

You, 1 hour ago | 1 author (You)

```
def binary_search( arr: list[int], x: int ) -> int:
```

```
    right: int = len( arr ) - 1
```

```
    left: int = 0
```

```
    if arr[left] == x:
```

```
        return left
```

```
    elif arr[right] == x:
```

```
        return right
```

```
    while left <= right:
```

```
        mid: int = ( left + right ) // 2
```

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

```
            return mid
```

```
        if arr[mid] < x:
```

```
            left = mid + 1;
```

```
        if arr[mid] > x:
```

```
            right = mid - 1
```

```
    |
```

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```
    return mid
```

```
# -----
```

```
array = [n for n in range(10)]
```

```
print(binary_search(array, 3))
```

```
print(binary_search(array, 7))
```

```
print(binary_search(array, 11))
```

```
print(binary_search(array, 20))
```

```
PS C:\Users\minec\Documents\system-assignments> & c:\Users\minec\Documents\system-assignments\week3\lab-2\.venv\Scripts\python.exe c:\Users\minec\Documents\system-assignments\week3\lab-2\lab-2.py
```

```
3
```

```
7
```

```
9
```

```
9
```

```
PS C:\Users\minec\Documents\system-assignments>
```