Lab 08

How long did this assignment take?

6 hours

What was the hardest part of the assignment?

The Pseudocode was the hardest part for me

Was there anything unclear in the assignment?

I just had trouble getting the pseudocode going.

Pseudocode

Main

#store number requested

Get amount <- from user

#create dictionary to store known values

Create known\_values <- []

#create loop to iterate through until target number

For i in range(1,amount+1)

# Reset list at start of loop

A Calculated\_values <- []

# Has value been calculated?

If known\_values holds i -1 or known\_values holds i -2

Calculated\_values.append(known\_values[i – 1] +known\_values[i – 2]

Else

#

If number = 1

Calculated\_values.append(2)

Elif number = 2

calculated\_values.append(1)

B

Sum\_of\_values <- sum(calculated\_values)

C Known\_values[i] <- sum\_of\_values

# Print answer

D Print known\_values[amount-1]

Trace

Known\_values calculated\_values I amount

A [] [] 0 5

B [] [2] 0 5

C [2] [2] 0 5

A [2] [] 1 5  
B [2] [1] 1 5  
C [2,1] [1] 1 5  
A [2,1] [] 2 5  
B [2,1] [3] 2 5  
C [2,1,3] [3] 2 5

A [2,1,3] [] 3 5  
B [2,1,3] [4] 3 5  
C [2,1,3,4] [4] 3 5

A [2,1,3,4] [] 4 5  
B [2,1,3,4] [7] 4 5   
C [2,1,3,4,7] [7] 4 5

D [2,1,3,4,7] [7] 5 5

Algorithmic Efficiency

O(n) because it is only looped through once per value.