# Binary Search App Script for Ai-Resecomp Project

This Python script implements a binary search algorithm and includes a simple test case. It is designed to be part of the Ai-Resecomp project and can be executed directly from the command line.

## Python Script:

# binary\_search.py

def binary\_search(arr, target):

"""

Perform binary search on a sorted list.

Parameters:

arr (list): A sorted list of elements.

target (any): The element to search for.

Returns:

int: The index of the target element if found, else -1.

"""

left, right = 0, len(arr) - 1

while left <= right:

mid = (left + right) // 2

if arr[mid] == target:

return mid

elif arr[mid] < target:

left = mid + 1

else:

right = mid - 1

return -1

# Example usage

if \_\_name\_\_ == "\_\_main\_\_":

sorted\_list = [1, 3, 5, 7, 9, 11, 13, 15]

target = 9

result = binary\_search(sorted\_list, target)

if result != -1:

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

else:

print("Element not found")