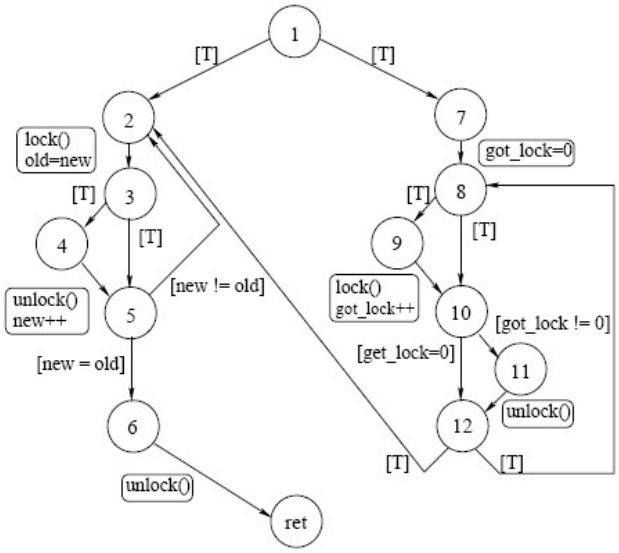
17-355/17-655/17-819: Program Analysis
Lecture 22, CEGAR with Blast
In-Class Exercises
April 9, 2019 **Andrew ID: _____**

1. Consider the graph below, and the program path 1-7-8-10-11-12, ending in an error where we unlock without ever having locked. Answer the following:
   a) Run weakest preconditions along this path, as shown in class. Identify the parts of the formula that show the path is infeasible.



   b) Find a Craig interpolant I witnessing the infeasibility of the path. Recall that the part of the formula from before a program point p must imply I; that I only contains the current version of variables, and variables that are mentioned in both parts of the formula; and that the conjunction of I and the part of the formula from after p must be false.

   c) Analyze the program tracking this formula, and show how the analysis can tell that path is no longer feasible.