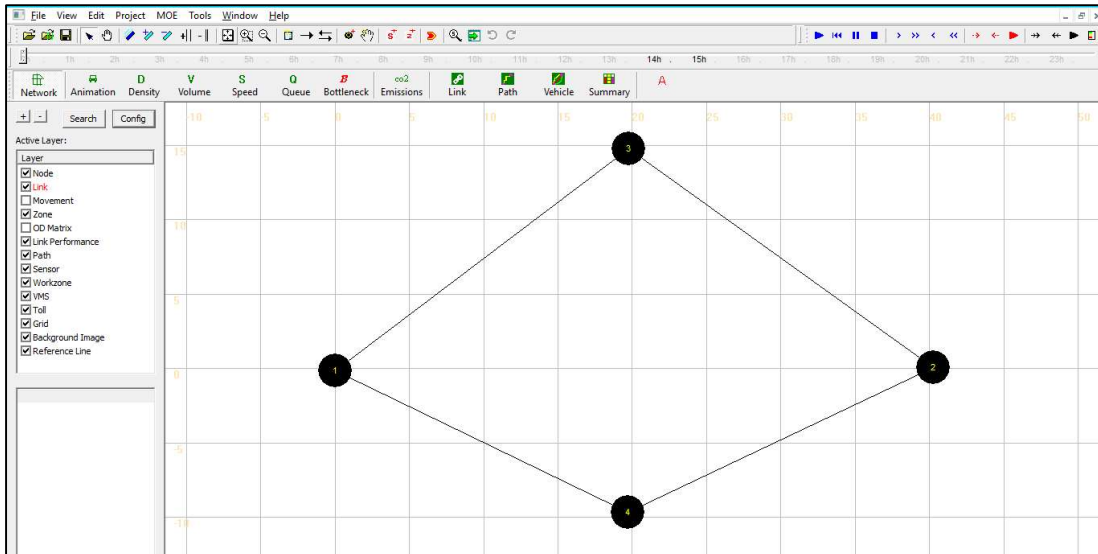


## TRAFFIC SIMULATION AND MODELLING ASSIGNMENT-6

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### Task 1: Building the network



### Task 2: Run the simulation considering number of iterations as 20

Review Simulation/Assignment Settings

Network Data Summary:	Demand Data Summary:	Traffic Management Scenario Summary:
4 nodes 4 links 2 zones 2 activity locations 12 link types	Demand Loading Time Period: 14:00->15:00 (02:00 PM->03:00 PM) Demand files: input_demand.csv	
Link Traffic Flow Model: 1. Point Queue Model 2. Newell's Kinematic Wave Model	Signal Representation Model: 0. No Signal Control Simulation 1. link based signal 2. phase based signal	# of Iterations/Days: 20
Run Simulation		Exit

### Task 3: Display Total link volume

Display Configuration

Node Text Label:

None

Node ID

Sequential Node No.

Zone ID of Activity Location

Node Name

Link Text Label:

Link Capacity Per Hour

Lane Capacity Per Hour

Total Link Volume

Level Of Service

Avg Simulated Speed

Avg Travel Time (min)

Avg Delay Per Vehicle (min)

Link ID

Speed Sensor ID

Count Sensor ID

Demand Type Code

From ID -> To ID

Free Flow Travel Time (min)

Free Flow Travel Time (hour)

--Map Matching Orientation Code

--Map Matching Loop Code

Movement Text Label:

None

Turn Type

Turn Direction

# of Lanes

Simulated Hourly Count

Simulated Turning %

Simulated Turn Delay (sec)

Size of Node Text:

+

-

Size of Link Text:

+

-

☒ Signalized Node Only

Size of Movement Display Box:

