Algorithm

Step 1: Build network

Build transportation arc;

Build building-to-location mapping arc;

Step 2: Solve traffic assignment to select location for one building

Selecting rules: select the mapping arc which connects the building with the largest flow as the optimal building-to-location mapping for the building.

Step 3: Modify network

Delete other mapping arcs which connect the above building and selected location except mapping arc with largest flow.

Step 4: Repeat step2 and step3, select location for another building

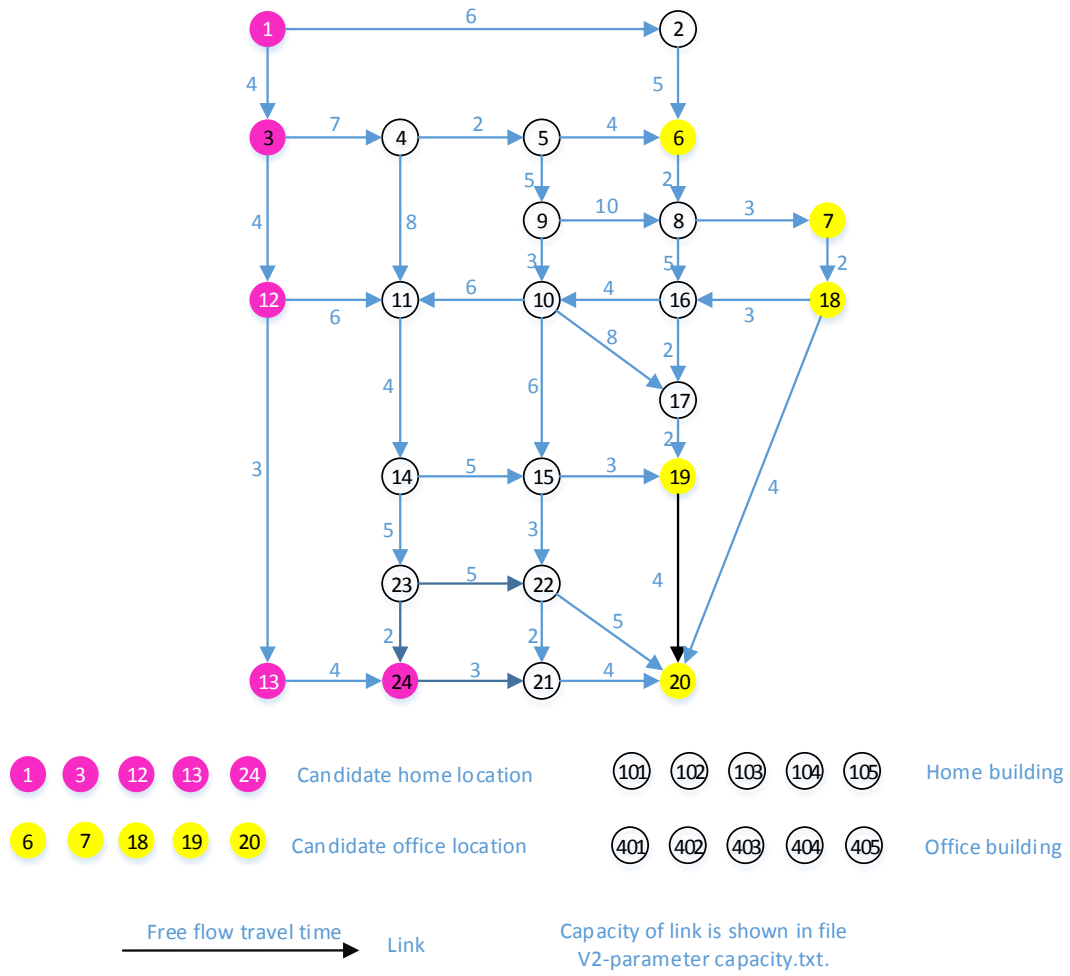
Stop program until all buildings have been assigned to locations

An illustrative example

Input:

(1) 5 home buildings: 101, 102, 103, 104, 105; 5 office buildings: 401, 402, 403, 404, 405;
5 home locations: 1, 3, 24, 13, 12; 5 office locations: 6, 7, 18, 19, 20.
Each home building can be assigned to any home location.
Each office building can be assigned to any office location.

(2) road network



Output:

Iteration (loop)	Assignment decisions	Changes of network (Closed Links)
1	101→1	101→3,101→12,101→13,101→24 102→1,103→1,104→1,105→1
2	102→3	102→12,101→13,101→24 103→2,104→2,105→2
3	103→24	101→12,101→13 104→24,105→24
4	104→13	101→12 105→13
5	105→12	
6	401→6	6→402,6→403,6→404,6→405 7→401,18→401,19→401,20→401
7	402→20	20→403,20→404,20→405 7→402,18→402,19→402
8	403→7	7→404,7→405 18→403,19→403
9	404→18	18→405 19→404
10	405→19	