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| --- | --- | --- |
|  | DFS | BFS |
| Missionaries: path | 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. | 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.  Length of solution path found: 7 edges  10 states expanded.  MAX\_OPEN\_LENGTH = 2 |
| Missionaries: length of the path | 9 edges | 7 edges |
| Missionaries: the number of nodes expanded | 10 states expanded | 10 states expanded |
|  |  |  |
| Farmer, Fox, Chicken, and Grain: path | Solution path:  Farmer is on left  Fox is on left  Chicken is on left  Grain is on left  Boat is on the left.  Farmer is on right  Fox is on left  Chicken is on right  Grain is on left  Boat is on the right.  Farmer is on left  Fox is on left  Chicken is on right  Grain is on left  Boat is on the left.  Farmer is on right  Fox is on right  Chicken is on right  Grain is on left  Boat is on the right.  Farmer is on left  Fox is on right  Chicken is on left  Grain is on left  Boat is on the left.  Farmer is on right  Fox is on right  Chicken is on left  Grain is on right  Boat is on the right.  Farmer is on left  Fox is on right  Chicken is on left  Grain is on right  Boat is on the left.  Farmer is on right  Fox is on right  Chicken is on right  Grain is on right  Boat is on the right. | Solution path:  Farmer is on left  Fox is on left  Chicken is on left  Grain is on left  Boat is on the left.  Farmer is on right  Fox is on left  Chicken is on right  Grain is on left  Boat is on the right.  Farmer is on left  Fox is on left  Chicken is on right  Grain is on left  Boat is on the left.  Farmer is on right  Fox is on left  Chicken is on right  Grain is on right  Boat is on the right.  Farmer is on left  Fox is on left  Chicken is on left  Grain is on right  Boat is on the left.  Farmer is on right  Fox is on right  Chicken is on left  Grain is on right  Boat is on the right.  Farmer is on left  Fox is on right  Chicken is on left  Grain is on right  Boat is on the left.  Farmer is on right  Fox is on right  Chicken is on right  Grain is on right  Boat is on the right. |
| Farmer, Fox, Chicken, and Grain: length of the path | 7 edges | 7 edges |
| Farmer, Fox, Chicken, and Grain: the number of nodes expanded | 7 states expanded | 9 states expanded |
|  |  |  |
| 4-Disk Towers of Hanoi: path | 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]] | 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]] |
| 4-Disk Towers of Hanoi: length of the path | 40 edges | 18 edges |
| 4-Disk Towers of Hanoi: the number of nodes expanded | 40 states expanded | 70 states expanded |