+

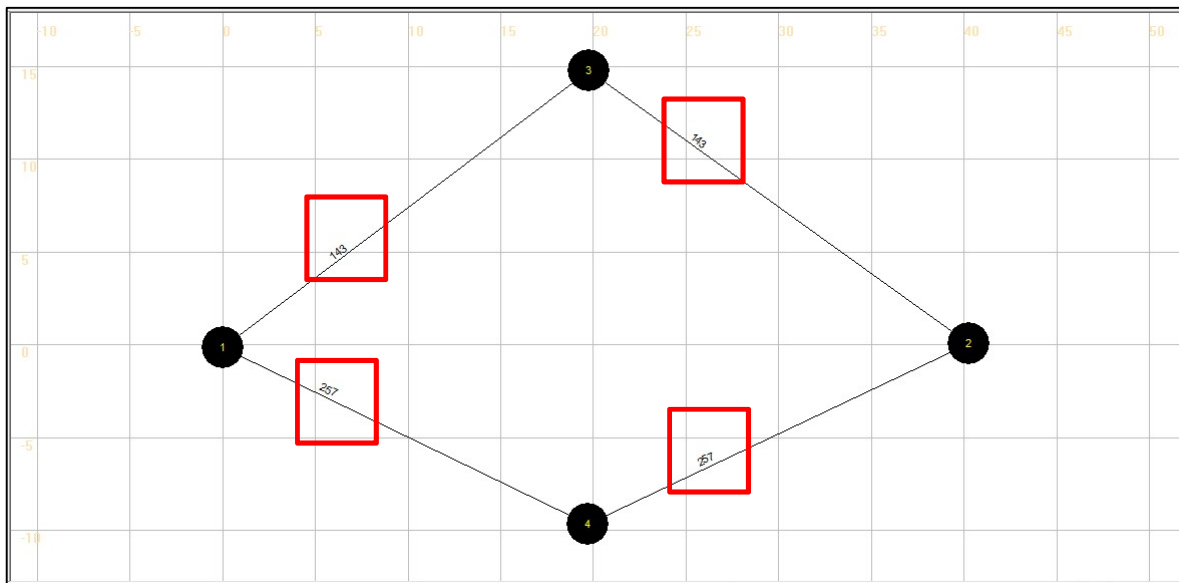
-

Size of Movement Text:

+

-

OK



**Task 4:** Prepare statistics for the base case scenario.

Origin zone-1, Destination zone-2

Find/Filter Vehicles

1: OD Pair Filter:

Origin Zone: 1  
Destination Zone: 2  
Demand Type: All  
Vehicle Type: All  
Info Class: All  
VMS Responsive Only: ☐  
Departure Time (min): 0 (0:00)  
Time Interval: 1440  
At least: 2 vehicles  
Travel Distance >= 0 distance  
Speed <= 300 distance  
Passing Impact Links: N/A  
Find Critical OD Pairs  
Value of Time Range  
Lower bound: 0  
Upper bound: 100

2: OD List:

Origin Zone	Destination...	Braess Net...	Avg Travel ...	Avg Distance	Avg Speed	TT STD	Travel Time...
1	2	400	76.7	46.0	36.0	12.8	0.3

1 OD pair(s) selected.

3: Path List:

Path No	Count	Percentage	Travel Time...	Distance
1	257	64.3	78.5	46.0
2	143	35.8	73.4	46.0

4: Vehicle List:

Vehicle ID, type, departure time, travel time, toll paid

No. 0, SOV, @840.1 min, 46.1 min, \$0.00  
No. 1, SOV, @840.3 min, 46.5 min, \$0.00  
No. 2, SOV, @840.4 min, 47.0 min, \$0.00  
No. 3, SOV, @840.6 min, 47.4 min, \$0.00  
No. 4, SOV, @840.7 min, 47.9 min, \$0.00  
No. 5, SOV, @840.9 min, 48.3 min, \$0.00  
No. 6, SOV, @841.0 min, 48.8 min, \$0.00  
No. 8, SOV, @841.3 min, 49.1 min, \$0.00

