Nathan Sucher

Homework 1 Task 3

**Output For Case 1:**

DONE   
-------------------------------  
Number of steps: 288  
Path to Goal: ['Down', 'Down', 'Down', 'Left']  
Time: 0.16603779792785645 seconds  
Open List Size: 327  
Nodes Added to Open List: 618  
Nodes Added to Closed List: 288  
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Steps From Goal to Start:  
--------------------------------  
State ID: 7  
Parent State ID: 5  
G(n): 22  
H(n): 0  
F(n): 22  
Depth: 4  
Move: Left  
--------------------------------  
--------------------------------  
State ID: 5  
Parent State ID: 4  
G(n): 21  
H(n): 1  
F(n): 22  
Depth: 3  
Move: Down  
--------------------------------  
--------------------------------  
State ID: 4  
Parent State ID: 3  
G(n): 6  
H(n): 2  
F(n): 8  
Depth: 2  
Move: Down  
--------------------------------  
--------------------------------  
State ID: 3  
Parent State ID: 1  
G(n): 3  
H(n): 3  
F(n): 6  
Depth: 1  
Move: Down  
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--------------------------------  
State ID: 1  
Parent State ID: None  
G(n): 0  
H(n): 0  
F(n): 0  
Depth: 0  
Move:   
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**Output For Case 2:**

DONE   
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Number of steps: 3204  
Path to Goal: ['Up', 'Up', 'Left', 'Down', 'Right', 'Down']  
Time: 4.502018690109253 seconds  
Open List Size: 3066  
Nodes Added to Open List: 6377  
Nodes Added to Closed List: 3204  
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Steps From Goal to Start:  
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State ID: 10  
Parent State ID: 8  
G(n): 38  
H(n): 0  
F(n): 38  
Depth: 6  
Move: Down  
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--------------------------------  
State ID: 8  
Parent State ID: 6  
G(n): 23  
H(n): 1  
F(n): 24  
Depth: 5  
Move: Right  
--------------------------------  
--------------------------------  
State ID: 6  
Parent State ID: 5  
G(n): 20  
H(n): 2  
F(n): 22  
Depth: 4  
Move: Down  
--------------------------------  
--------------------------------  
State ID: 5  
Parent State ID: 3  
G(n): 19  
H(n): 3  
F(n): 22  
Depth: 3  
Move: Left  
--------------------------------  
--------------------------------  
State ID: 3  
Parent State ID: 2  
G(n): 18  
H(n): 4  
F(n): 22  
Depth: 2  
Move: Up  
--------------------------------  
--------------------------------  
State ID: 2  
Parent State ID: 1  
G(n): 15  
H(n): 3  
F(n): 18  
Depth: 1  
Move: Up  
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--------------------------------  
State ID: 1  
Parent State ID: None  
G(n): 0  
H(n): 0  
F(n): 0  
Depth: 0  
Move:   
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