Week 3 output.

Huristic : Number of tiles out of place.

```
Enter the initial state of the 8-puzzle:
Enter row 1 (space-separated, use 0 for empty): 5 4 0
Enter row 2 (space-separated, use 0 for empty): 6 1 8
Enter row 3 (space-separated, use 0 for empty): 7 3 2
Enter the goal state of the 8-puzzle:
Enter row 1 (space-separated, use 0 for empty): 0 1 2
Enter row 2 (space-separated, use 0 for empty): 3 4 5
Enter row 3 (space-separated, use 0 for empty): 6 7 8
Solution Path:
[5, 4, 0]
[6, 1, 8]
[7, 3, 2]

[5, 0, 4]
[6, 1, 8]
[7, 3, 2]

[5, 1, 4]
[6, 0, 8]
[7, 3, 2]

[5, 1, 4]
[6, 3, 8]
[7, 0, 2]
```

```
[5, 1, 4]
[6, 3, 8]
[7, 2, 0]

[5, 1, 4]
[6, 3, 0]
[7, 2, 8]

[5, 1, 4]
[6, 0, 3]
[7, 2, 8]

[5, 1, 4]
[6, 2, 3]
[7, 0, 8]

[5, 1, 4]
[6, 2, 3]
[0, 7, 8]

[5, 1, 4]
[0, 2, 3]
[6, 7, 8]
```

```
[2, 0, 5]
[1, 3, 4]
[6, 7, 8]

[0, 2, 5]
[1, 3, 4]
[6, 7, 8]

[1, 2, 5]
[0, 3, 4]
[6, 7, 8]

[1, 2, 5]
[3, 0, 4]
[6, 7, 8]

[1, 2, 5]
[3, 4, 0]
[6, 7, 8]

[1, 2, 0]
[3, 4, 5]
[6, 7, 8]
```

Manhatten Distance.

```
Enter the initial state (3x3 grid) with 0 for the empty space:
Enter row 1 (space-separated): 1 2 3
Enter row 2 (space-separated): 4 0 5
Enter row 3 (space-separated): 6 7 8
Enter the goal state (3x3 grid):
Enter row 1 (space-separated): 1 2 3
Enter row 2 (space-separated): 4 5 6
Enter row 3 (space-separated): 7 8 0
No solution found.
```