      }
       if(array[mid]<=item)
       {
         left=mid+1
       }
       else{
         right=mid-1
       }

   }
  return -1
}
let array=[10,20,30,40,50,60,70,80,90]
let item=10
let result=binarySearch(array,item)
console.log(result)
```

Binary_Search Flowchart


Start
Read Array
Read item
left=0
right=array.length-1
while
left<=right
False
True
print -1
mid=Math.floor((left+right)/2)
False
array[mid]===item?
True
mid value
array[mid]<=item?
False
True
left=mid+1
right=mid-1
Print Result

Algorithm For Binary Search

Step 1= Start Coding

Step 2= define array

Step 3= define input variable which u want to search in array

Step 4= define left hand index value(i.e 0) [Note=the index value of array always starts from 0]

Step 5= define the right hand index value i.e end value of index or you can define it as (array.length-1) (-1 is taken because by default it start from 1)

Step 6= Now we have to iterate array so here we are taking while loop and checking condition as (left<=item)

Step 7= If the loop condition is true then it enters inside the loop.

Step 8= If the loop Condition is false then it returns -1.

Step 9= Now this is binary search so we have to provide mid value. so First calculate mid value by mid=Math.floor((left+right)/2)

[Note= Math.floor is used to give roundfigure value bt lower side] e.g if the mid=4.5 then it gives 4

[Note= Math.cell is used to give roundfigure value bt higher side) e.g if the mid=4.5 then it gives 5

Step 10= Now check the condition (array[mid===item])

Step 11= If the condition is true then give mid value and then print the result

Step 12= if the condition is false then jump to next condtion which is (array[mid]<=item)

Step 13= If the condition is true then enter inside and increase the mid value by 1 and store it in left variable (i.e left=mid+1).

Step 14= Then repeat step 6,step 7,step 9,step 10,step 12,step 13

Step 15= If the condition is false then jump in else part and decrease the mid value 1 and store it in right variable (i.e right=mid-1).

Step 16= then go to step 6,step 7,step 9,step 10,step 12,step 15

Step 17= After Completion of Array length the loop gives false condition and it directly jump to printing.