

Combinatorial Optimisation

- 1) Linear Programming Modeling
- 2) Geometric Solution
- 3) Simplex Method
- 4) Two-Phase Method
- 5) Big-M Method
- 6) Farkas' Lemma via the Simplex Method
- 7) The Karush-Kuhn-Tucker Optimality Conditions
- 8) Formulation of the Dual Problem
- 9) Primal-Dual Relationships
- 10) The Dual Simplex Method
- 11) Sensitivity Analysis
- 12) The Minimal Cost Network Flow Problem
- 13) The Network Simplex Method for Network Flow Problems
- 14) Finding an Initial Basic Feasible Solution for Minimal Cost Network Flow Problem
- 15) Transportation Problem and the methods to find the initial basic feasible solution
- 16) The UV-method to find the optimal solution
- 17) The Assignment Problem, and Hungarian Algorithm
- 18) The Shortest Path Problem
- 19) Shortest Path Algorithms for Networks Having Arbitrary Costs
- 20) Modeling Shortest Path problem as a Minimal Cost Network Flow Problem
- 21) Optimal Extreme Point solution to the linear programming network flow problem by ignoring the integrality restrictions based on Total Unimodularity of coefficient matrix