

CSCE 330 Fall 2009

PROGRAM 1

Assigned Wednesday, 2009-10-26. Due Wednesday 2009-11-4

1. Load Euclid's algorithm (Figures 2.12 and 2.13 in the handout on Simplesem [GJ98]) in Simplesem and run it. Single step to understand how it works.
2. Explain carefully which Simplesem instructions translate the while loop in Euclid's algorithm.
3. Write a proof of correctness of Euclid's algorithm. You may use the version in which integer division is done directly, instead of by repeated subtraction, if you find that more convenient.
4. Load the factorial program of Figures 2.17 and 2.19. It can be found at `/usr/local/etc/csce330/progs` on the departmental Linux workstations. Single step it to understand how it works.
5. Turn in a printed document containing a screen dump of Simplesem running Euclid's algorithm, and a screen dump of Simplesem running the factorial program, an explanation of how the while loop in Euclid algorithm is translated, and the proof of correctness for Euclid algorithm. (You may write the last two items by hand.)