# Optimum Track Path

The ShipX® Crude Portal enables electronic collaboration among all parties in the crude gathering supply chain space. Excel worksheets and phone based communication are replaced by a state-of-the-art collaboration platform that integrates lease operators, gauges, truckers, pipeline schedulers and others in the crude gathering workflow.

There are multiple routes and different size of trucks which can carry oil in different volumes. Following graph shows a network of nodes (node names are denoted by A, B, C, D, E, F, G, H and O), length and maximum volume of each edge.
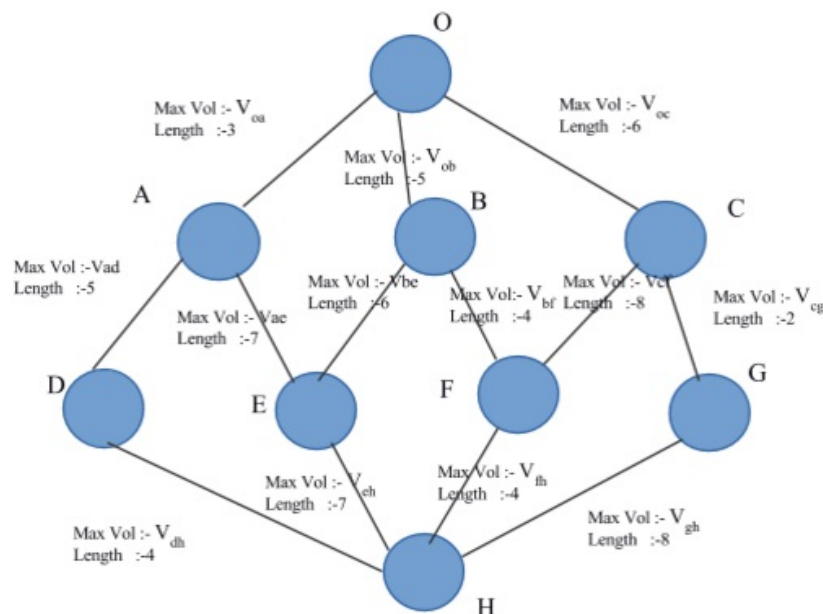
When finding the possible path for trach truck, following rules and regulations need to be satisfied. Here are some constraints which must be satisfied.

1. Volume of a truck : V_n
2. Speed of a truck : S_n(Km/h)
3. Length of edge : L_{ij} (from i node to j) in km
4. Max Volume of edge: V_{ij} (from i node to j) in tons

5.Time of each truck to reach destination : Tn

Your task is to find the path for each truck **which is the quickest to reach its destination satisfying the constraints.** Origin node and destination node are always 'O' and 'H' respectively
Sort the trucks in ascending order of the completion time of the trip.

Input Format

The first line of the input will contain the number of trucks (N). Then details of trucks and edges will be given in the following order.

Each line will have N space separated entries specifying the particular parameter for a truck. After that, edge details are defined: edge name, volume and finally length; length is a constant value. This is summarized below.

Line number	Parameter (space separated)
1	Number of Trucks (N)
2	Trucks' names (N entries)
3	Volumes (This is the current volume of each truck, N entries)
4	Speed of each truck (Km/h) (This the uniform velocity, N entries)
5	Edge Name
6	Volume of edge (This is the Max volume of above edge)
7	Length of edge (This is constant always)

Constraints

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Output Format

Output: - List of trucks. Give the truck name along with node names (separated by comma, enclosed in square brackets) and finally the total time (completion time) to reach its destination (node names and time should be inside curly brackets)

Note:
There might be no satisfying path for a truck. Then that truck does not need to be added to the output.
If all trucks do not satisfy the constraints, then the output is 'No Trucks'.
Completion time in minutes rounded to two decimal points.
When there are multiple quickest paths, they should be given as follows
Eg : R1{[O,B,E,H],[O,C,F,H],18mins}

Sample Input

3
R1 R2 R3
300 400 350
60 80 75
OA OB OC AD AE BE BF CF CG DH EH FH GH
400 1800 400 500 200 300 250 350 180 200 300 350 400
3 5 6 5 7 6 4 8 2 4 7 4 8

Sample Output

R3{[O,C,F,H],14.4mins} R1{[O,B,E,H],[O,C,F,H],18mins}

Explanation

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