FIGURE 1

Original directed network

Numbers on arc represent flow capacities — no more than 7 trams travel on road connecting O to B, for example.

Arrows illustrate flow direction allowed for transport from O to T

Figure 1

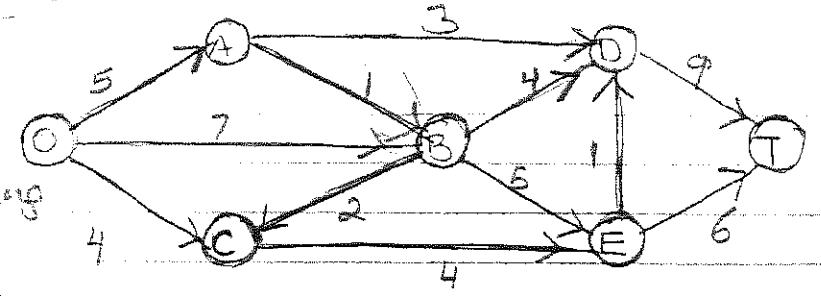
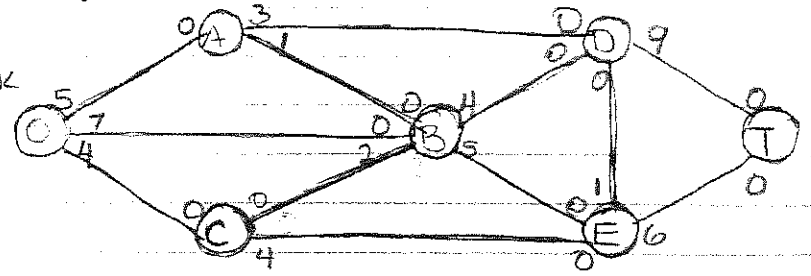


Figure 2

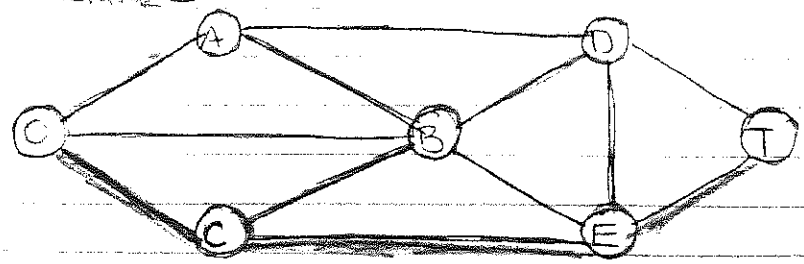


Make original RESIDUAL NETWORK N_L ..... This is now an undirected network w/ RESIDUAL CAPACITIES.

(I like to picture the trams for each road sitting at either their starting or end pts)

Pick a path from O to T such that every arc has positive residual capacity. This is called an AUGMENTED PATH. The residual capacity of this path is the max flow it can tolerate. That is, how many trams of people can go on this route from O to T. e.g.

Figure 3



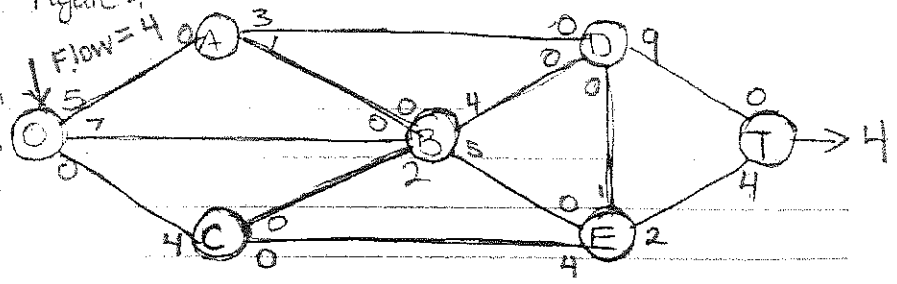
eg. Path O — C — E — T

Max flow allowed on this path is

$\min(4, 4, 6) = 4$.

