ASSIGNMENT 1

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This Hand in consists of a report which implements the program for tunnel crossing riddle using different search methods.

i) BFS
ii) DFS
iii) UCS

GRAPHS:

The Graphs for No. of persons versus Execution time are drawn to know the performance of individual search methods.

Result: From the graphs it is noticed that, DFS is better than BFS and UCS as far as time complexity is concerned.

Outputs:

These are the solutions for the inputs 1,2,5,10 minutes

1 and 2 Crosses the tunnel 2 minutes.

1 goes back in 1 minutes.

5 and 10 Crosses the tunnel 10 minutes.

2 goes back in 2 minutes.

1 and 2 Crosses the tunnel 2 minutes.

Total is 17 minutes.

22 Milliseconds

Solution implementing the Depth first search is :

5 and 10 go across in 10 minutes.

10 comes back in 10 minutes.

2 and 10 go across in 10 minutes.

2 comes back in 2 minutes.

1 and 2 go across in 2 minutes.

Total is 34 minutes.

15 Milliseconds

Solution implementing the Uniform cost search is :

1 and 2 go across in 2 minutes.

1 comes back in 1 minutes.

5 and 10 go across in 10 minutes.

2 comes back in 2 minutes.

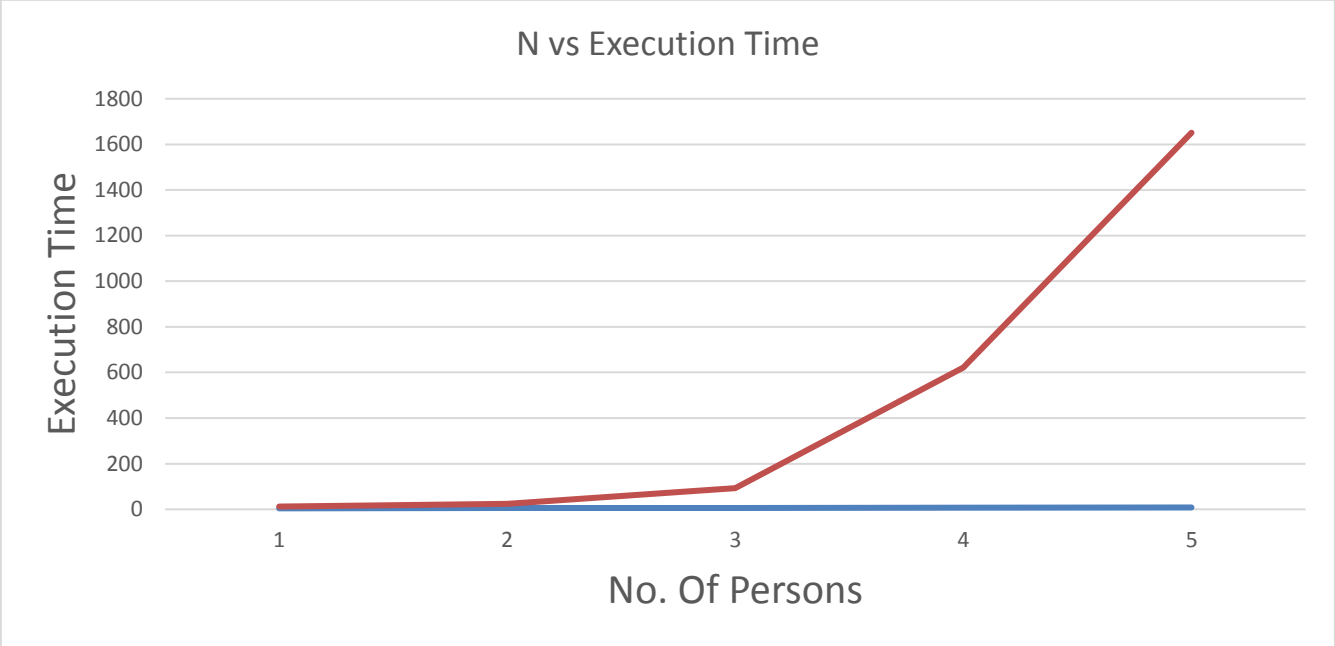
1 and 2 go across in 2 minutes.

