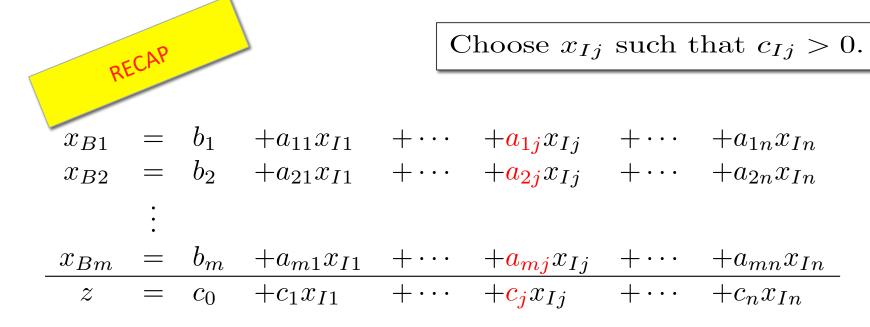
ENTERING/LEAVING VARIABLE CHOICE HEURISTICS

Entering Variable Choice



Selecting the Leaving Variable

Entering Variable Choice

- Often, we can have more than one choice for entering variable.
 - For each entering variable, more than one choice of leaving.

Question: If multiple choices, then how to choose?

Heuristic #1: Largest Objective Coefficient

Idea: Larger the value of c_j , the more increase in z per unit increase in x_{lj} .

Heuristic #2: Greedy Choice

Explore all possible choices.

 Choose the entering/leaving combination that yield the most increase in z.

Bland's Rule

Associate unique index with each problem/slack variable.

$$x_j$$
 has index j .

Amongst all possible entering variables, choose least possible index.

Amongst all possible leaving choices, choose least index choice.

Example: Bland's Rule

$$x_3 = 1 + 3x_1 - 25x_2$$
 $x_4 = 11 + 0x_1 - x_2$
 $x_5 = 3 - x_1 + x_2$
 $x_6 = 3 - x_1 + 0x_2$
 $z = 0 + x_1 + 25x_2$