

Homework 3**Due:** Thursday March 18, 2010**1 Planning (10 points)**

Do problem 10.3 (11.4 in the second edition). For part (b) you may use either STRIPS or PDDL.

2 Planning II (10 points)

Do problem 10.4 (11.13 in the second edition). Again, you may use either STRIPS or PDDL.

3 Probability Warm Up (10 points)

Do problem 13.7 (13.5 in the second edition).

4 Probability (10 points)

Do problem 13.15 (13.7 in the second edition).

5 Working with probabilities (20 points)

Write a general program that will read in a joint probability distribution over n binary random variables (numbered $0 \dots n - 1$) from a text file with 2^n numbers, and then determine which *pairs* of variables are independent.

Store your probabilities in an array and use the bit pattern of the index into the array to indicate which variables are true or false. For example, if $n = 3$, index 0 in your array should store the probability that variables 0, 1 and 2 are all false, while index 4 in your array should store the probability that variable 2 is true, and variables 1 and 0 are false.

Demonstrate your program working on an example with $n = 5$.

What is the computational complexity of your program?