Total is 17 minutes.

17 Milliseconds

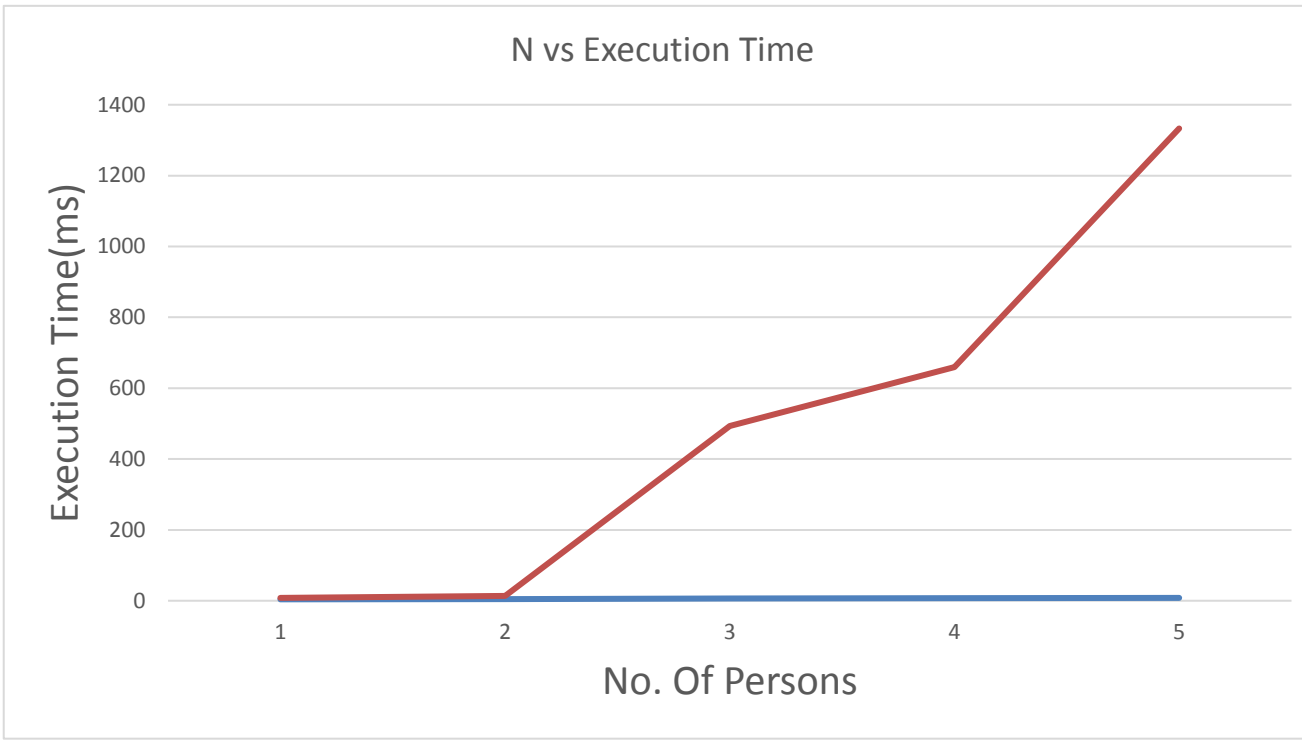
BREADTH FIRST SEARCH

No. Of Persons	Execution Time(in milli seconds)
4	12
5	24
6	93
7	621
8	1651



UNIFORM COST SEARCH

No. Of Persons	Execution Time(in milli seconds)
4	8
5	14
6	493
7	659
8	1333



DEPTH FIRST SEARCH

No. Of Persons	Execution Time(in milli seconds)
4	8
5	14
6	58
7	286
8	594