BlindSearches.pdf

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Assignment 2 Report – Blind Searches

CSE 415: Introduction to Artificial Intelligence

Winter, January 21, 2020.

BFS	Path found from start to goal	Length of path	Number of nodes expanded
Missionaries and Cannibals	see appendix [1]	8	10
Farmer, Fox, Chicken, and Grain	[['Farmer', 'Grain', 'Chicken', 'Fox'] ,[]] [['Fox', 'Grain'] ,['Chicken', 'Farmer']] [['Farmer', 'Fox', 'Grain'] ,['Chicken']] [['Grain'] ,['Chicken', 'Farmer', 'Fox']] [['Chicken', 'Farmer', 'Grain'] ,['Fox']] [['Chicken'] ,['Farmer', 'Fox', 'Grain']] [['Chicken', 'Farmer'] ,['Fox', 'Grain']] [[] ,['Chicken', 'Farmer', 'Fox', 'Grain']]	7	11
4-Disk Towers of Hanoi	see appendix [2]	18	74

DFS	Path found from start to goal	Length of path	Number of nodes expanded
Missionaries and Cannibals	see appendix [3]	9	10
Farmer, Fox, Chicken, and Grain	[['Farmer', 'Grain', 'Chicken', 'Fox'] ,[]] [['Fox', 'Grain'] ,['Chicken', 'Farmer']] [['Farmer', 'Fox', 'Grain'] ,['Chicken']] [['Grain'] ,['Chicken', 'Farmer', 'Fox']] [['Chicken', 'Farmer', 'Grain'] ,['Fox']] [['Chicken'] ,['Farmer', 'Fox', 'Grain']] [['Chicken', 'Farmer'] ,['Fox', 'Grain']] [[] ,['Chicken', 'Farmer', 'Fox', 'Grain']]	9	9
4-Disk Towers of Hanoi	see appendix [4]	40	40

Solution Path Appendix

[1]

M on left:3
C on left:3
M on right:0
C on right:0
boat is on the left.

M on left:2
C on left:2
M on right:1
C on right:1
boat is on the right.

M on left:3
C on left:2
M on right:0
C on right:1
boat is on the left.

M on left:1
C on left:1
M on right:2
C on right:2
boat is on the right.

M on left:3
C on left:1
M on right:0
C on right:2
boat is on the left.

M on left:0
C on left:1
M on right:3
C on right:2
boat is on the right.

M on left:1

C on left:1
    M on right:2
    C on right:2
boat is on the left.

M on left:0
C on left:0
    M on right:3
    C on right:3
boat is on the right.

[2]
[[4, 3, 2, 1] ,[] ,[]]
[[4, 3, 2] ,[1] ,[]]
[[4, 3] ,[1] ,[2]]
[[4, 3, 1] ,[] ,[2]]
[[4, 3] ,[] ,[2, 1]]
[[4] ,[3] ,[2, 1]]
[[4, 1] ,[3] ,[2]]
[[4, 1] ,[3, 2] ,[]]
[[4] ,[3, 2, 1] ,[]]
[[] ,[3, 2, 1] ,[4]]
[[1] ,[3, 2] ,[4]]
[[] ,[3, 2] ,[4, 1]]
[[2] ,[3] ,[4, 1]]
[[2, 1] ,[3] ,[4]]
[[2, 1] ,[] ,[4, 3]]
[[2] ,[1] ,[4, 3]]
[[] ,[1] ,[4, 3, 2]]
[[1] ,[] ,[4, 3, 2]]
[[] ,[] ,[4, 3, 2, 1]]

[3]
M on left:3
C on left:3
    M on right:0
    C on right:0
boat is on the left.

M on left:2

C on left:2
    M on right:1
    C on right:1
boat is on the right.

M on left:3
C on left:2
    M on right:0
    C on right:1
boat is on the left.

M on left:0
C on left:2
    M on right:3
    C on right:1
boat is on the right.

M on left:2
C on left:2
    M on right:1
    C on right:1
boat is on the left.

M on left:1
C on left:1
    M on right:2
    C on right:2
boat is on the right.

M on left:3
C on left:1
    M on right:0
    C on right:2
boat is on the left.

M on left:0
C on left:1
    M on right:3

C on right:2
boat is on the right.

M on left:1
C on left:1
M on right:2
C on right:2
boat is on the left.

M on left:0
C on left:0
M on right:3
C on right:3
boat is on the right.

[4] [[4, 3, 2, 1] ,[] ,[]]
[[4, 3, 2] ,[1] ,[]]
[[4, 3] ,[1] ,[2]]
[[4, 3, 1] ,[] ,[2]]
[[4, 3] ,[] ,[2, 1]]
[[4] ,[3] ,[2, 1]]
[[4, 1] ,[3] ,[2]]
[[4] ,[3, 1] ,[2]]
[[4, 2] ,[3, 1] ,[]]
[[4, 2, 1] ,[3] ,[]]
[[4, 2] ,[3] ,[1]]
[[4] ,[3, 2] ,[1]]
[[4, 1] ,[3, 2] ,[]]
[[4] ,[3, 2, 1] ,[]]
[[] ,[3, 2, 1] ,[4]]
[[1] ,[3, 2] ,[4]]
[[] ,[3, 2] ,[4, 1]]
[[2] ,[3] ,[4, 1]]
[[2, 1] ,[3] ,[4]]
[[2] ,[3, 1] ,[4]]
[[] ,[3, 1] ,[4, 2]]
[[1] ,[3] ,[4, 2]]
[[] ,[3] ,[4, 2, 1]]

[[3] ,[] ,[4, 2, 1]]
[[3, 1] ,[] ,[4, 2]]
[[3] ,[1] ,[4, 2]]
[[3, 2] ,[1] ,[4]]
[[3, 2, 1] ,[] ,[4]]
[[3, 2] ,[] ,[4, 1]]
[[3] ,[2] ,[4, 1]]
[[3, 1] ,[2] ,[4]]
[[3] ,[2, 1] ,[4]]
[[] ,[2, 1] ,[4, 3]]
[[1] ,[2] ,[4, 3]]
[[] ,[2] ,[4, 3, 1]]
[[2] ,[] ,[4, 3, 1]]
[[2, 1] ,[] ,[4, 3]]
[[2] ,[1] ,[4, 3]]
[[] ,[1] ,[4, 3, 2]]
[[1] ,[] ,[4, 3, 2]]
[[] ,[] ,[4, 3, 2, 1]]