For which of the following will you always find the same solution, even if *1/1
you re-run the algorithm multiple times?

Assume a problem where the goal is to minimize a cost function, and every state in the state space has a different cost.

○ Steepest-ascent hill-climbing, each time starting from a different starting state

◉ Steepest-ascent hill-climbing, each time starting from the same starting state

○ Stochastic hill-climbing, each time starting from a different starting state

○ Stochastic hill-climbing, each time starting from the same starting state

○ Both steepest-ascent and stochastic hill climbing, so long as you always start from the same starting state

○ Both steepest-ascent and stochastic hill climbing, each time starting from a different starting state

○ No version of hill-climbing will guarantee the same solution every time

The following two questions will both ask you about the optimization problem described below.

A farmer is trying to plant two crops, Crop 1 and Crop 2, and wants to maximize his profits. The farmer will make $500 in profit from each acre of Crop 1 planted, and will make $400 in profit from each acre of Crop 2 planted.

However, the farmer needs to do all of his planting today, during the 12 hours between 7am and 7pm. Planting an acre of Crop 1 takes 3 hours, and planting an acre of Crop 2 takes 2 hours.

The farmer is also limited in terms of supplies: he has enough supplies to plant 10 acres of Crop 1 and enough supplies to plant 4 acres of Crop 2.

Assume the variable C1 represents the number of acres of Crop 1 to plant, and the variable C2 represents the number of acres of Crop 2 to plant.

What would be a valid objective function for this problem? * 1/1

○ -3 * C1 - 2 * C2

◉ 500 * C1 + 400 * C2

○ C1 + C2

○ 10 * C1 + 4 * C2

○

○ 500 * 10 * C1 + 400 * 4 * C2

What are the constraints for this problem? * 1/1

◉ 3 * C1 + 2 * C2 <= 12, C1 <= 10, C2 <= 4

○ 3 * C1 + 2 * C2 <= 12, C1 + C2 <= 14

○ 3 * C1 <= 10, 2 * C2 <= 4

○ C1 + C2 <= 12, C1 + C2 <= 14

The following question will ask you about the below exam scheduling constraint satisfaction graph, where each node represents a course. Each course is associated with an initial domain of possible exam days (most courses could be on Monday, Tuesday, or Wednesday; a few are already restricted to just a single day). An edge between two nodes means that those two classes must have exams on different days.
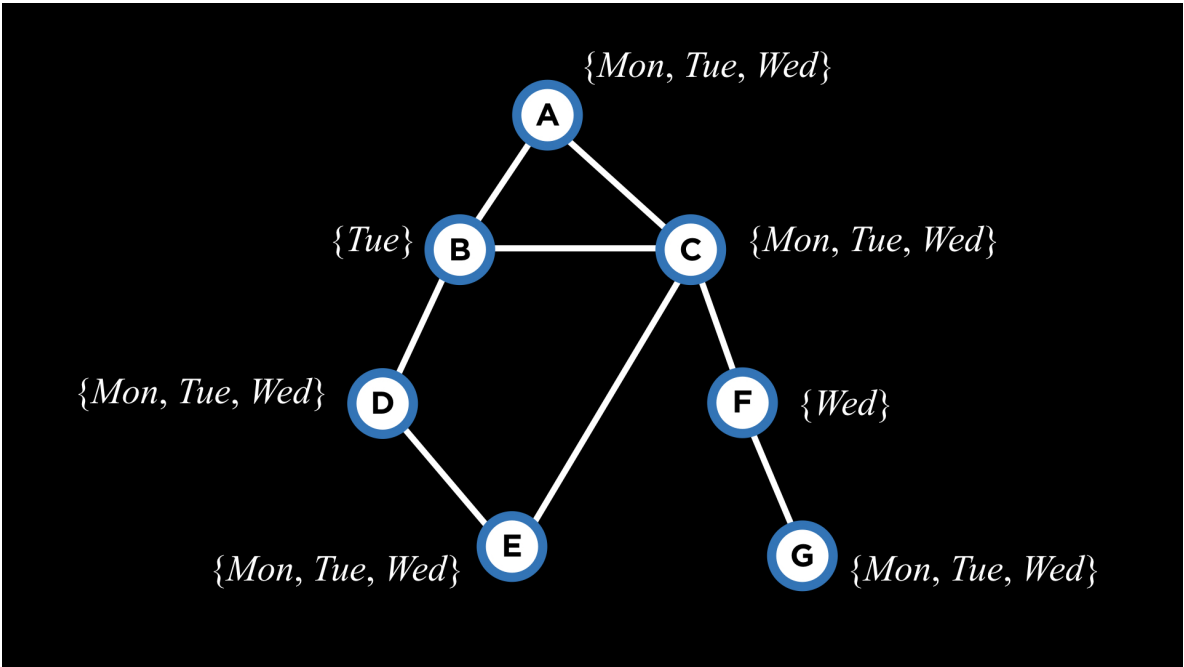
After enforcing arc consistency on this entire problem, what are the *1/1
resulting domains for the variables C, D, and E?

○ C's domain is {Mon, Tue}, D's domain is {Wed}, E's domain is {Mon}

◉ C's domain is {Mon}, D's domain is {Mon, Wed}, E's domain is {Tue, Wed}

○ C's domain is {Mon}, D's domain is {Tue}, E's domain is {Wed}

○ C's domain is {Mon}, D's domain is {Mon, Wed}, E's domain is {Mon, Tue, Wed}

○ C's domain is {Mon, Tue, Wed}, D's domain is {Mon, Wed}, E's domain is {Mon, Tue, Wed}

○ C's domain is {Mon}, D's domain is {Wed}, E's domain is {Tue}

Comments, if any

此表单是在 CS50 内部创建的。

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