Game Theory and Greedy Algorithms for Interview Preparation

Greedy Algorithms

All possible greedy algorithms, at each step, choose what they know is going to lead to an optimal solution for the general problem

A. True
B. False

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B. False

Which of the following are not a step in designing a greedy algorithm?

A. Cast the problem into 2 or more subproblems for which we make the best greedy choices at subsequent steps.

B. Prove that the greedy choice in each step is the only choice that leads to the optimal solution for the general problem.

C. Neither are steps in designing a greedy algorithm

D. They are both steps in designing a greedy algorithm

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✓ C. Neither are steps in designing a greedy algorithm

D. They are both steps in designing a greedy algorithm

Minimum Number of Jumps required for the frog to cross the pond?

A. 4
B. 5
C. 6
D. Not Possible

```
n = 3 (number of lily pads)
k = 5 (frog's max jump distance)
D = [2,4,3,10]
```

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Which permutation of {5,3,2,1,4} would yield the maximum value of a[i]^i. (1- based indexing)

A. {5,3,2,1,4}
B. {1,2,3,4,5}
C. {5,4,3,2,1}
D. {5,3,4,1,2}

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C. {5,4,3,2,1}
D. {5,3,4,1,2}

Minimum possible number of days?

A. 3
B. 2
C. 4
D. 1

```
n = 3
ai = 5, bi = 2
ai = 3, bi = 1
ai = 4, bi = 2
```

Minimum possible number of days?

A. 3
B. 2
C. 4
D. 1

```
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ai = 5, bi = 2
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Minimum possible number of days?

A. 3
B. 4
C. 6
D. 5

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n = 3
ai = 6, bi = 1
ai = 5, bi = 2
ai = 4, bi = 3
```

Minimum possible number of days?

A. 3
B. 4
C. 6
D. 5

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n = 3
ai = 6, bi = 1
ai = 5, bi = 2
ai = 4, bi = 3
```

Consider the following 6 activities. Maximum number of activities that can be executed?

A. 3
B. 4
C. 6
D. 5

```
start[]  =  {1, 3, 0, 5, 8, 5}
finish[] =  {2, 4, 6, 7, 9, 9}
```

Consider the following 6 activities. Maximum number of activities that can be executed?

A. 3
B. 4
C. 6
D. 5

```
start[]  =  {1, 3, 0, 5, 8, 5}
finish[] =  {2, 4, 6, 7, 9, 9}
```

Which of the following is the lexicographically smallest string? S = bba, P = 3

A. aaa
B. aab
C. bba
D. aba

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That’s all!