Think 4 tram loads can get through on this path. Adjust the residual capacities by subtracting 4 from the heads of each arc & adding 4 to the tail of each arc in the path. See Figure 4

Figure 4



Pick another augmented path & adjust residual capacities

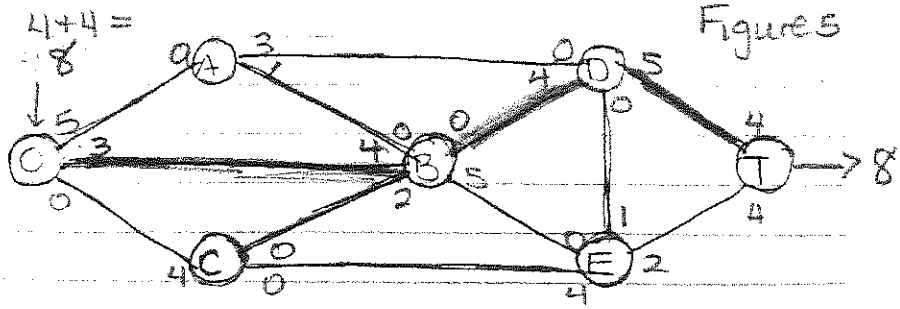
O — B — D — T.

max flow on this path is

$\min(7, 4, 9) = 4$

See Figure 5

Figure 5



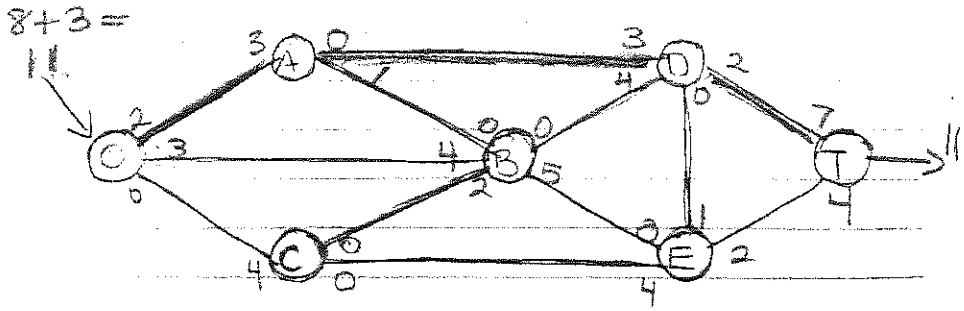
% Augmented path

O – A – D – T

max flow on path is min (5, 3, 5) = 3

Reduce residual capacity on each arc of O – A – D – T by 3. See Figure 6

Figure 6



% Augmented path

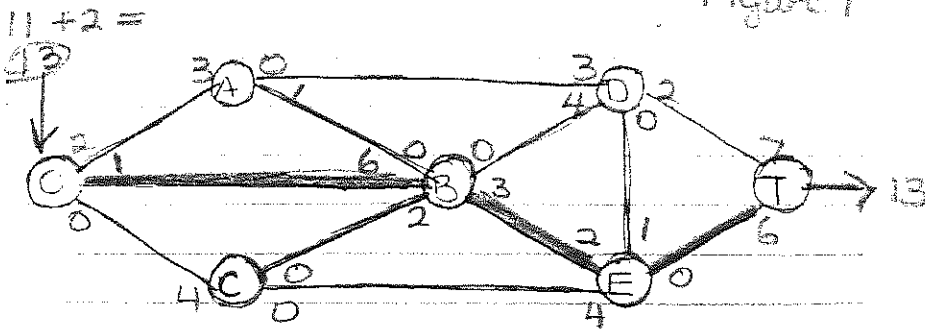
O – B – E – T

max flow of path = min (3, 5, 2) = 2.

Adjust residual capacities

See Figure 7

Figure 7

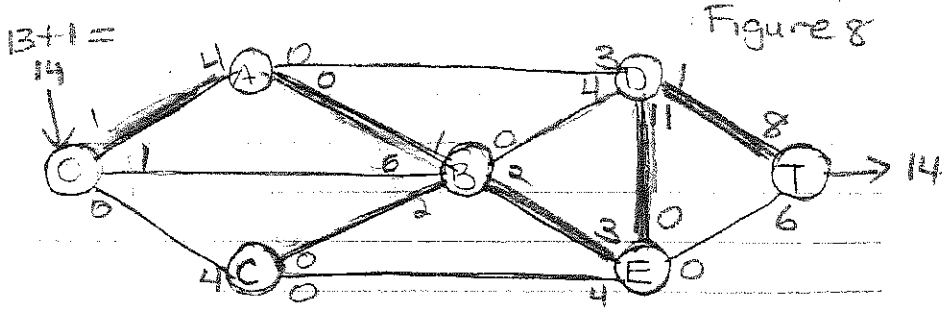


% Augmented path

O – A – B – E – D – T

max flow on path of min (2, 1, 3, 5, 2) = 1

Figure 8



There are no more feasible paths