

CPSC 322: Introduction to Artificial Intelligence (Section 2)

Solving Constraint Satisfaction Problems (CSPs) using Search

Do this exercise in pairs. If there's an odd number, do it in a group of 3.

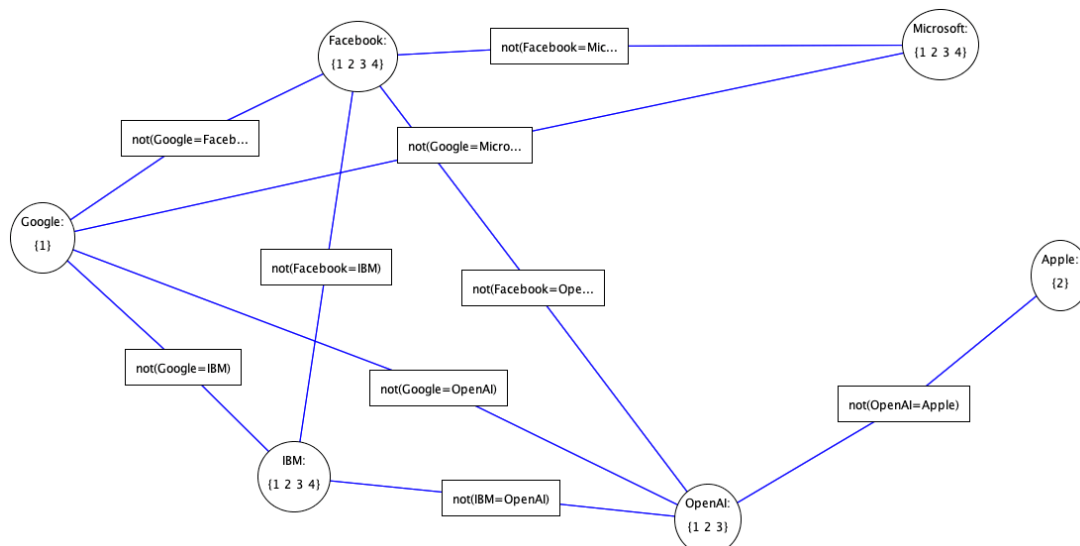
Submit the sheet before leaving.

Name of Student (last, first)	Student Number

Suppose UBC organizes an AI and Machine Learning conference where people from industry who work in AI and related fields are invited to give talks. Some talks can happen in parallel but some can't, based on the constraints given below. A list of companies, the times they can make, and the constraints are given below. Assume that each talk is an hour long talk and the available start times are 1pm, 2pm, 3pm, 4pm.

Companies	Times they can make	Constraints
Google (G)	{1}	$G \neq F, G \neq I, G \neq M, G \neq O$ $F \neq I, F \neq M, F \neq O$ $I \neq O$ $O \neq A$
Facebook (F)	{1, 2, 3, 4}	
IBM (I)	{1, 2, 3, 4}	
Microsoft (M)	{1, 2, 3, 4}	
OpenAI (O)	{1,2,3}	
Apple (A)	{2}	

Question 1: Draw a constraint network for this problem.



Question 2: Show the first 5 to 6 iterations of DFS with backtracking. (At least assign values to 4 to 6 variables.) The only check is to make sure that each new assignment violates no constraint with any previous assignment. As a tiebreaker, assign a speaker to the earliest available time. You can either follow the order of companies given in the table above or any other order.

