Aim :-Solution of 1-1Assignment Problem

Description of Algorithm :-This problem can be solved using ford Fulkerson algorithm efficiently.

We can construct a graph one source node one destination node and nodes representing each user and nodes each representing each interval .

There are unidirectional edges from source to each user having weight 1 .

There are unidirectional edges from each user node to all its favourable interval nodes each having weight 1 representing that each user can be assigned atmost 1 interval.

There are unidirectional edges from each node representing interval to destination node .

We can use ford Fulkerson algorithm to find on solution for optimal assignment .

Ford Fulkerson algorithm:-

First Graph is Constructed from given input.

Try to find a path from the source node to destination node having non zero flow (minimum flow in the path).

If such a path exists then from all the forward edges substract the flow and to each reverse edges add the flow .This process is called Augmenting the Residual Graph.

All the edges having weight 1 in the final Graph represent one Assignment.

This gives one optimal solution. We can get other solution from changing the configuration of Graph.

Tracing the Algorithm:-

Example:-

U1-I1,I2

U2-I1