

Homework #5

Due: Nov 24, 2011 (before class)

1. Convert the following program to SSA form:

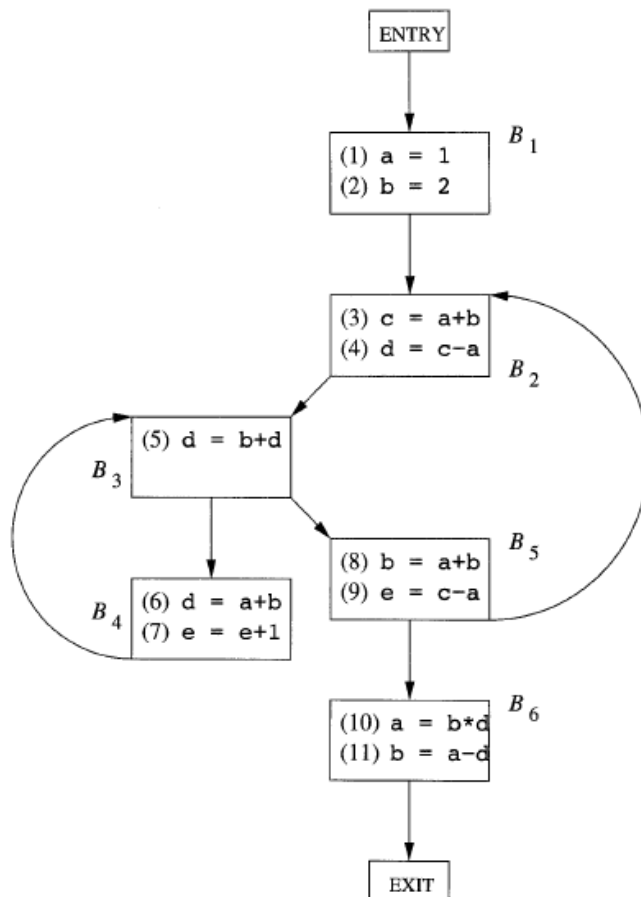


Figure 9.10: Flow graph for Exercise 9.1.1

Show your work after each stage:

- a. Add a start node containing initializations of all variables.
- b. Draw the dominator tree.
- c. Calculate dominance frontiers for each node.
- d. Insert ϕ -functions.
- e. (Renaming) Add subscripts to variables.
- f. Perform constant propagation and dead code elimination optimizations on the SSA form.