14.Write a program that demonstrate the mathematical analysis of non recursive and recursive algorithms.

AIM: To find demonstrate the mathematical analysis of non recursive and recursive algorithms.

CODE:

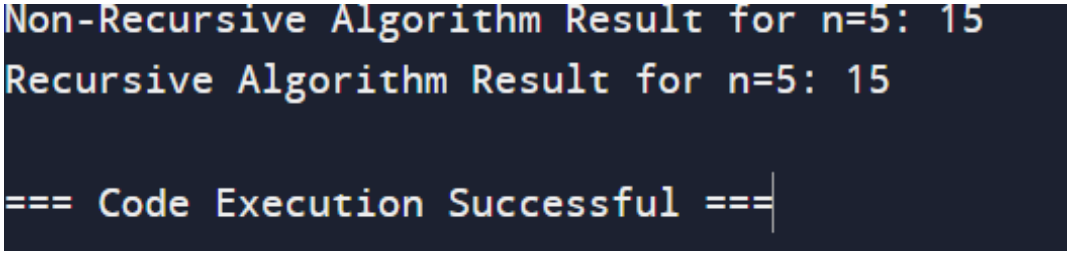
```
def non_recursive_algorithm(n):
    result = 0
    for i in range(1, n+1):
        result += i
    return result


def recursive_algorithm(n):
    if n == 0:
        return 0
    return n + recursive_algorithm(n-1)


# Test the algorithms
n = 5
non_recursive_result = non_recursive_algorithm(n)
recursive_result = recursive_algorithm(n)


print(f"Non-Recursive Algorithm Result for n={n}: {non_recursive_result}")
print(f"Recursive Algorithm Result for n={n}: {recursive_result}")
```

OUTPUT:




TIME COMPLEXITY:-O(n)