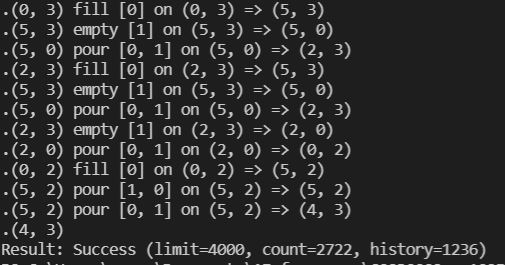
**COS30002**

**Lab Report – Task 6 (28/3/2021)**

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* Looked at Towers of Hanoi code
* Modified sequence of moves in the code
* Enabled random search
* Implemented random selection using Sample
* Implemented pointless move avoidance
* Looked at water Jugs code
* Fixed tests
* Solved sequence 1
* Solved sequence 2
* Tested Water Jugs random search
* Implemented better random search
* Set all goals
* Added pointless move avoidance



Logs:

1st time:

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 50

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 42

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 42

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 57

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 94

[(0, 1), (1, 2), (2, 1), (0, 2), (1, 0), (0, 1), (1, 2), (2, 1), (1, 0), (0, 2), (2, 0), (0, 1), (1, 2), (2, 1), (2, 0), (0, 2), (2, 0), (1, 2), (2, 0), (0, 1), (1, 2), (2, 0), (0, 1), (1, 2), (2, 1), (0, 2), (1, 2), (2, 1), (2, 0), (1, 2), (2, 0), (0, 2), (0, 1), (1, 0), (0, 1), (2, 1), (1, 0), (0, 1), (0, 2), (1, 0), (0, 2), (2, 0), (0, 1), (1, 0), (1, 2), (0, 2)]

Moves (valid and kept): 46

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 98

[(0, 2), (2, 0), (0, 2), (0, 1), (2, 1), (1, 0), (1, 2), (0, 2), (0, 1), (2, 0), (0, 2), (2, 0), (0, 2), (1, 0), (0, 1), (1, 0), (0, 1), (1, 0), (2, 1), (2, 0), (1, 2), (2, 1), (0, 2), (1, 0), (0, 1), (1, 0), (2, 1), (0, 2), (2, 1), (1, 0), (0, 1), (1, 2), (1, 0), (0, 1), (2, 1), (0, 2), (1, 0), (1, 2), (0, 2)]

Moves (valid and kept): 39

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 48

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 57

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 42

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 53

Done.

2nd time:

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 87

[(0, 1), (0, 2), (1, 0), (2, 1), (0, 1), (1, 2), (1, 0), (2, 0), (0, 1), (0, 2), (1, 2), (0, 1), (2, 0), (0, 1), (1, 2), (2, 0), (2, 1), (0, 2), (1, 0), (2, 0), (1, 2), (0, 2),

(2, 1), (0, 2), (1, 2)]

Moves (valid and kept): 25

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 40

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 55

[(0, 2), (2, 1), (0, 2), (1, 0), (2, 1), (0, 2), (2, 1), (1, 0), (1, 2), (0, 1), (1, 2), (2, 0), (2, 1), (0, 1), (0, 2), (1, 2), (2, 0), (0, 1), (1, 2), (2, 0), (1, 2), (0, 2)]

Moves (valid and kept): 22

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 71

[(0, 2), (2, 1), (0, 2), (1, 2), (2, 0), (0, 1), (1, 2), (2, 0), (0, 1), (1, 2), (0, 1), (2, 0), (0, 1), (1, 2), (2, 0), (0, 1), (2, 0), (1, 2), (2, 0), (1, 2), (0, 1), (0, 2),

(1, 0), (0, 2)]

Moves (valid and kept): 24

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 27

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 26

[(0, 2), (0, 1), (2, 1), (0, 2), (1, 0), (1, 2), (0, 1), (1, 2)]

Moves (valid and kept): 8

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 97

[(0, 1), (0, 2), (1, 2), (2, 0), (0, 1), (1, 2), (2, 0), (0, 1), (2, 0), (1, 0), (0, 2), (0, 1), (2, 1), (0, 2), (1, 0), (1, 2), (0, 1), (2, 0), (1, 0), (2, 1), (0, 2), (0, 1),

(2, 1), (1, 0), (1, 2), (0, 2), (2, 1), (2, 0), (1, 0), (1, 2), (0, 2), (2, 1), (1, 0), (0, 2), (2, 1), (1, 0), (0, 2), (0, 1), (2, 0), (1, 2), (0, 2)]

Moves (valid and kept): 41

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 33

[(0, 1), (0, 2), (1, 0), (0, 2), (2, 1), (1, 0), (2, 1), (0, 2), (2, 1), (0, 2), (1, 0), (1, 2), (0, 1), (1, 2)]

Moves (valid and kept): 14

Done.

Guessing with n=3, limit=100 ...

Result: Found it!

Count (attempted random moves) 90

[(0, 2), (2, 1), (1, 0), (0, 2), (0, 1), (2, 1), (1, 0), (0, 2), (2, 1), (0, 2), (1, 2), (2, 0), (0, 1), (1, 2), (1, 0), (2, 0), (2, 1), (0, 1), (0, 2), (1, 2), (1, 0), (2, 0),

(2, 1), (0, 2), (2, 1), (0, 2), (1, 2), (1, 0), (2, 1), (1, 0), (0, 2), (0, 1), (2, 0), (1, 2), (0, 2)]

Moves (valid and kept): 35

Done.

Guessing with n=3, limit=100 ...

Result: Hit Limit. No solution.

Count (attempted random moves) 100

Moves (valid and kept): 27

Done.