

Abhi Rangarajan uxs876

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CPU: 8%      used: 3.3G      free: 174.1GiB      01:56 PM
┌─"Yaa" ─┐ CPU Load   - 4%
│  YP"    │ Memory     - 4.6 GB/16.0 GB
└───.d┘   Battery    - 85% & Discharging

[abhi@abhi in repo: systems-assignments/week4/lab-3 on 0 main [!?!] via v3.12.5 took 39ms]
→ cat lab=3.py
File: lab-3.py
from time import time

def fibonacci( n: int ) -> int:
    if n <= 1:
        return n
    else:
        return fibonacci( n-1 ) + fibonacci( n-2 )

def fibonacci_memo( n: int ) -> int:
    memo = {0: 0, 1: 1}
    def fib( n ):
        if n not in memo:
            memo[n] = fib( n-1 ) + fib( n-2 )
        return memo[n]
    return fib( n )

# -----

start_time = time()
fib= fibonacci( 40 )
fib_naive_time = time() - start_time

start_time = time()
fib = fibonacci_memo( 40 )
fib_memo_time = time() - start_time

print(f"Fib Naive time: { fib_naive_time } seconds")
print(f"Fib Memo time: { fib_memo_time } seconds")

[abhi@abhi in repo: systems-assignments/week4/lab-3 on 0 main [!?!] via v3.12.5 took 31ms]
→ pipenv run python ./lab-3.py
Fib Naive time: 6.934724569320679 seconds
Fib Memo time: 1.6689300537109375e-05 seconds

[abhi@abhi in repo: systems-assignments/week4/lab-3 on 0 main [!?!] via v3.12.5 took 7s]
→ week4/Lab-3 python
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