

CSE 2046 / HW1 REPORT

Elif Gökpınar

a) My code algorithm:

1. Firstly, test file is read from command line argument. At the same time x,y and r are filled in the objects.
2. Objects are put in the array.
3. First element of the array is chosen the beginning point. So, Its hop distance value must be 0.
4. Then, distances are calculated with other points. If the distance is available each of two agents, level of the second agent is set. So, for loop loops again the same situation.
5. If the agent level is set, we can not look at again. We want to make a basic bfs spanning tree. So, we can only reach the unvisited agents.
6. Some agents' hop distances can be 0 also.
7. In the end, all hop distances are in the objects. Output file contains hop distances of agents. For this, I used printWriter.

b) Time complexity $O(n^2)$ Space complexity $O(n)$.

c)

OUTPUTS					
Test1	Test2	Test3	Test4	Test5	Test6
0	0	0	0	0	0
1	2	1	0	1	1
2	1	3	0	2	2
		2	0	3	3
		2		3	4
				4	2
				0	3
				0	3
				4	5
					4
					5
					6
					7
					0
					8
For all tests, my code works successfully.					