Time Performance Analysis of **BFS** and **A-star** Algorithms

Case-1:

Starting State: 012345687
BFS – 0.225ms, Moves=1
A-star – 0.119ms, Moves=1

Case-2:

Starting State: 041328675
BFS – 5.920ms, Moves=5
A-star – 1.885ms, Moves=5

Case-3:

Starting State: 301682457
BFS – 115.52ms, Moves=10
A-star – 23.437ms, Moves=10

Case-4:

Starting State: 832510647
BFS – 546.13ms, Moves=14
A-star – 109.30ms, Moves=16

Case-5:

Starting State: 048617352
BFS – 21.952sec, Moves=20
A-star – 0.5415sec, Moves=24

Case-6:

Starting State: 537160842
BFS – 266.668sec, Moves=24
A-star – 1.15292sec, Moves=26

Conclusion:
We can see that A-star algorithm is taking less execution time compared to BFS even though the number of moves(steps) are higher in certain cases (4,5,6). Hence, we can conclude A-star algorithm is better than BFS.

Snapshot of terminal output: