	Humans,	Humans,	Farmer,	Farmer,	4-disk	4-disk
	Robots, and	Robots, and	Fox,	Fox,	Towers of	Towers of
	Ferry DFS	Ferry BFS	Chicken,	Chicken,	Hanoi DFS	Hanoi BFS
			Grain DFS	Grain BFS		
Path	H on left:3	H on left:3	H on left:1	H on left:1	[[4, 3, 2,	[[4, 3, 2,
	R on left:3	R on left:3	F on left:1	F on left:1	1],[],[]]	1], [], [1
	H on	H on	C on left:1	C on left:1	[[4, 3,	[[4, 3,
	right:0	right:0	G on left:1	G on left:1	[], [1], [2	2] ,[1], [2]
	R on	R on	H on	H on	[[4,	[[4,
	right:0	right:0	right:0	right:0	[2], [1], [3	[2], [1], [3
	ferry is on	ferry is on	F on	F on	[[4, 3,	[[4,
	the left.	the left.	right:0	right:0	[2], [], [1	3],[],[2,
			C on	C on	[[4,	1]]
			right:0	right:0	3],[],[2,	[[4],[3],[2,
	H on left:2	H on left:2	G on	G on	1]]	1]]
	R on left:2	R on left:2	right:0	right:0	[[4] ,[3] ,[2,	[[4,
	H on	H on	boat is on	boat is on	1]]	[2], [3], [1
	right:1	right:1	the left.	the left.	[[4,	[[4, 1] ,[3,
	R on	R on			[2], [3], [1	[], [2]
	right:1	right:1			[[4] ,[3,	[[4] ,[3, 2,
	ferry is on	ferry is on	H on left:0	H on left:0	[2], [1]	[], [1]
	the right.	the right.	F on left:1	F on left:1	[[4, 2] ,[3,	[[] ,[3, 2,
			C on left:0	C on left:0	1],[]]	[4], [1]
			G on left:1	G on left:1	[[4, 2,	[[],[3,
	H on left:3	H on left:3	H on	H on	[], [3], [1	2] ,[4, 1]]
	R on left:2	R on left:2	right:1	right:1	[[4,	[[2],[3],[4,
	H on	H on	Fon	Fon	[1], [3], [2]	1]]
	right:0	right:0	right:0	right:0	[[4] ,[3,	[[2,
	R on	Ron	C on	C on	2],[1]]	[4], [3], [4]
	right:1	right:1	right:1	right:1	[[4, 1] ,[3,	[[2,
	ferry is on	ferry is on	Gon	Gon	2] ,[]]	1] ,[] ,[4,
	the left.	the left.	right:0	right:0	[[4] ,[3, 2,	3]]
			boat is on	boat is on	1],[]]	[[2] ,[1] ,[4,
			the right.	the right.	[[],[3, 2,	3]]
	H on left:0	H on left:0			[4], [4]	[[],[1],[4,
	R on left:2	R on left:2	11.5 1.65.4	11.5 1.65.4	[[1],[3,	3, 2]]
	Hon	Hon	H on left:1	H on left:1	[4], [2]	[[],[],[4, 3,
	right:3	right:3	F on left:1	F on left:1	[[],[3,	2, 1]]
	R on	R on	C on left:0	C on left:0	2] ,[4, 1]]	
	right:1	right:1	G on left:1	G on left:1	[[2],[3],[4,	
	ferry is on	ferry is on	H on	H on	1]]	
	the right.	the right.	right:0	right:0	[[2,	
			Fon	Fon	[4], [3], [1	
			right:0	right:0		

