This project contains two Java Files-

1) NetworkMatrix.java

2) TransitTrafficRouting.java

**NetworkMatrix.java**

- This file contains the main method. Run this file to run the project.

Code Overview-

nMatrix.**networkMatrix**[0].addCapacity(1, 3);  
nMatrix.**networkMatrix**[0].addCapacity(3, 2);  
nMatrix.**networkMatrix**[1].addCapacity(2, 5);  
nMatrix.**networkMatrix**[1].addCapacity(0, 4);  
nMatrix.**networkMatrix**[2].addCapacity(1, 3);  
nMatrix.**networkMatrix**[2].addCapacity(3, 1);  
nMatrix.**networkMatrix**[3].addCapacity(0, 5);  
nMatrix.**networkMatrix**[3].addCapacity(2, 6);

Above set of statements statement stores the capacity between the nodes. For first statement, it will be read as- Capacity between node 0 and node 1 is 3 where,

Node 0- Node A

Node 1- Node B

Node 2- Node C

Node 3- Node D

trafficControl = **new** ArrayList<>();  
trafficControl.add(2);  
trafficControl.add(4);  
  
nMatrix.**commonPath**[0].addCommonPath(3, trafficControl);  
  
  
Above set of statements store the value of traffic control variables corresponding to each path. It will be read as- For Path 0 to 3, i.e. A 🡪 D, traffic control variables are 2 and 4, where ,

1 -- alpha

2 – (1- alpha)

3 – beta

4 - (1- beta)

5 - gamma

6 – (1- gamma)

**TransitTrafficRouting.java**

All the operations related to calculation of utilization and traffic control value is performed in this file. Please refer comments in the file.

Variables Overview-

**double**[] **trafficControlVariables** = **new double**[6];

This is an array of traffic control variable where at each position one of the traffic variable is stored out of 6.

**trafficControlVariables[0] – alpha**

**trafficControlVariables[1] – 1- alpha**

**trafficControlVariables[2] – beta**

**trafficControlVariables[3] – 1- beta**

**trafficControlVariables[4] – gamma**

**trafficControlVariables[5] – 1- gamma**

**double**[] **utilization** = **new double**[6];

This is an array of all the six utilizations. They are stored in the same manner as traffic control variables.

**Utilization[0] – Utilization of AC via B**

**Utilization[1] – Utilization of AC via D**

**Utilization[2] – Utilization of BD via C**

**Utilization[3] – Utilization of BD via A**

**Utilization[4] – Utilization of CA via B**

**Utilization[5] – Utilization of CA via Dr**