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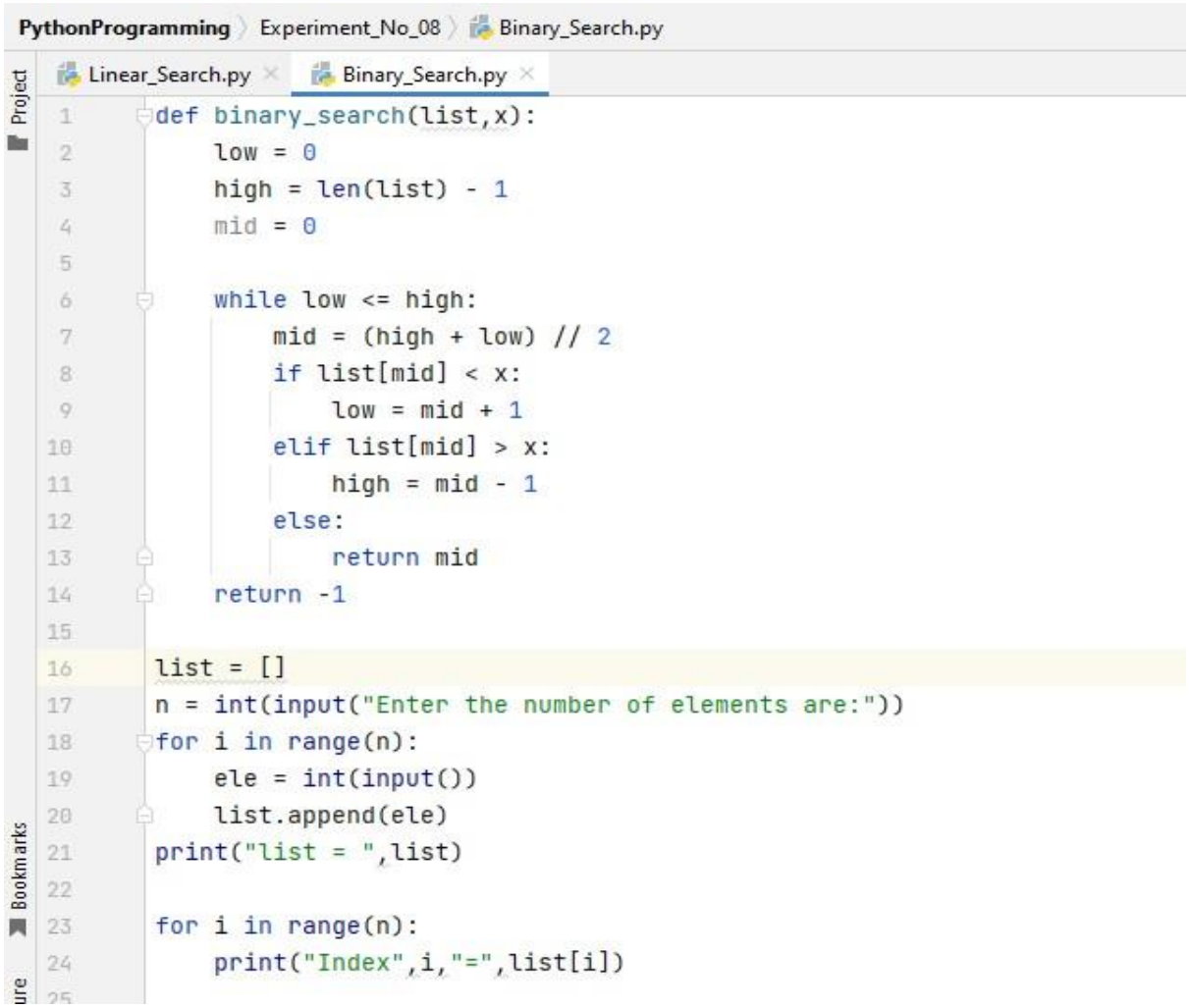
Roll no :- 99 Batch :- B2 Div :- B

