DATE... 10 Oct 23 EXP. No... 4

Activity 4: Write a program to perform searching activity using linear and binary search.

```
def linear_search(arr, target):
    for i in range(len(arr)):
        if arr[i] == target:
            return i
    return -1
arr = [1, 2, 3, 4, 5, 6, 7, 8, 9]
target = 5
result = linear_search(arr, t
if result != -1:
    print(f"Element {target}
else:
    print(f"Element {target} n
```

```
# Binary search
def binary_search(arr, targ
    left, right = 0, len(arr)-
    while left <= right:
        mid = left + (right - left) // 2
        if arr[mid] == target:
            return mid
        elif arr[mid] < target:
            left = mid + 1
        else:
            right = mid - 1
    return -1
if result != -1:
    print(f"Element {target} found at index {
else:
    print(f"Element {target} not found in the list
```

```
[1, 3, 6, 8, 10, 15]
1. Linear Search
2. Bineary Search
3. Exit
Enter your choice: 1
6
[1, 3, 6, 8, 10, 15]
Element position is:  2
1. Linear Search
2. Bineary Search
3. Exit
Enter your choice: 2
10
[1, 3, 6, 8, 10, 15]
Element position is:  4
1. Linear Search
2. Bineary Search
3. Exit
Enter your choice: 3
Exit the program
```

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