Lasst time: gave ILP for Verlex Cover Set cover

VC: given a graph G=(V,E), find the smallest subset of V to cover all edges.

VC-ILP:



unile an edge is uncovered: select an uncovered edge and add both of its indpoints to cover



Goal: ALG E & OPT





 Example:
 Objective: $\min x_1 + x_2 + x_3 + x_4$

 Subject to: $x_1 + x_2 \ge 1$ $u = \{1, 4, 7, 8, 10\}$
 $x_1 + x_2 + x_3 \ge 1$ $u = \{1, 4, 7, 8, 10\}$
 $x_4 + x_3 + x_4 \ge 1$ $x_4 \ge 1$
 $x_1, x_2, x_3, x_4 \in \{0, 1\}$ $S = \begin{cases} \{1, 7, 8\}, \{1, 4, 7\}, \\ \{7, 8\}, \{4, 8, 10\} \end{cases}$

unat is its relaxation?

add xi to set cover if xiz 1/2

Is the relaxation a set cover? (for all inputs?)