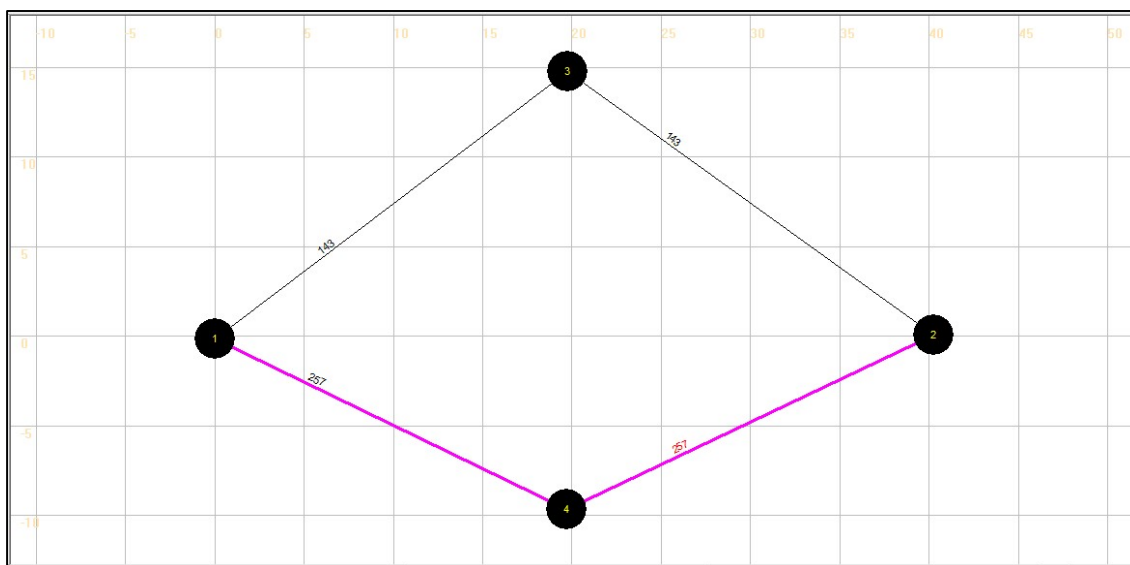
Export

Export

Vehicle Data Analysis for Listed OD Pairs

Exit

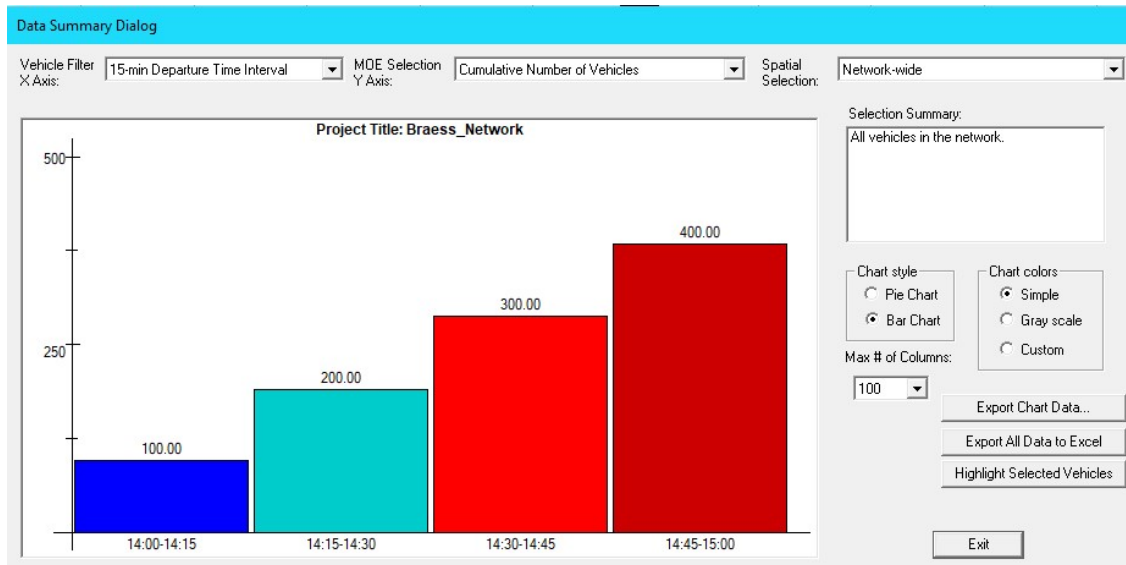
In the above find/filter vehicle dialog box **Path-1** (1-4-2) is selected. Below figure shows path-1 is highlighted



