Algorithm

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#include <bits/stdc++.h>

using namespace std;

int binary_search(vector<int> &arr, int target){
        int left = 0;
        int right = arr.size() - 1;

        while(left <= right){
                int mid = left + (right - left) / 2;
                if(arr[mid] == target){
                        return mid;
                }else if(arr[mid] < target){
                        left = mid + 1;
                }else{
                        right = mid - 1;
                }
        }
        return -1;
}

int main(){
        vector<int> arr = {1,2,3,4,5,6,7,8,9,10};
        int target = 6;

        int result = binary_search(arr,target);
        if(result != -1){
                cout<<"Element␣found␣at␣index:"<<result<<'\n';
        }else{
                cout<<"Element␣not␣found␣in␣the␣array:"<<'\n';
        }
}
```