Homework #3

Due: Nov 3, 2011 (before class)

Exercise 9.5.1: For the flow graph in Fig. 9.37:

a) Compute *anticipated* for the beginning and end of each block.

b) Compute *available* for the beginning and end of each block.

c) Compute *earliest* for each block.

d) Compute *postponable* for the beginning and end of each block.

e) Compute *used* for the beginning and end of each block.

f) Compute *latest* for each block.

g) Introduce temporary variable t; show where it is computed and where it is used.

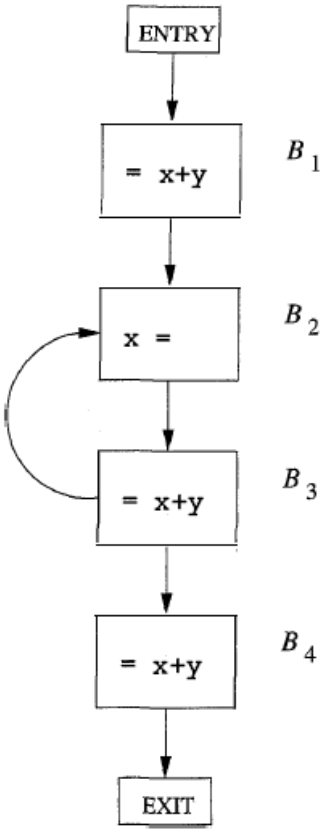

Figure 9.37: Flow graph for Exercise 9.5.1

Exercise 9.5.2: Repeat Exercise 9.5.1 for the flow graph of Fig. 9.10 (see the exercises to Section 9.1). You may limit your analysis to the expressions $a + b$, $c - a$, and $b * d$.

Hint: Split B2 into two blocks
(B2a:c = a+b, B2b: d = c-a; Add an edge B2a -> B2b)

a) Compute *anticipated* for the beginning and end of each block.

b) Compute *available* for the beginning and end of each block.

c) Compute *earliest* for each block.

d) Compute *postponable* for the beginning and end of each block.

e) Compute *used* for the beginning and end of each block.

f) Compute *latest* for each block.

g) Introduce temporary variable t; show where it is computed and where it is used.

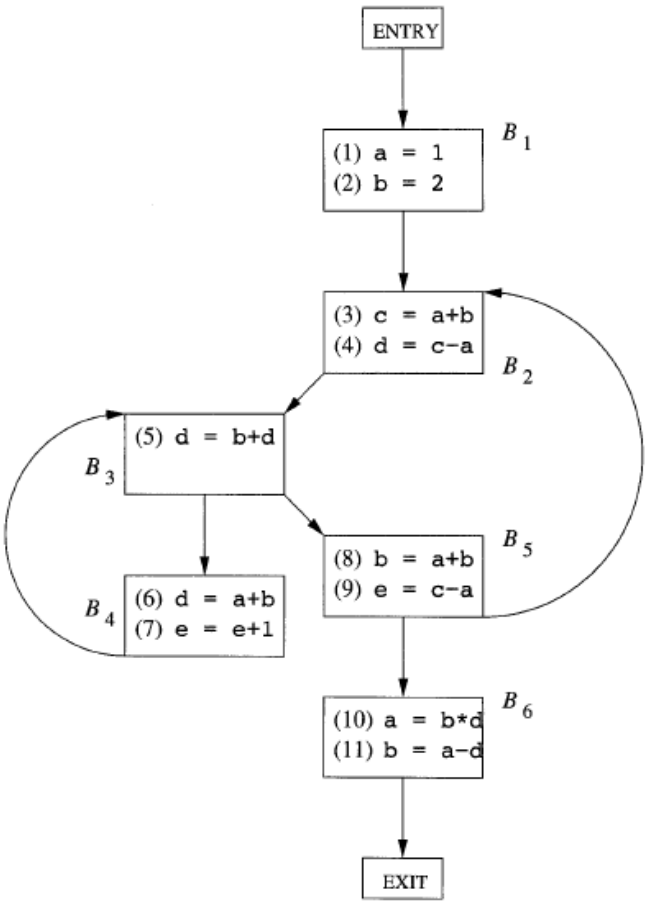

Figure 9.10: Flow graph for Exercise 9.1.1