CS2023 - Data Structures and Algorithms

In-class Lab Exercise

Week 12

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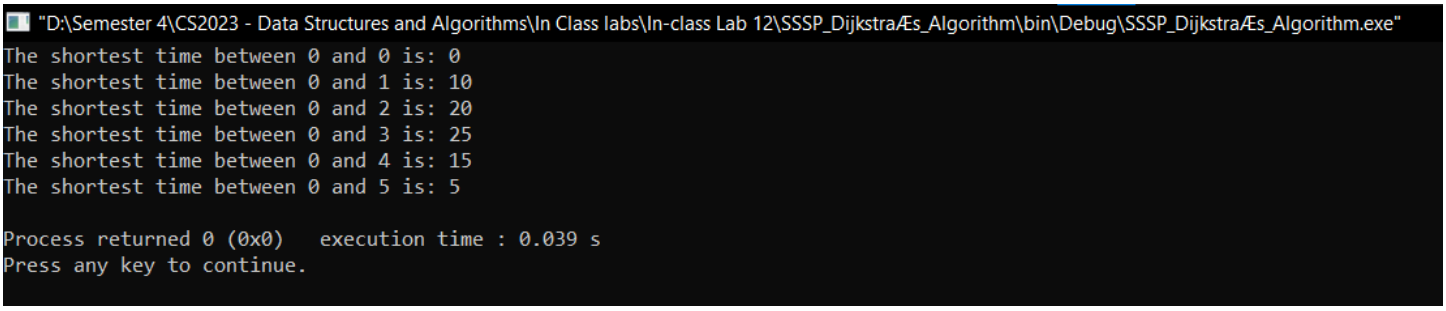
Index: 200476P

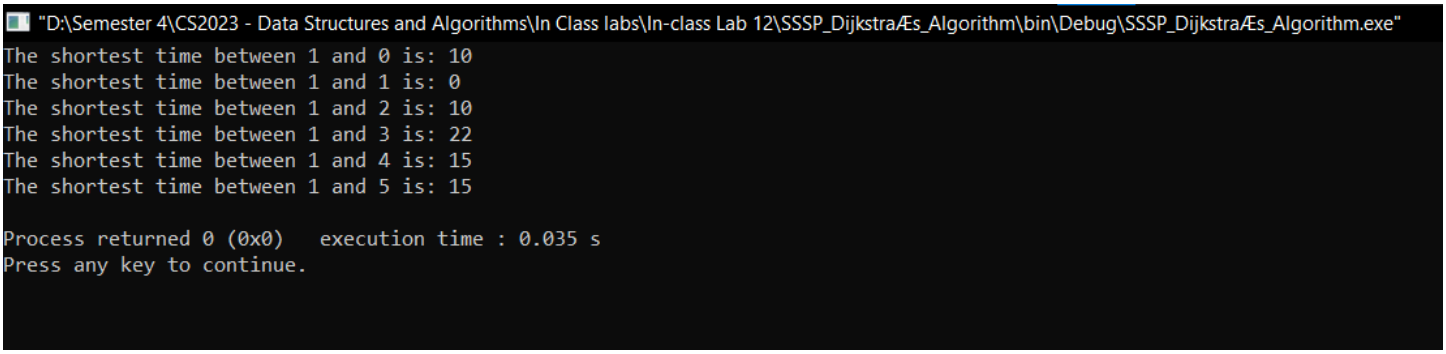
Question 1

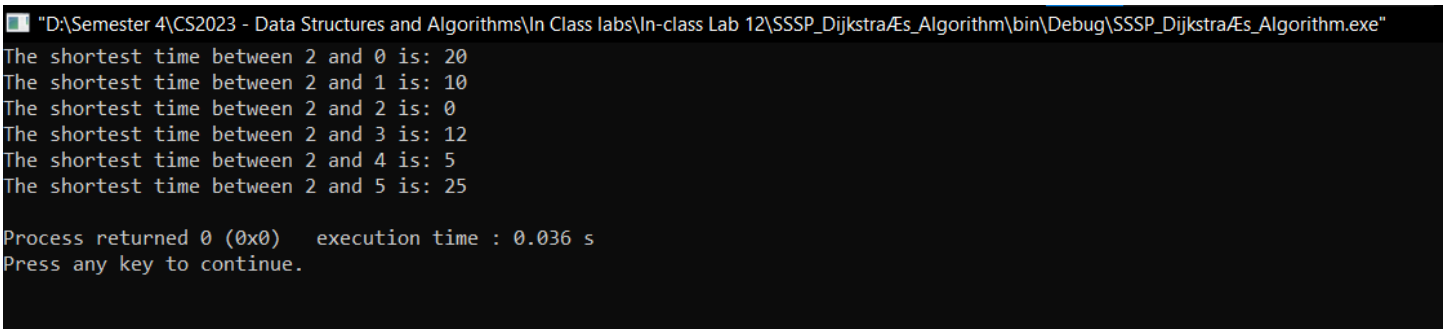
1.1)

