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CECS 424

2/15/2018

Assignment 4

1

Static Scoping

|  |  |
| --- | --- |
| Output: | Reason: |
| 1, 1 | Inner() will use the b declared in middle() and the a declared in main() |
| 3, 1 | Middle() will use the a and b variables declared within it |
| 1, 2 | Main() will use its a and b variables |

Dynamic Scoping

|  |  |
| --- | --- |
| Output: | Reason: |
| 3, 1 | Inner() will use the a and b variables inside the Middle() call in the stack |
| 3, 1 | Middle() will use its a and b variables |
| 1, 2 | Main() will use its and b variables |

Exercise 3.6

a.

C-style scoping

|  |  |
| --- | --- |
| Output: | Reason: |
| 9 | R(1) will print x which at this point is 3 \* 3 = 9; x was declared before R() |
| 4 | R(2) will print x after having divided it by 2 in a previous call |
| 2 | R(3) will print x after having divided it by 2 in a previous call, again |
| 1 | R(4) will print x after having divided it by 2, for the last time |
| 4 | Main() will print g after it being set to 4 in A(4); g was declared before A() |

C#-style scoping

|  |  |
| --- | --- |
| Output: | Reason: |
| 9 | R(1) will print x which at this point is 3 \* 3 = 9; x was declared before R() |
| 4 | R(2) will print x after having divided it by 2 in a previous call |
| 2 | R(3) will print x after having divided it by 2 in a previous call, again |
| 1 | R(4) will print x after having divided it by 2, for the last time |
| 4 | Main() will print g after it being set to 4 in A(4); g was declared before A() |

Modula-3

|  |  |
| --- | --- |
| Output: | Reason: |
| 9 | R(1) will print x which at this point is 3 \* 3 = 9 |
| 4 | R(2) will print x after having divided it by 2 in a previous call |
| 2 | R(3) will print x after having divided it by 2 in a previous call, again |
| 1 | R(4) will print x after having divided it by 2, for the last time |
| 4 | Main() will print g after it being set to 4 in A(4) |

b.

Exercise 3.9

a.

9 X 4 = 36 bytes

Exercise 3.14