Write a program to implement various searching algorithms

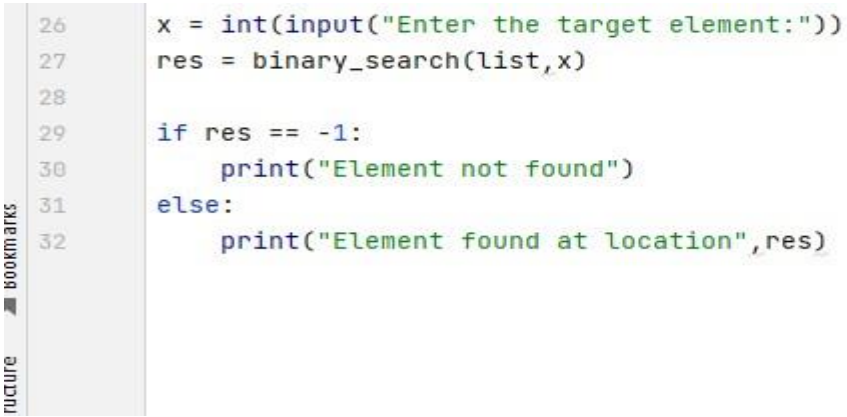
1]Binary Search :-



PythonProgramming 〉 Experiment_No_08 〉 Binary_Search.py

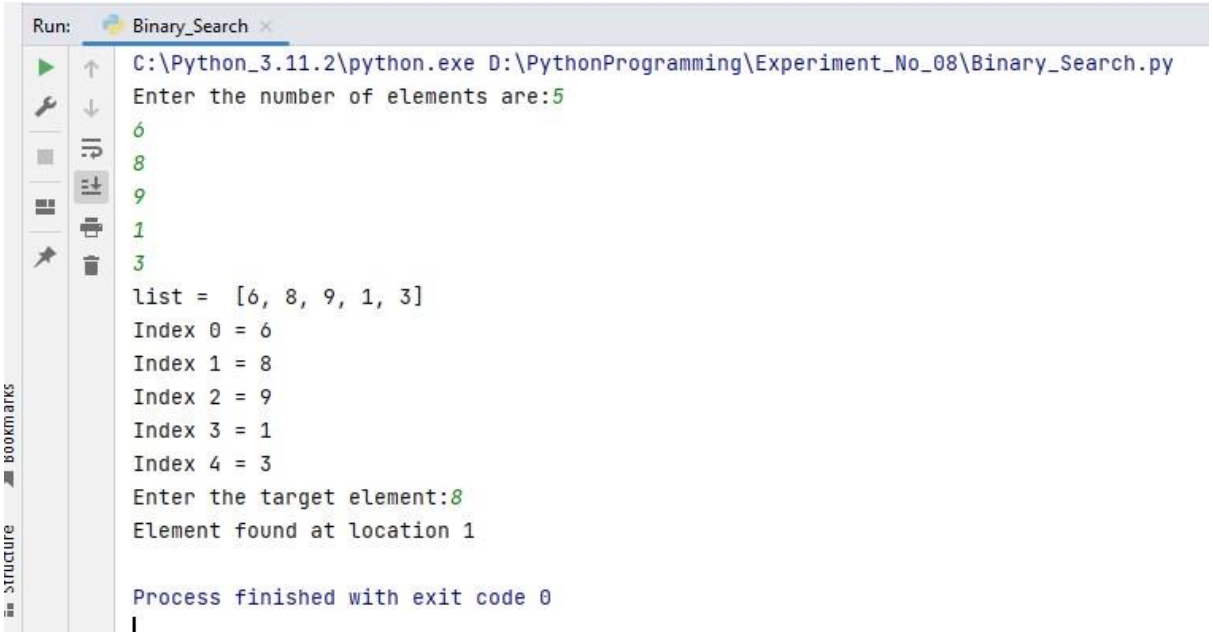
Linear_Search.py | Binary_Search.py

```
def binary_search(list,x):
    low = 0
    high = len(list) - 1
    mid = 0

    while low <= high:
        mid = (high + low) // 2
        if list[mid] < x:
            low = mid + 1
        elif list[mid] > x:
            high = mid - 1
        else:
            return mid
    return -1

list = []
n = int(input("Enter the number of elements are:"))
for i in range(n):
    ele = int(input())
    list.append(ele)
print("list = ",list)

for i in range(n):
    print("Index",i,"=",list[i])
```

