Hwk #2 Scope CS3723 Name: \_\_\_\_\_KEY\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section: \_\_\_

Please staple your pages together.

1.1. Symbol tables

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| main   |  |  |  | | --- | --- | --- | |  | BA | Offset/Address | | m | 0 | 0 | | i | 0 | 4 | | c | 0 | 8 | | k | 0 | 12 | | e | 0 | 16 | | y | 0 | 20 | | x | 0 | 24 | | subA | 0 | @subA | | subB | 0 | @subB | | subD | 0 | @subD | | subA   |  |  |  | | --- | --- | --- | |  | BA | Offset/Address | | m | 0 | 0 | | i | 1 | 4 | | c | 1 | 8 | | k | 1 | 12 | | e | 1 | 16 | | y | 0 | 4 | | x | 0 | 8 | | subB | 1 | @subB | |
| subB   |  |  |  | | --- | --- | --- | | m | 1 | 0 | | i | 0 | 0 | | c | 0 | 4 | | k | 1 | 12 | | e | 1 | 16 | | y | 1 | 20 | | x | 1 | 24 | | subC | 0 | @subC | | subC   |  |  |  | | --- | --- | --- | | m | 2 | 0 | | i | 1 | 0 | | c | 0 | 0 | | k | 0 | 4 | | e | 0 | 8 | | y | 2 | 20 | | x | 2 | 24 | | subB | 2 | @subB | | subD | 2 | @subD | |
| subD   |  |  |  | | --- | --- | --- | | m | 1 | 0 | | i | 1 | 4 | | c | 1 | 8 | | k | 1 | 12 | | e | 1 | 16 | | y | 0 | 0 | |  |

0.5 pts per incorrect value for a max of 5 pts

1.2 Trace showing runtime memory stack for **STATIC** scope (3 pts)

(there may or may not be more rows in this answer sheet than you need.)

|  |
| --- |
| Func: main Env Vector: α  m 100 120 160 180 220 280  i 101 161  c 102 162  k 103 113 123 183  e 104 164  y 105  x 4 9 14 |
| Func: subA Env Vector: β α  m 200  x 2  y 205 |
| Func: subB Env Vector: θ α  i 301 310  c 302 |
| Func: subC Env Vector: € θ α  c 402  k 403  e 404 |
| Func: subB Env Vector: ∑ α  i 301 315  c 302 |
| Func: subC Env Vector: π ∑ α  c 402  k 403  e 404 |
| Func: subD Env Vector: φ α  y 505 |
| Func: Env Vector: |
| Func: Env Vector: |

Above: 0.5 for each incorrect env vector, max of 3pts

1.3 Output for **STATIC** scope (10pts):

subD m=280 i=161 c=162 k=183 e=164 y=505

subC m=280 i=315 c=402 k=403 e=404 y=105

subB m=280 i=315 c=302 k=183 e=164 y=105

subC m=280 i=310 c=402 k=403 e=404 y=105

subB m=280 i=310 c=302 k=183 e=164 y=105

subA m=200 i=161 c=162 k=183 e=164 y=205

main m=280 i=161 c=162 k=183 e=164 y=105

Each incorrect value= -0.5, missing line=-3, extra line=-1 each, max of 10 pts

Out of order=-4 (only count that once)

It is easier to grade those output values by looking at each column.

2. 1 Trace showing runtime memory stack for **DYNAMIC** scope(10 pts)

(there may or may not be more rows in this answer sheet than you need.)

|  |
| --- |
| Func: main  m 100  i 101  c 102  k 103 113  e 104  y 105  x 4 |
| Func: subA  m 200 220 260 280 320 380  x 2 7 12  y 205 |
| Func: subB  i 301 308  c 302 |
| Func: subC  c 402  k 403 413  e 404 |
| Func: subB  i 301 313 373  c 302 |
| Func: subC  c 402 462  k 403 463  e 404 464 |
| Func: subD  y 505 |
| Func: |
| Func: |

2.2 Output for **DYNAMIC** scope (10pts):

subD m=380 i=373 c=462 k=463 e=464 y=505

subC m=380 i=373 c=462 k=463 e=464 y=205

subB m=380 i=373 c=302 k=413 e=404 y=205

subC m=380 i=308 c=402 k=413 e=404 y=205

subB m=380 i=308 c=302 k=113 e=104 y=205

subA m=380 i=101 c=102 k=113 e=104 y=205

main m=100 i=101 c=102 k=113 e=104 y=105

Each incorrect value= -0.5, missing line=-3, extra line=-1 each, max of 10 pts

Out of order=-4 (only count that once)

It is easier to grade those output values by looking at each column.