

CS200 lab 12, dependence graphs and topological sort

name:

id:

1. Study the P5 assignment description. Given the following equations:

a = true

b = false

c = a or b and not b

d = true and b

e = true

f = false or e

g = f and not f

h = a or b or c or g

In the dependence graph we represent an equation by its left hand side identifier.

a. Draw the dependence graph for the above equations, as a graph with nodes and edges, describing which identifiers are needed in the evaluation of which identifiers.

b. Now draw the dependence graph as an array-list of adjacency lists, where an adjacency list has a source, an inDegree, and an array list of destinations.

c. Perform a topological sort of the dependence graph on paper, showing the stages of the algorithm. Write on following lines **all identifiers** that can be evaluated first, next, etc.