

Unbalanced Assignment Problem

In the previous section, the number of persons and the number of jobs were assumed to be the same. In this section, we remove this assumption and consider a situation where the number of persons is not equal to the number of jobs. In all such cases, fictitious rows and/or columns are added in the matrix to make it a square matrix.

Then, we apply the usual Hungarian algorithm to this resulting balanced assignment problem. We provide the following example to illustrate the solution of an unbalanced assignment problem.

SOLVING UNBALANCED ASSIGNMENT
PROBLEM FOR USING REVERSED ONE'S
ASSIGNMENT METHOD

ABSTRACT

The assignment problem is a special case of the transportation problem in which the

objective is to assign the number of resources and the number of activities are equal at a minimum cost or maximum profit (i.e., balanced assignment problem). If an assignment problem has not equal number of resources and activities, then it is called an unbalanced assignment problem. As we can solve only a balanced assignment problem, so we have to convert it into a balanced assignment problem by introducing dummy resource or activity with costs one.

KEYWORDS

Assignment problem, Hungarian Assignment Method (HAM-method), Revised Ones Assignment Method (ROA-method), Balanced assignment problem, Unbalanced assignment problem, Minimization, Maximization, Optimization.