Greedy Algorithms
Class 1

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Agenda for today's class:

- What are Greedy Algorithms?
- Kadane's Algorithm
- 4 leetcode questions (Kadane's + buy/sell stock + jump game 1 and 2)
- Pair trick in Priority Queue and Set + google interview que
- Greedy on strings (lexicographically minimum/maximum) + 1 CF que
- What's next?

What are Greedy Algorithms?

- Using the best possible move available at the moment without worrying about future.
- Ex : What will you pick if you have a 1000 Rs. Note, a 100Rs Note and a 2000 Rs. Note provided you can pick only one note?
- Ex : You are given 10 liters of water in a tank and you have to fill 4 bottles that have capacity of 1 liter, 1 liter, 2 liters and 9 liters.
  - Q1 -> maximize the number of bottles used.
  - Q2 -> maximize the quantity of water with minimum bottles.

Kadane’s Algorithm

Link (Maximum sum subarray)

- Approach ->
- Code ->
- Proof of correctness ->

4 leetcode questions

- Problem 1 -> [redacted]
- Problem 2 -> [redacted]
- Problem 3 -> [redacted]
- Problem 4 -> [redacted]

Pair trick in PQ and set + google interview que

- How to convert max heap to min heap without writing comparator. (✕Don’t use in interview)

Google Interview question [Link]

- Approach ->

- Code ->

- Proof of correctness ->

What’s next?

- Next class (23/10/2022) only problem solving on greedy.
- Greedy involving ranges (job scheduling algo, etc.) to be done in next class as well.
- Greedy on strings will also be done in next class.
- Thank you ☺