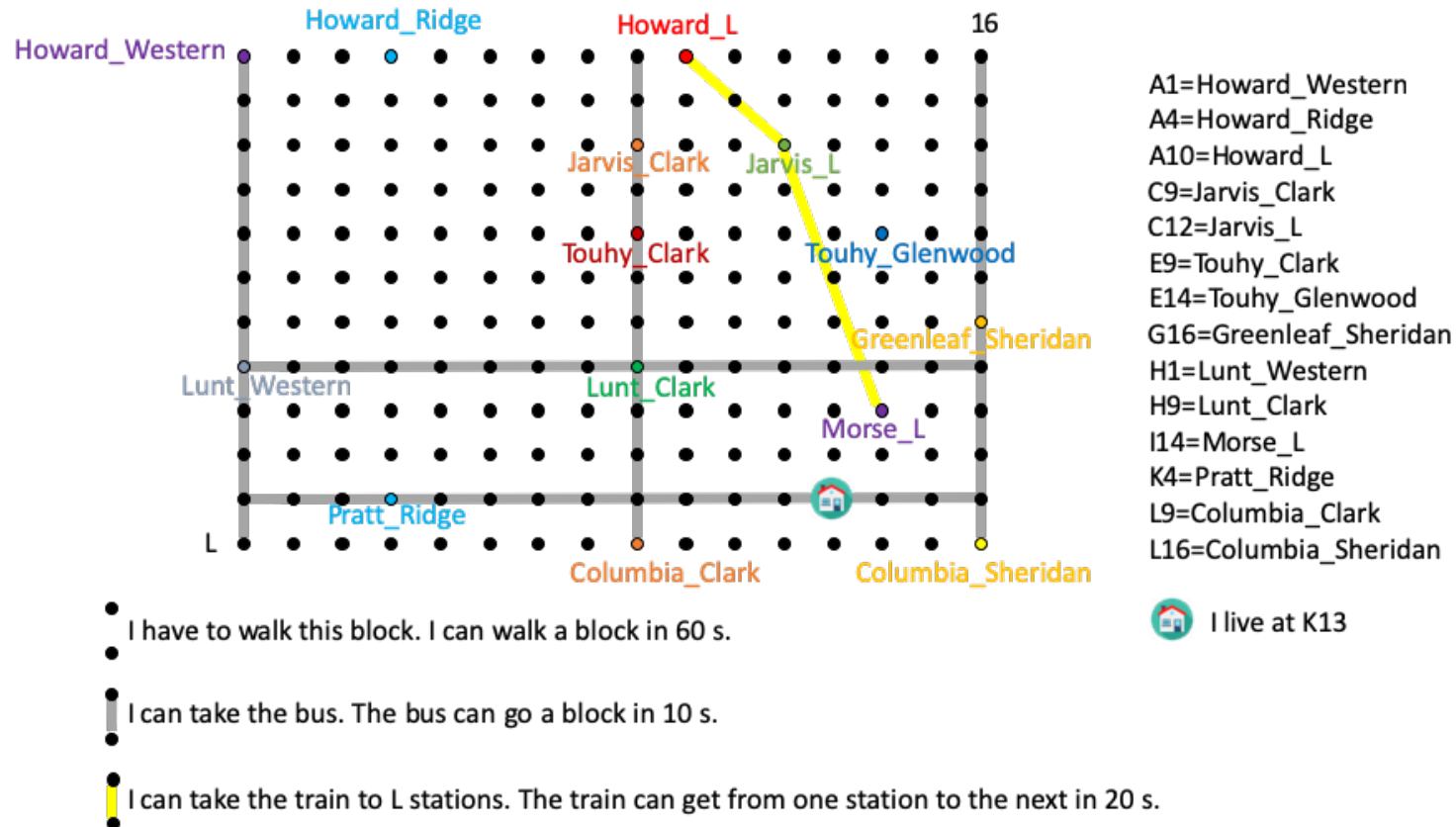I have several errands to run around Rogers Park. Each colored dot below corresponds to the location of each of these errands. I've laid out the RP as a grid. Each column is a number, 1 through 16 (left to right), and each row is a letter A through L (top to bottom). I can walk, take the bus, or take the train. My house is at the corner of Pratt and Newguard. With each errand, my hands are full of items, so I'll have to go home and drop them off before setting off to my next errand. This is a classical single source problem.

A1=Howard_Western
A4=Howard_Ridge
A10=Howard_L
C9=Jarvis_Clark
C12=Jarvis_L
E9=Touhy_Clark
E14=Touhy_Glenwood
G16=Greenleaf_Sheridan
H1=Lunt_Western
H9=Lunt_Clark
I14=Morse_L
K4=Pratt_Ridge
L9=Columbia_Clark
L16=Columbia_Sheridan

I live at K13

I have to walk this block. I can walk a block in 60 s.

I can take the bus. The bus can go a block in 10 s.

I can take the train to L stations. The train can get from one station to the next in 20 s.

Question is... *How long will it take me to get from my house to each of my destinations*? For this assignment, you'll submit 3 pieces of code (as indicated below) and complete the supplied table.
Assignment:

1. Implement the code for the Bellman-Ford algorithm to solve this problem. Include CODE: LASTNAME_12.1.py

2. Implement the code for Dijkstra's algorithm to solve this problem. Include CODE: LASTNAME_12.2.py

3. Implement the code for the A* algorithm to solve this problem. Include CODE: LASTNAME_12.3.py

Each piece of code will be worth 1 pt. Each piece of code must take in a graph G and the starting location (my house, 'K13'). It must return the dictionary of distances between my house and all other locations in the graph. It must work properly in order to get any credit! It must compile. No compile, no credit. The solution table will be worth 1.5 pts.

Solution Table:

Algorithm	Howard_Western	Howard_Ridge	Howard_L	Jarvis_Clark	Jarvis_L	Touhy_Clark	Touhy_Glenwood	Greenleaf_Sheridan	Lunt_Western	Lunt_Clark	Morse_L	Pratt_Ridge	Columbia_Clark	Columbia_Sheridan	Total Time
B-F	220	400	170	120	150	100	210	70	150	70	130	90	50	40	1,970
Dijk	220	400	170	120	150	100	210	70	150	70	130	90	50	40	1,970
A*	220	400	170	120	150	100	210	70	150	70	130	90	50	40	1,970