

CSCI 305 Participation Event 4

Due Date: March 19, 2018 @ End of Class

Group Members: _____

Exercise 1

Consider a block-structured language implemented using nesting links. Suppose a function nested n levels deep makes a legitimate reference to a local variable of a function nested m levels deep. Describe exactly how to find the variable at runtime. *Hint:* You do not have to worry about the cases where $m > n$; be sure you explain why not.

Exercise 2

Write the shortest ML function you can that would not work correctly if implemented using statically allocated activation records. Explain why it would fail.

Exercise 3

For each of the following ML functions, could the activation record for the function be deallocated as soon as the function returns? Explain why or why not.

- `fun f x = x + 1;`

- `fun f x = map ~ x`