### Task 5: Overall network performance – summary

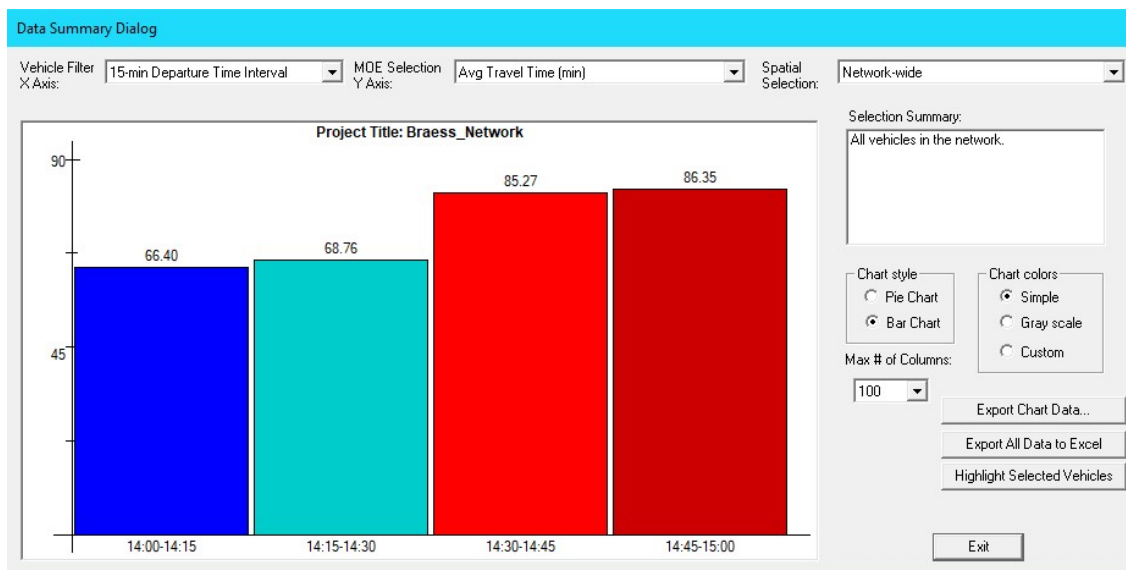
X-axis – 15 min departure time interval

Y-axis – Cumulative number of vehicles

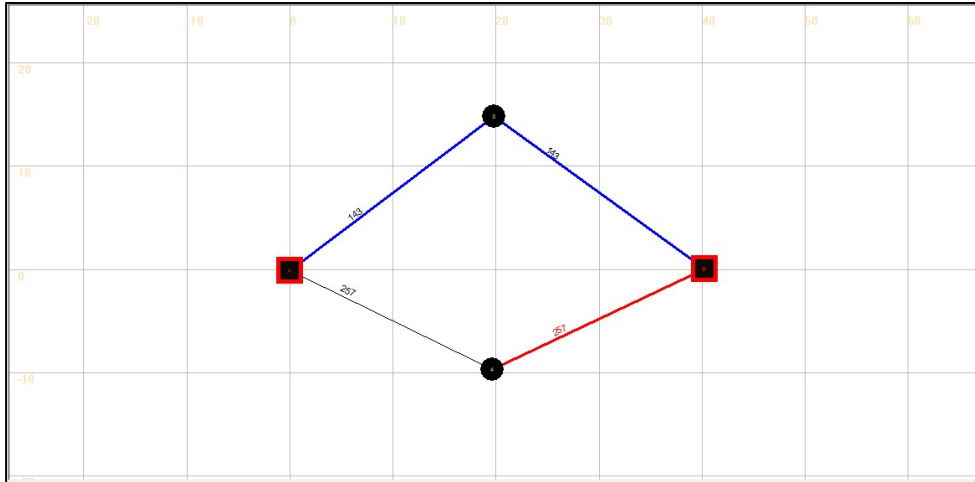


X-axis – 15 min departure time interval

