README.md

S7_AI_Assgn-1

1) Vacuum Bot

Output:

```
vasan@MSI MINGW64 /f/B18-22/S7/AI/Assignments/S7_AI_Assgn-1 (master)
$ C:/Users/vasan/AppData/Local/Programs/Python/Python39/python.exe f:/B18-22/S7/AI/
Assignments/S7_AI_Assgn-1/Qn1/VacuumBot.py

Vacuum Bot

Details are mentioned in README.pdf

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Environment: [A:Clean, B:Clean]
Start Position: A
Performance Score: 1000

Environment: [A:Clean, B:Dirty]
Start Position: A
Performance Score: 999

Environment: [A:Dirty, B:Clean]
Start Position: A
Performance Score: 999

Environment: [A:Dirty, B:Dirty]
Start Position: A
Performance Score: 998

Environment: [A:Clean, B:Clean]
Start Position: B
Performance Score: 1000

Environment: [A:Clean, B:Dirty]
Start Position: B
Performance Score: 999

Environment: [A:Dirty, B:Clean]
Start Position: B
Performance Score: 999

Environment: [A:Dirty, B:Dirty]
Start Position: B
Performance Score: 998
```
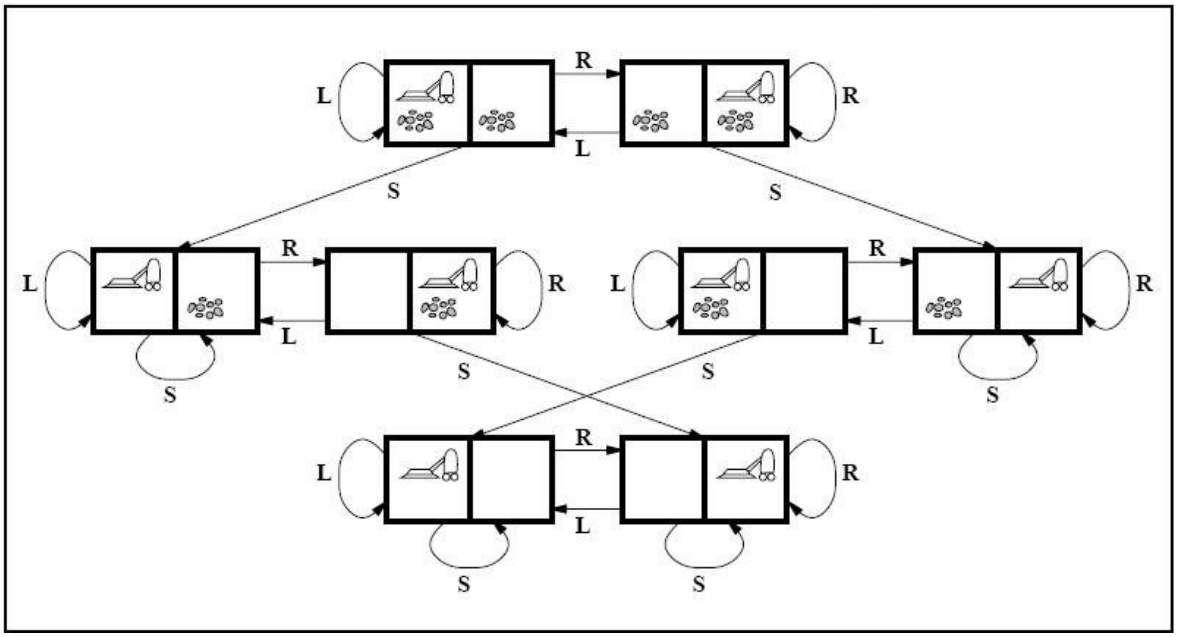

State Space Search Graph:



2) Stone Pile Game

Instructions:

1. User has the option to play with the agent.
2. User can specify who goes first
3. User has to input initial state of the stone piles as space separated integers
4. If User is playing the game, during his turn he has to input no. of stones he wants to remove from which pile. Input should be given as space separated integers (pile stones)
5. '0' refers to 1st pile and '1' refers to 2nd pile
6. In each the player has to remove atleast one stone

Output:

1. Human vs Bot and Human starts first

```
vasan@MSI MINGW64 /f/B18-22/S7/AI/Assignments/S7_AI_Assgn-1 (master)
$ C:/Users/vasan/AppData/Local/Programs/Python/Python39/python.exe f:/B18-22/S7/AI/
Assignments/S7_AI_Assgn-1/Qn2/StonePile.py
Stone Pile Game

Game instructions are given README.pdf

============================

Do you want to play?(y/n)y

Would you like to go first?(y/n)y

Enter initial state of stone piles: 1 2

Human vs Bot

Current state: [1, 2]
Player 1's turn (pile, stones): 0 1

Current state: [0, 2]
Player 2 removed 2 from 2nd pile

Current state: [0, 0]
Player 2 won!
```

2. Human vs Bot and Human starts second

```
vasan@MSI MINGW64 /f/B18-22/S7/AI/Assignments/S7_AI_Assgn-1 (master)
$ C:/Users/vasan/AppData/Local/Programs/Python/Python39/python.exe f:/B18-22/S7/AI/
Assignments/S7_AI_Assgn-1/Qn2/StonePile.py
Stone Pile Game

Game instructions are given README.pdf

==============================

Do you want to play?(y/n)y

Would you like to go first?(y/n)n

Enter initial state of stone piles: 1 1

Human vs Bot

Current state: [1, 1]
Player 2 removed 1 from 1st pile

Current state: [0, 1]
Player 1's turn (pile, stones): 1 1

Current state: [0, 0]
You won!
```

3. Bot vs Bot and Player 1 starts first

```
vasan@MSI MINGW64 /f/B18-22/S7/AI/Assignments/S7_AI_Assgn-1 (master)
$ C:/Users/vasan/AppData/Local/Programs/Python/Python39/python.exe f:/B18-22/S7/AI/
Assignments/S7_AI_Assgn-1/Qn2/StonePile.py
Stone Pile Game

Game instructions are given README.pdf

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Do you want to play?(y/n)n

Who should start first? Player 1 or Player 2: 1

Enter initial state of stone piles: 2 5

Bot vs Bot

Current state: [2, 5]
Player 1 removed 3 from 2nd pile

Current state: [2, 2]
Player 2 removed 1 from 1st pile

Current state: [1, 2]
Player 1 removed 1 from 2nd pile

Current state: [1, 1]
Player 2 removed 1 from 1st pile

Current state: [0, 1]
Player 1 removed 1 from 2nd pile

Current state: [0, 0]
Player 1 won!
```

4. Bot vs Bot and Player 2 starts first

```
vasan@MSI MINGW64 /f/B18-22/S7/AI/Assignments/S7_AI_Assgn-1 (master)
$ C:/Users/vasan/AppData/Local/Programs/Python/Python39/python.exe f:/B18-22/S7/AI/
Assignments/S7_AI_Assgn-1/Qn2/StonePile.py
Stone Pile Game

Game instructions are given README.pdf

============================

Do you want to play?(y/n)n

Who should start first? Player 1 or Player 2: 2

Enter initial state of stone piles: 3 4

Bot vs Bot

Current state: [3, 4]
Player 2 removed 1 from 2nd pile

Current state: [3, 3]
Player 1 removed 3 from 2nd pile

Current state: [3, 0]
Player 2 removed 3 from 1st pile

Current state: [0, 0]
Player 2 won!
```