

ICS 275, Assignment 1

Read chapters 1 and 2 in book and answer the following questions:

1. Question 1 in chapter 1.
2. Question 4, chapter 2.
3. Question 5 chapter 2.
4. question 6 chapter 2, but do only one choice for this question.
5. question 9 chapter 2.
6. question 10 chapter 2.
7. Ten cells numbered 0,...,9 inscribe a 10-digit numbers such that each cell, say i , indicates the total number of occurrences of the digit i in this number. Find this number.
For your information the answer is: 6210001000. Formulate this problem as a CSP.
8. (Question 11 chapter 2) Find the minimal network of the crossword puzzle (Figure 1.1) when the problem is modeled as a binary set of constraints.
9. Consider the following relation ρ on variables x, y, z, t .

$$\rho(x, y, z, t) = \{(a, a, a, a)(a, b, b, b)(b, b, a, c)\}$$

- (a) Find the projection network $P(\rho)$. Is ρ representable by a network of binary constraints? Justify your answer.