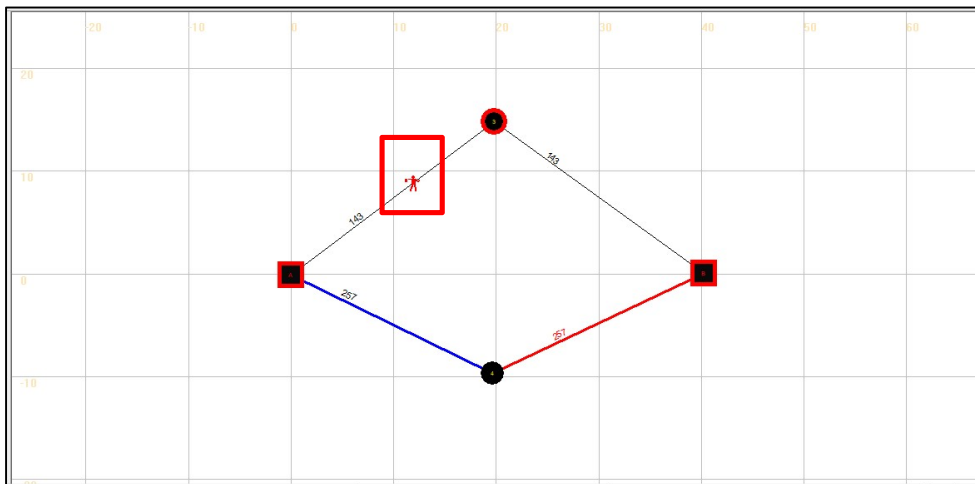
Y-axis – Average travel time



### Task 6: Find the shortest path

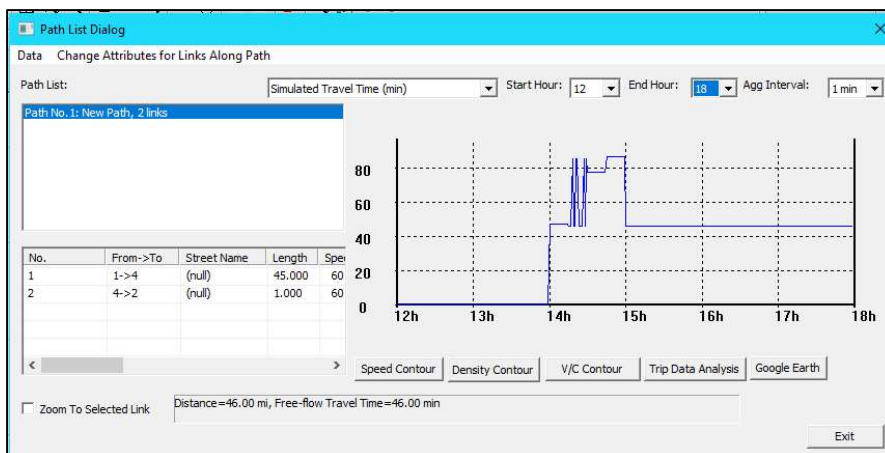


The links highlighted in blue shows the shortest path from node-1 to node-2. The shortest path is 1-3-2.

