

Task 1

Input list: 10 20 30 40 50 4 3 3 4 4 4 4 3 4 4 4 4 4 4 4 5

Print Forward Times: 0.015ms, 0.011ms, 0.011ms, 0.012ms

Print Backward Times: 0.010ms, 0.013ms, 0.012ms, 0.010ms

Time for forward printing and backward printing using recursion is approximately the same.

Task 2

Case 1:

Iterations = 100

N = 2000

Non Tail Recursive Time: 0.00us

Tail Recursive Time: 0.00us

Non Recursive Time: 0.00us

Case 2:

Iterations = 100

N = 20000

Non Tail Recursive Time: 0.02us

Tail Recursive Time: 0.01us

Non Recursive Time: 0.00us

Task 3

Case 1:

N = 3

Time = 0 us

Case 2:

N = 10

Time = 2 us

Case 3:

N = 20

Time = 870 us

Case 4:

N = 30

Time = 390197 us

Case 5:

$N = 100$

Takes too much time to complete

Task 4:

The function is not tail recursive.