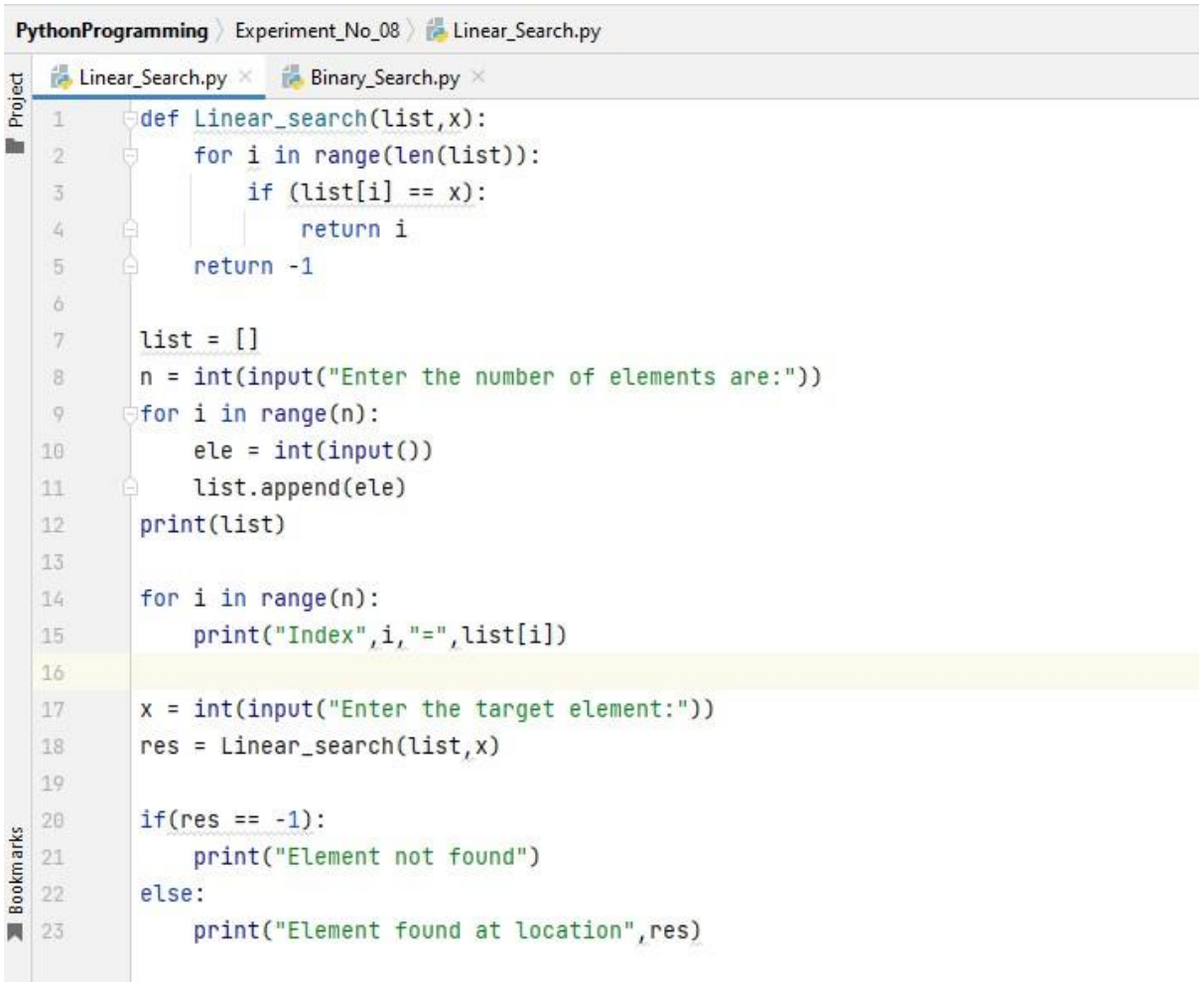


```
x = int(input("Enter the target element:"))
res = binary_search(list,x)

if res == -1:
    print("Element not found")
else:
    print("Element found at location",res)
```