2						
	[[2] ,[3,	C on	C on	H on left:2	H on left:2	
	1],[4]]	right:1	right:1	R on left:2	R on left:2	
	[[] ,[3,	G on	G on	H on	H on	
	1] ,[4, 2]]	right:0	right:0	right:1	right:1	
3] ,[4,	[[1],[3],[4,	boat is on	boat is on	Ron	R on	
	2]]	the left.	the left.	right:1	right:1	
,[4,	[[] ,[3] ,[4,			ferry is on	ferry is on	
	2, 1]]			the left.	the left.	
,[4,	[[3] ,[] ,[4,	H on left:0	H on left:0			
	2, 1]]	F on left:0	F on left:0			
[4,	1] ,[] ,[4,	G on left:1	G on left:1	R on left:1	R on left:1	
	2]]	H on	H on	H on	H on	
L] ,[4,	[[3] ,[1] ,[4,	right:1	right:1	right:3	right:2	
	2]]	F on	F on	R on	R on	
	[[3,	right:1	right:1	right:2	right:2	
,[4]]	[[4], [1], [2	C on	C on	ferry is on	ferry is on	
	[[3, 2,	right:1	right:1	the right.	the right.	
[4]]	1],[],[4]]	G on	G on			
	[[3,	right:0	right:0			
[4,	2] ,[] ,[4,	boat is on	boat is on	H on left:1	H on left:3	
	1]]	the right.	the right.	R on left:1	R on left:1	
2] ,[4,	[[3],[2],[4,			H on	H on	
	1]]			right:2	right:0	
	[[3,	H on left:1	H on left:1	R on	R on	
,[4]]	1],[2],[4]]	F on left:0	F on left:0	right:2	right:2	
2,	[[3] ,[2,	C on left:1	C on left:1	ferry is on	ferry is on	
]	1],[4]]	G on left:1	G on left:1	the left.	the left.	
	[[] ,[2,	H on	H on			
3]]	1] ,[4, 3]]	right:0	right:0			
2] ,[4,	[[1],[2],[4,	F on	F on	H on left:0	H on left:0	
	3]]	right:1	right:1	R on left:0	R on left:1	
,[4,	[[] ,[2] ,[4,	C on	C on	H on	H on	
	3, 1]]	right:0	right:0	right:3	right:3	
,[4,	[[2] ,[] ,[4,	G on	G on	R on	R on	
	3, 1]]	right:0	right:0	right:3	right:2	
	[[2,	boat is on	boat is on	ferry is on	ferry is on	
[4,	1] ,[] ,[4,	the left.	the left.	the right	the right.	
	3]]					
L] ,[4,	[[2] ,[1] ,[4,					
	3]]	H on left:0	H on left:0		H on left:1	
,[4,	[[],[1],[4,	F on left:0	F on left:0		R on left:1	
	3, 2]]	C on left:1	C on left:1		H on	
		G on left:0	G on left:0		right:2	
1],[4, ,[4]] [4]] [4, ,[4]] [2],[4, ,[4]] [2],[4, ,[4, ,[4, ,[4, ,[4, ,[4, ,[4, ,[4,	[[3],[1],[4, 2]] [[3, 2],[1],[4]] [[3, 2, 1],[],[4]] [[3, 2],[],[4, 1]] [[3],[2],[4, 1]] [[3],[2],[4]] [[3],[2],[4]] [[3],[2, 1],[4]] [[1],[2],[4, 3]] [[1],[2],[4, 3]] [[1],[2],[4, 3]] [[2],[1],[4, 3, 1]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]] [[2],[1],[4, 3]]	right:1 F on right:1 C on right:1 G on right:0 boat is on the right. H on left:1 F on left:0 C on left:1 H on right:0 F on right:1 C on right:0 G on right:0 boat is on the left. H on left:0 C on left:1	right:1 F on right:1 C on right:1 G on right:0 boat is on the right. H on left:1 F on left:0 C on left:1 H on right:0 F on right:1 C on right:0 G on right:0 boat is on the left. H on left:0 C on left:1	right:3 R on right:2 ferry is on the right. H on left:1 R on left:1 H on right:2 R on right:2 ferry is on the left. H on left:0 R on left:0 H on right:3 R on right:3 ferry is on	right:2 R on right:2 ferry is on the right. H on left:3 R on left:1 H on right:0 R on right:2 ferry is on the left. H on left:1 H on right:3 R on left:1 H on right:3 R on right:2 ferry is on the left. H on left:1 H on right:1 H on left:1 R on left:1 H on left:1 R on left:1 H on	

	R on		H on	H on	[[1] ,[] ,[4,	
	right:2		right:1	right:1	3, 2]]	
	ferry is on		F on	F on	[[] ,[] ,[4, 3,	
	the left.		right:1	right:1	2, 1]]	
			C on	C on		
			right:0	right:0		
	H on left:0		G on	G on		
	R on left:0		right:1	right:1		
	H on		boat is on	boat is on		
	right:3		the right.	the right.		
	R on					
	right:3					
	ferry is on		H on left:1	H on left:1		
	the right		F on left:0	F on left:0		
			C on left:1	C on left:1		
			G on left:0	G on left:0		
			H on	Hon		
			right:0	right:0		
			Fon	Fon		
			right:1	right:1		
			Con	Con		
			right:0	right:0		
			G on	G on		
			right:1	right:1		
			boat is on	boat is on		
			the left.	the left.		
			the left.	the left.		
			II am laft. O	II am laft.o		
			H on left:0	H on left:0		
			F on left:0	F on left:0		
			C on left:0	C on left:0		
			G on left:0	G on left:0		
			H on	H on		
			right:1	right:1		
			Fon	Fon		
			right:1	right:1		
			C on	C on		
			right:1	right:1		
			G on	G on		
			right:1	right:1		
			boat is on	boat is on		
			the right	the right		
Length of	9	7	7	7	40	15
solution path						

Number of	10	10	7	9	40	70
states						
expanded						

- i. For the Towers of Hanoi problem, the maximum length of the open list is different from BFS which is 16, compared to DFS which is 7 in this case. The reason why BFS has usually a smaller maximum length of open list is because BFS explores all the current nodes at the level first, however, for DFS, you are exploring the deepest nodes first, so that the open list would be potentially smaller, since you would only be at max increasing the size of the open list by at most one. The worst case would be if DFS had only left node trees, which would mean that the maximum length of the open list would be increasing by one every time it increased in depth by one.
- ii. The solution path is different since BFS explores the most optimal path by finding the shortest path since all edges are unweighted in this scenario, while DFS is non-optimal.