

SBA-10

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

```
public class BinarySearch {  
  
    int binarySearch(int[] arr, int x)  
    {  
        int l = 0;  
        int r = arr.length - 1;  
        while (l <= r) {  
            int m = l + (r - l) / 2;  
  
            // Check if x is present at mid  
            if (arr[m] == x)  
                return m;  
  
            // If x greater, ignore left half  
            if (arr[m] < x)  
                l = m + 1;  
  
            // If x is smaller, ignore right half  
            else  
                r = m - 1;  
        }  
  
        // if we reach here, then element was  
        // not present  
        return -1;  
    }  
}
```

```
}
```

```
// Driver method to test above
```

```
public static void main(String[] args)
```

```
{
```

```
    BinarySearch ob = new BinarySearch();
```

```
    int[] arr = { 2, 3, 4, 10, 40 };
```

```
    int x = 10;
```

```
    int result = ob.binarySearch(arr, x);
```

```
    if (result == -1)
```

```
        System.out.println("Element not present");
```

```
    else
```

```
        System.out.println("Element found at "  
                            + "index " + result);
```

```
    }
```

```
}
```

OUTPUT:

```
BinarySearch.java X
26         // not present
27         return -1;
28     }
29
30     // Driver method to test above
31     public static void main(String[] args)
32     {
33         BinarySearch ob = new BinarySearch();
34         int[] arr = { 2, 3, 4, 10, 40 };
35         int x = 10;
36         int result = ob.binarySearch(arr, x);
37         if (result == -1)
38             System.out.println("Element not present");
39         else
40             System.out.println("Element found at "
41                               + "index " + result);
42     }
43 }
44
```

Terminal Problems Console X Progress Servers

<terminated> BinarySearch [Java Application] C:\Program Files\Java\jre1.8.0_241\bin\javaw.exe (04-Apr-2022, 10:03:10)
Element found at index 3