

Employee struct

sName byte 10 dup(?)

age word 18

salary dword ? or salary dword 5 dup(?)

dword ?

dword ?

dword ?

dword ?

ends

lengthof Employee.salary = 1

lengthof Employee.salary = 5

find average

tom employee < >

xor eax, eax

; total of all salaries

xor esi, esi

mov ecx, lengthof tom.salary

stLoop:

add eax, tom.salary[esi]

add esi, type tom.salary

loop stLoop

tom - send to method

mov ebx, offset tom ; ebx → tom

xor eax, eax

mov ecx, lengthof tom.salary

stLoop

add eax, (employee ptr [ebx]).salary[esi]

add esi, 4

loop stLoop

```
node struct
    left dword ?
    value dword ?
    right dword ?
ends
```

- preorder, in order, postorder
 - pre - get value, process left, process right
 - in - process left, get value, process right
 - post - go left, go right, get value

```
nodes struct 100 dup(< >)
start dword -1
avail dword nodes
```

	left	value	right
100			100
100			118
118			124
124			130
130			

```

mov ecx, 99
mov esi, ebx
add esi, 12
mov ebx, offset nodes
loop:
mov (node struct ptr [ebx]).right, esi
add ebx, 12
add esi, 12
loop stloop.
mov (node struct ptr [ebx]).right, -1
```

- as each node is filled, right is copied to avail
- data Node struct
 - into byte dup(81)
 - next dword (?)
 - ends

dataNode struct 100 (<>)

	info	next
100	null terminated strings	700
200		800
300		
400		600
500		
600		100
700		200
800		-1

shl dword 400

mov ebx, start

stloop: cmp ebx, -1 je done

puts ebx

puts offset CRLF

mov ebx, (dataNode ptr [ebx]).info

jmp stloop

done:

- Shifts

SHL - shift left

SHR - shift right

destination, count

count can be immediate or use CL

SHL al, 1

CF=0 AL=1001010

result is CF=1 AL=01010100

OF bit means only if shifting 1 bit

in this case, OF was set, but shifting 2 doesn't matter

if AL=11001010, then 1 shift CF=1, OF=0

- SHR

x word 4C2Ah

shr x, 1

0100110000101010 → 1001100001010100

9844

sar - shift arithmetic right (same as shr)

rar - shift arithmetic right (not same as shr)

sar saves sign bit when moved, shr doesn't

- SHR doesn't affect OF