VG441 Problem Set 3

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Problem 1

1. Formulate the set cover problem as a MILP

Decision Variables:
Our choices of sets: $x_i \in \{0, 1\}, \quad i \in \{1, 2, ..., m\}$.
elements and sets: $s_{mn} \in \{0, 1\}$, if set m has element n of V, then $s_{mn} = 1$, otherwise $s_{mn} = 0$
Objective:
Minimize $\sum_m^1 x_i$
Constraints:
$(S \cdot X)_n \geq 1$ for $\forall n$
$\sum_1^m x_i \geq 1$