1. Write a Binary search program to search the elements of the integer Array.

Program:

**public** **class** binarySerach {

**static** **int** binarySearch(**int** a[], **int** beg, **int** end, **int** val)

{

**int** mid;

**if**(end >= beg)

{

mid = (beg + end)/2;

**if**(a[mid] == val)

{

**return** mid+1; /\* if the item to be searched is present at middle

\*/

}

/\* if the item to be searched is smaller than middle, then it can only

be in left subarray \*/

**else** **if**(a[mid] < val)

{

**return** *binarySearch*(a, mid+1, end, val);

}

/\* if the item to be searched is greater than middle, then it can only be

in right subarray \*/

**else**

{

**return** *binarySearch*(a, beg, mid-1, val);

}

}

**return** -1;

}

**public** **static** **void** main(String args[]) {

**int** a[] = {89, 90, 65, 52, 37, 44, 21, 55, 102}; // given array

**int** val = 55; // value to be searched

**int** n = a.length; // size of array

**int** res = *binarySearch*(a, 0, n-1, val); // Store result

System.***out***.print("The elements of the array are: ");

**for** (**int** i = 0; i < n; i++)

{

System.***out***.print(a[i] + " ");

}

System.***out***.println();

System.***out***.println("Element to be searched is: " + val);

**if** (res == -1)

System.***out***.println("Element is not present in the array");

**else**

System.***out***.println("Element is present at " + res + " position of array");

}

}

Output:

The elements of the array are: 89 90 65 52 37 44 21 55 102

Element to be searched is: 55

Element is present at 8 position of array

1. Create a login page using the Bootstrap and also include the Typescript and ES6 features like Loops, If-else conditions.

