

Implement simplex algorithm with the following assumptions

1. Polytope is bounded
2. Non-degenerate
3. Rank of matrix is equal to the number of columns

Input: 1. Matrix 'A' of  $m$  rows and  $n$  columns 2. Constraint vector 'b' of length  $m$  3. cost vector 'c' of length  $n$  4. Initial feasible point

Requirements: Find a vector 'x' of length  $n$  such that  $Ax \leq b$  and  $c \cdot x$  is maximized

Output: vector  $x$  and  $c \cdot x$