**Blind Search Comparison**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Path to goal | Length of path | # of nodes expanded |
| DFS | Missionaries | [DFS\_Missionary](#DFS_Missionary) | 9 | 10 |
| BFS | Missionaries | [BFS\_Missionary](#BFS_Missionary) | 7 | 10 |
| DFS | Farmer Fox | [DFS\_FarmerFox](#DFS_FarmerFox) | 7 | 7 |
| BFS | Farmer Fox | [BFS\_FarmerFox](#BFS_FarmerFox) | 7 | 9 |
| DFS | 4-Disk ToH | [DFS\_4-Disk ToH](#DFS_4DiskToH) | 40 | 40 |
| BFS | 4-Disk ToH | [BFS\_4-Disk ToH](#BFS_4DiskToH) | 18 | 70 |

**DFS\_FarmerFox**

Solution path:

['C', 'Fa', 'Fo', 'G'] || []

Boat is on the left.

['Fo', 'G'] || ['C', 'Fa']

Boat is on the right.

['Fa', 'Fo', 'G'] || ['C']

Boat is on the left.

['G'] || ['C', 'Fa', 'Fo']

Boat is on the right.

['C', 'Fa', 'G'] || ['Fo']

Boat is on the left.

['C'] || ['Fa', 'Fo', 'G']

Boat is on the right.

['C', 'Fa'] || ['Fo', 'G']

Boat is on the left.

[] || ['C', 'Fa', 'Fo', 'G']

Boat is on the right.

**BFS\_FarmerFox**

Solution path:

['C', 'Fa', 'Fo', 'G'] || []

Boat is on the left.

['Fo', 'G'] || ['C', 'Fa']

Boat is on the right.

['Fa', 'Fo', 'G'] || ['C']

Boat is on the left.

['Fo'] || ['C', 'Fa', 'G']

Boat is on the right.

['C', 'Fa', 'Fo'] || ['G']

Boat is on the left.

['C'] || ['Fa', 'Fo', 'G']

Boat is on the right.

['C', 'Fa'] || ['Fo', 'G']

Boat is on the left.

[] || ['C', 'Fa', 'Fo', 'G']

Boat is on the right.

Length of solution path found: 7 edges

9 states expanded.

MAX\_OPEN\_LENGTH = 2

**DFS\_Missionary**

Solution path:

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.

**BFS\_Missionary**

Solution path:

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.

**DFS\_4-Disk ToH**

Solution path:

[[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]]

**BFS\_4-Disk ToH**

Solution path:

[[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]]