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Section - A

1. In an Optimal stopping problem The 37% rule is applied like , we have to reject 37% of Candidates without knowing about them and select the other Candidates.

2. No, the 37% rule does not result in success everytime, because we may have a loose if some better option.

3. when we are playing a full information game,Threshold rule can be used for optimal stopping.

2) 1. Win - Stay , Lose - shift Algorithm -> If we have a deck of cards playing with it if we choose the correct Card we win and stop it over there in same Case if we lose the Card we shift to the next Card until we win.

2. Yes, win - Stay , Lose shift is an optimal Algorithm because from this we will know where to stop and where to shift to win our progress of anything.

5) Bubble Sort :- If we have a number of elements , let's say

4382

we need to arrange this in smaller to larger number. So we pick the first element and second element Compare it if the second element is smaller than the first we sort it if not we move to 3rd element Compare with 1st element like this we sort it

2348

Merge Sort:- we have a number of elements example:

8 2 6 3

divide into 2 halves

82 63

Divide into Single element.

8 2 6 3

Look into 1st two elements Compare it and merge in smaller to larger number and same for the next 2 the elements given

8 2 6 3

2 8 3 6

Group into 2 halves and Merge it left to right and right to left.

2 8 3 6

2 3 6 8

It has Sorted into Ascending order.

6) Earliest Due date and shortest processing time. In Earliest Due date: The sum of completion time means before the due date should be completed and in shortest processing time for next clients waiting time from the due date to next date how much days (or) time the clients should wait for tasks given.

7) Overfitting:- For simpler things we make complex (or) Overthink about it go into deeper and give solutions which does not work out.

During Examination Some people used to overfit like if the topics are given for studying for examinations before exam no need to sit and study and take the burden on head instead if they start Studying from prior understanding the topics it won't be more complexity to a person to score well in exam unlike if they study just before examination they mug up things to head and wont be able to do exam well.

5)

(a) [3,1,4,1,5]

(b) Call function is given i.e nums = [3,1,4,1,5] then
for i in range means inside the loop where its given
len(nums)-1 which function as len(5) -1 then it function if num in i range is greater than num [i in + 1] then the output should result in the way num [i], num [i + 1] will
be equal to num of i in + 1 and nums i in range and print the nums.

6)
(a) items = ("a","b","c"), (1, 2, 3)

(b) The items are given as Call function i.e, items = [(2,"a"), (1,"b"), (3,"c")] it runs to next line and look the print and sort the items and give an output.

7)
(a) Scores[90]
max(scores[85])

(b) yes, The 37% Rule is implemented to find the largest element in the given list and it is implemented on line b. Because, the rule says to reject the starting 37% and it lost the maximum score in the given list.

1)

Start

↓

Give the list
of numbers — set of elements
or how much
ever you like

↓

print the
result in — 37% rule is used
2 lines

↓

End

3)

- Start

- Def Natural numbers
  give the numbers

- Call function N natural
  Number

- Calculate the Sum of first
  N natural numbers

- Print the output
  N = (Natural Numbers)

- End]