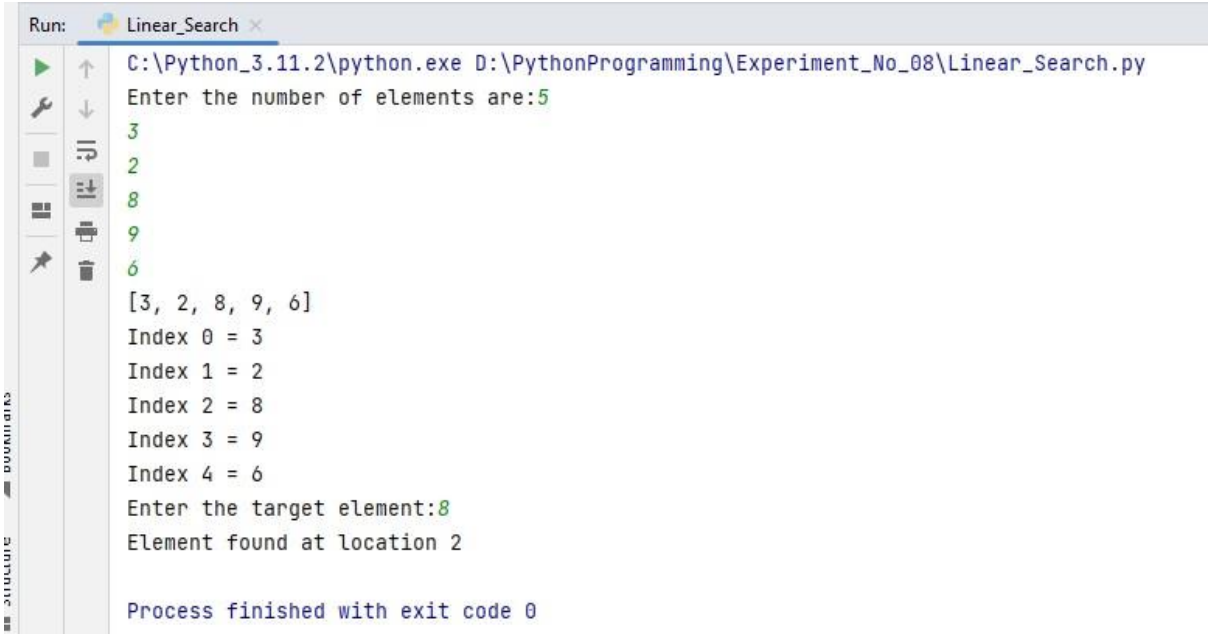
OUTPUT :-



2] Linear Search :-



OUTPUT :-


Run:
Linear_Search
C:\Python_3.11.2\python.exe D:\PythonProgramming\Experiment_No_08\Linear_Search.py
Enter the number of elements are:5
3
2
8
9
6
[3, 2, 8, 9, 6]
Index 0 = 3
Index 1 = 2
Index 2 = 8
Index 3 = 9
Index 4 = 6
Enter the target element:8
Element found at location 2
Process finished with exit code 0