

-----JAVA-----

-----LINEAR SEARCH-----

```
public class linear_search
{
    public static void main(String[] args)
    {
        int[] a={10,20,30,40,50};
        int target=40;
        System.out.println(linear(a,target));
    }

    static int linear(int[] a, int target) {
        for(int i=0;i<a.length;i++)
        {
            if(target==a[i])
            {
                return i;
            }
        }
        return -1;
    }
}
```

-----BINARY SEARCH-----

```
public class binary_search {

    public static void main(String[] args) {
        int[] a={10,20,30,40,50};
        int target=40;
        System.out.println(binary(a,target));
    }

    static int binary(int[] a, int target)
    {
        //length is 0
        if(a.length == 0)
```

```
{
    return -1;
}
int start=0;
int end= a.length-1;
while (start<=end)
{
    int mid= (start +end)/2 ;
    if(target<a[mid])
    {
        end=mid-1;
    }
    else if(target>a[mid])
    {
        start=mid+1;
    }
    else {
        return mid;
    }
}
return -1;
}
```