Practical Test

Laxford GitLab account:

url: https://gitlab.laxford.capital/
username: interview-droobi
password: 8@5"sL427$s!

You are given 3 items having limited time to show your solution using Python as your main programming language.
Using the given GitLab account, create 3 repositories according to the given tests below.

You will have a total of 4 hours to complete this course.
If you cannot finish each item within the said time, please push your code and move on.
You have the option to finish the items that are unfinished if you still have enough time(4hrs).

Rules:

1. Use Python programming language.
2. Push your code when the time is up.
3. Writing test cases is optional but is encouraged (manage your time wisely).
4. You can use the internet for reference. In most cases, the questions are probably found within the web, try to refrain from copying solutions over the web.
5. You will be monitored remotely while conducting this test. Please login to **https://meet.google.com/onn-dpiu-ceb** using your personal Google account and share your screen for monitoring.
6. Put comments on each function/logic for easy code-readability.

1. For .5 hour(s):

Delete Nth node from the end of the given linked list

Given a linked list and an integer N, the task is to delete the Nth node from the end of the given linked list.

Examples:

Input: 2 -> 3 -> 1 -> 7 -> NULL, N = 1
Output:
Created Linked list is:
2 3 1 7
Linked List after Deletion is:
2 3 1

Input: 1 -> 2 -> 3 -> 4 -> NULL, N = 4
Output:
Created Linked list is:
1 2 3 4
Linked List after Deletion is:
2 3 4

2. For 1.5 hour(s):

Maximum profit by buying and selling a share at most k times

In share trading, a buyer buys shares and sells on a future date. Given the stock price of n days, the trader is allowed to make at most k transactions, where a new transaction can only start after the previous transaction is complete, find out the maximum profit that a share trader could have made.

Examples:

Input: Price = [10, 22, 5, 75, 65, 80] K = 2
Output: 87
Trader earns 87 as the sum of 12 and 75 Buy at price 10, sell at 22, buy at 5 and sell at 80

Input: Price = [12, 14, 17, 10, 14, 13, 12, 15] K = 3
Output: 12
Trader earns 12 as the sum of 5, 4, and 3 Buy at price 12, sell at 17, buy at 10 and sell at 14 and buy at 12 and sell at 15

Input: Price = [100, 30, 15, 10, 8, 25, 80] K = 3
Output: 72
Only one transaction. Buy at price 8 and sell at 80.

Input: Price = [90, 80, 70, 60, 50] K = 1
Output: 0
Not possible to earn.

3. For 2 hour(s):

Create a DJango Application that has the capabilities:

1. User API with JWT Authentication
    - Login
    - Logout
    - Get User details
2. StreamingHTTPResponse
    - Create a sample *.csv file having a file size of 500mb, and use this file to serve it to the client
3. Connect to a PostgreSQL server
    - Can use any - Docker, Installed PostgreSQL Server, etc..
4. Having Models and Serializers
5. Write test scripts for each endpoint