Assignment 2: Dynamic Programming project

Francis Vo, Soo-Hyun Yoo

October 30, 2012

1 Problem 1: mmmm ... pork

1.1 Mathematical

1.2 Standard

1.3 Matrix

$\text{Max}(f' * x)$

$$f' = \begin{pmatrix} 8 & 14 & 11 & 4 & 12 & 7 & 4 & 13 & 9 \end{pmatrix}$$

$$a = \begin{pmatrix} 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 1 & 0 & 0 & 1 & 0 & 0 & 1 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 & 0 & 0 & 1 \end{pmatrix}$$

$$b = \begin{pmatrix} 480 \\ 400 \\ 230 \\ 420 \\ 250 \end{pmatrix}$$

$$x = \begin{pmatrix} ham\_f \\ ham\_r \\ ham\_o \\ bellies\_f \\ bellies\_r \\ bellies\_o \\ picnics\_f \\ picnics\_r \\ picnics\_o \end{pmatrix}$$

1.4 Solution

Total net profit: $10,910

	fresh	smoked on regular time	smoked on overtime
hams	440	0	40
bellies	0	400	0
picnics	0	20	210

1.5 GNU Linear Programming Kit

We used a glpsol inputing a model file, pork.mod, and then it outputs a solution file, pork.sol. The command we used is "glpsol -m pork.mod -o pork.sol"

1.6 code

[TODO: include pork.mod]