What is transportation problem

The transportation problem is a special type of linear programming problem where the objective is to minimise the cost of distributing a product from a number of sources or origins to a number of destinations. Because of its special structure the usual simplex method is not suitable for solving transportation problems. These problems require a special method of solution. The origin of a transportation problem is the location from which shipments are despatched. The destination of a transportation problem is the location to which shipments are transported. The unit transportation cost is the cost of transporting one unit of the consignment from an origin to a destination.

Distinguish between Assignment and transportation

An assignment problem can be viewed as a special case of a transportation problem. In a transportation model, sources and destinations are present; in an assignment model, there are facilities, and jobs which have to be assigned to those facilities. Unlike a transportation model, in an assignment model, number of facilities (sources) is equal to number of jobs (destinations).

However, the transportation algorithm is not useful while dealing with assignment problems. In an assignment problem, when an assignment is made, the row as well as column requirements are satisfied simultaneously, resulting in degeneracy. This occurs since only one assignment is allowed per row and column. Thus, the assignment model is a completely degenerate form of the transportation model.
TRANSPORTATION PROBLEM:

This is about reducing cost or improving profit involving in transportation merchandize.
number of sources and number of demand need not be equal
matrix need not to be a square matrix.
ASSIGNMENT PROBLEM:

This is about assigning finite sources to finite destinations in a way where only one destination is alloted for one source with minimum cost.
number of sources and number of destination must be equal
matrix must be square matrix.

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