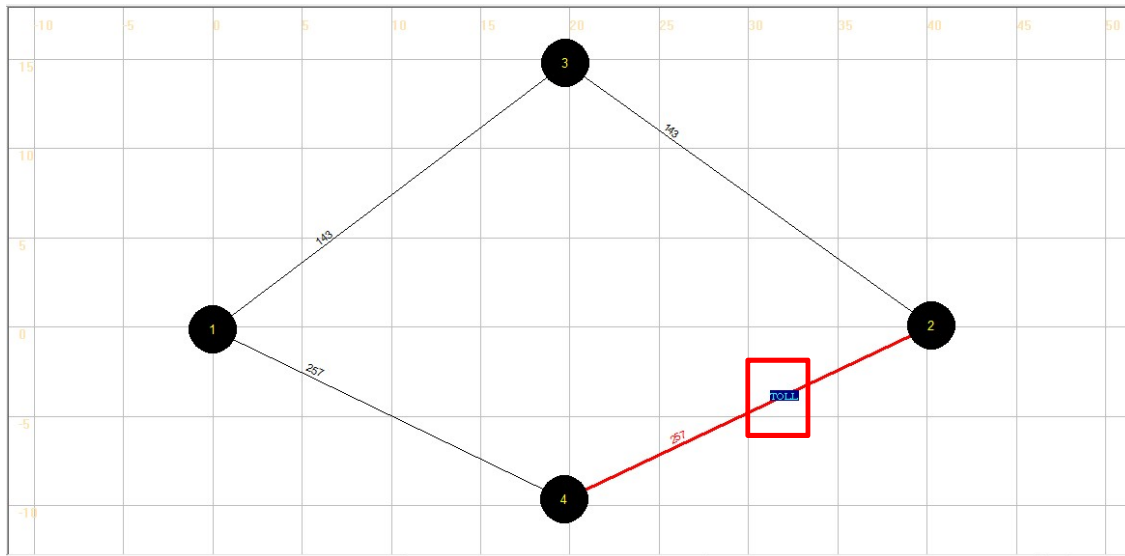


For illustration, lets considered node-3 is avoided. Now the shortest path is 1-4-2

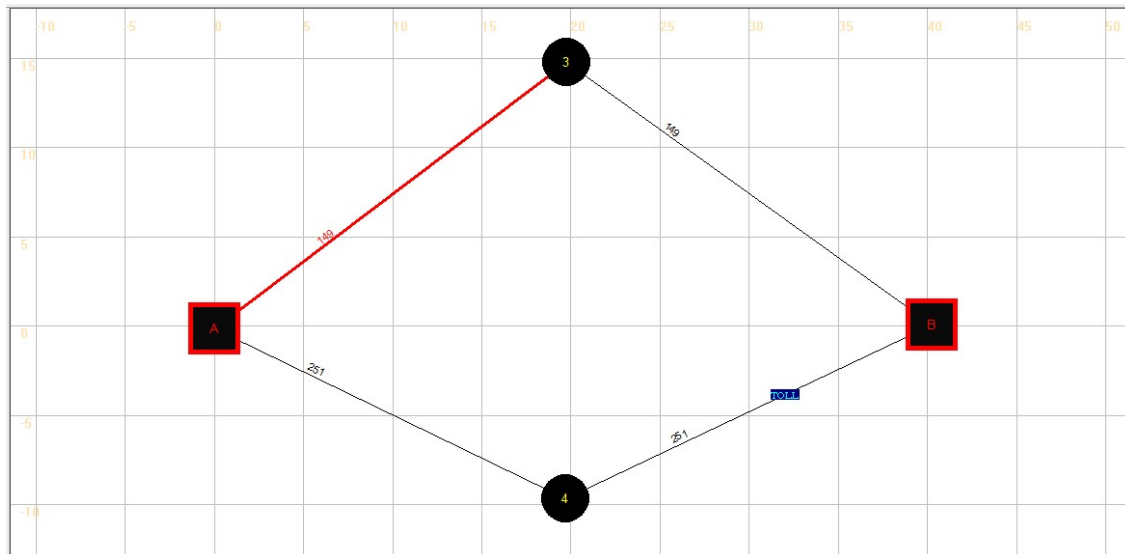
### Path list dialog box



### Task 7: Adding link toll and running the simulation



Toll is added to the link from node-4 to node-2.



After running the simulation, the vehicle volumes on the link 1-4 and 4-2 have reduced and corresponding vehicle volumes 1-3 and 3-2 have increased. This change is because of the addition of toll to link 4-2.