

**Program:**

```
def binary_search(arr, target):
```

```
    low = 0
```

```
    high = len(arr) - 1
```

```
    while low <= high:
```

```
        mid = (low + high) // 2
```

```
        if arr[mid] == target:
```

```
            return mid
```

```
        elif arr[mid] < target:
```

```
            low = mid + 1
```

```
        else:
```

```
            high = mid - 1
```

```
    return -1
```

```
# Taking input for the sorted array
```

```
arr = list(map(int, input("Enter sorted elements of the array separated by space: ").split()))
```

```
# Taking input for the target element
```

```
target = int(input("Enter the target element to search: "))
```

```
# Performing binary search
```

```
result = binary_search(arr, target)
```

```
if result != -1:
```

```
    print(f"Element found at index {result}")
```

```
else:
```

```
    print("Element not found in the array")
```

## Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Python +

```
PS C:\Users\katur\Music\DAA practicals> & C:/Users/katur/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/katur/Music/DAA practicals/practica1b.py"
● Enter sorted elements of the array separated by space: 2 4 6 8 10 12 14 16
Enter the target element to search: 12
Element found at index 5
○ PS C:\Users\katur\Music\DAA practicals> █
```