Title: Transportation Problem

Sure, let's consider a hypothetical company called "ABC Manufacturing" that is facing a transportation problem.

Problem Statement:

ABC Manufacturing is a company that produces and supplies goods to different retail stores across the country. The company has three manufacturing plants located in different cities, and they need to transport their goods from these plants to different retail stores. The objective is to minimize the transportation cost while meeting the demand of the stores.

Inputs:

- Monthly plant capacities: Plant 1 (80 units), Plant 2 (50 units), and Plant 3 (90 units).

- Monthly requirements of distributors: Distributor A (40 units), Distributor B (40 units), Distributor C (50 units), Distributor D (40 units), and Distributor E (80 units).

- Units transportation costs from Plants to Distributors:

  - From Plant 1 to Distributors: A (5 Rs), B (8 Rs), C (6 Rs), D (6 Rs), and E (3 Rs).

  - From Plant 2 to Distributors: A (4 Rs), B (7 Rs), C (7 Rs), D (6 Rs), and E (6 Rs).

  - From Plant 3 to Distributors: A (8 Rs), B (4 Rs), C (6 Rs), D (6 Rs), and E (3 Rs).

Output:

- Optimal distribution plan to minimize the total transportation cost.

Constraints:

- The total units transported from each plant should not exceed its monthly capacity.

- The total units transported to each distributor should meet its monthly requirement.

Assumptions:

- Transportation cost is only dependent on the distance between the plants and the distributors.

- Transportation time and other factors are not considered in the problem formulation.

- The demand for the products does not vary over the month.

- The cost of production and other costs associated with the production process are not considered in the problem formulation.