```
8-Puzzle problem using A* search Algorithm
Enter the Current State
4 1 3
0 2 6
7 5 8
Enter the Goal State
1 2 3
4 5 6
7 8 0
Enter the heuristic number that you want to proceed with
1. Manhattan
2. Misplaced Tiles
1
------------------------------------------------------
Level 0 - [[4,1,3][0,2,6][7,5,8]]
------------------------------------------------------
Node Chosen for Level 1 - [[4,1,3][0,2,6][7,5,8]]

Generated Nodes :
-----------------
[[0,1,3][4,2,6][7,5,8]] - f(n) =  1 + 4 = 5
[[4,1,3][2,0,6][7,5,8]] - f(n) =  1 + 6 = 7
[[4,1,3][7,2,6][0,5,8]] - f(n) =  1 + 6 = 7
------------------------------------------------------
Node Chosen for Level 2 - [[0,1,3][4,2,6][7,5,8]]

Generated Nodes :
-----------------
[[1,0,3][4,2,6][7,5,8]] - f(n) =  2 + 3 = 5
[[4,1,3][0,2,6][7,5,8]] - Already visited Node!
------------------------------------------------------
Node Chosen for Level 3 - [[1,0,3][4,2,6][7,5,8]]

Generated Nodes :
-----------------
[[1,3,0][4,2,6][7,5,8]] - f(n) =  3 + 4 = 7
[[0,1,3][4,2,6][7,5,8]] - Already visited Node!
[[1,2,3][4,0,6][7,5,8]] - f(n) =  3 + 2 = 5
------------------------------------------------------
Node Chosen for Level 4 - [[1,2,3][4,0,6][7,5,8]]

Generated Nodes :
-----------------
[[1,0,3][4,2,6][7,5,8]] - Already visited Node!
[[1,2,3][4,6,0][7,5,8]] - f(n) =  4 + 3 = 7
[[1,2,3][0,4,6][7,5,8]] - f(n) =  4 + 3 = 7
[[1,2,3][4,5,6][7,0,8]] - f(n) =  4 + 1 = 5
------------------------------------------------------
Node Chosen for Level 5 - [[1,2,3][4,5,6][7,0,8]]

Generated Nodes :
-----------------
```

```
[[1,2,3][4,0,6][7,5,8]] - Already visited Node!
[[1,2,3][4,5,6][7,8,0]] - f(n) =  5 + 0 = 5
[[1,2,3][4,5,6][0,7,8]] - f(n) =  5 + 2 = 7
------------------------------------------------------------
Node Chosen for Level 6 - [[1,2,3][4,5,6][7,8,0]]
The goal path found...
--------------------------
[[4,1,3][0,2,6][7,5,8]]
[[0,1,3][4,2,6][7,5,8]]
[[1,0,3][4,2,6][7,5,8]]
[[1,2,3][4,0,6][7,5,8]]
[[1,2,3][4,5,6][7,0,8]]
[[1,2,3][4,5,6][7,8,0]]
--------------------------
Time Taken : 15 milliseconds
The number of nodes that are generated are : 15
The number of nodes that are expanded are : 6
```