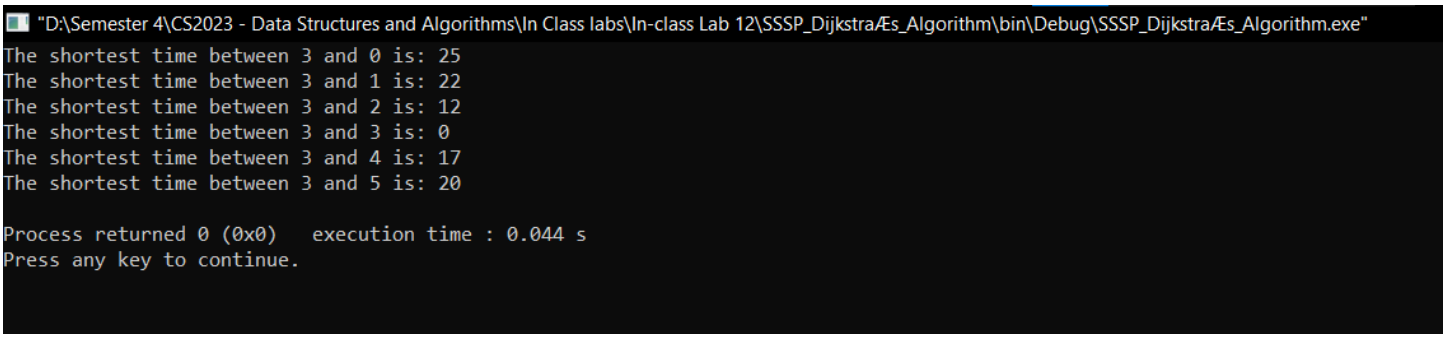
	0	*1*	*2*	*3*	*4*	*5*
0	0	10	0	0	15	5
1	10	0	10	30	0	0
2	0	10	0	12	5	0
3	0	30	12	0	0	20
4	15	0	5	0	0	0
5	5	0	0	20	0	0

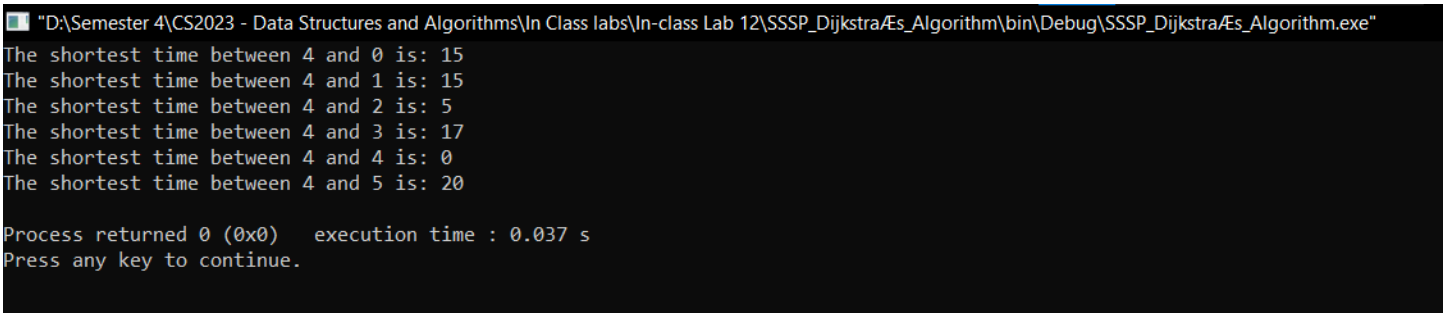
1.3)

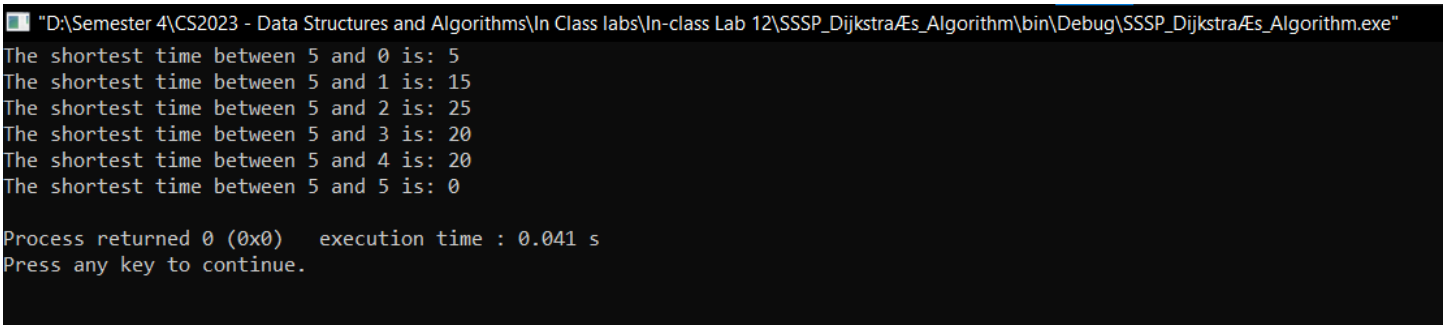












1.4)

- Average time for city 0: $\frac{10+20+25+15+5}{5} = 15$
- Average time for city 1: $\frac{10+10+22+15+15}{5} = 14.4$
- Average time for city 2: $\frac{20+10+12+5+25}{5} = 14.4$
- Average time for city 3: $\frac{25+22+12+17+20}{5} = 19.2$
- Average time for city 4: $\frac{15+15+5+17+20}{5} = 14.4$
- Average time for city 5: $\frac{5+15+25+20+20}{5} = 17$

According to these calculated values, 1, 2, and 4 cities have the shortest average time for other cities. So, they are the most suitable cities to place the hospitals so that ambulances can reach other cities in a short time.

Link to the Git hub repository: [hashirupramuditha/CS2023---Data-Structures-Algorithms (github.com)]