

Day17 - Feb 22nd 2024

1. Started my day by praying to god as it was thursday
2. Cooked food for all in my room
3. Marketed my profile for data engineering jobs and sent linkedin requests to data engineers on linkedin

4. Started solving DSA questions on these patterns

If input array is sorted then

- Binary search
- Two pointers

If asked for all permutations/subsets then

- Backtracking

If given a tree then

- DFS
- BFS

If given a graph then

- DFS
- BFS

If given a linked list then

- Two pointers

If recursion is banned then

- Stack

If must solve in-place then

- Swap corresponding values

Store one or more different values in the same pointer

If asked for maximum/minimum subarray/subset/options then

- Dynamic programming

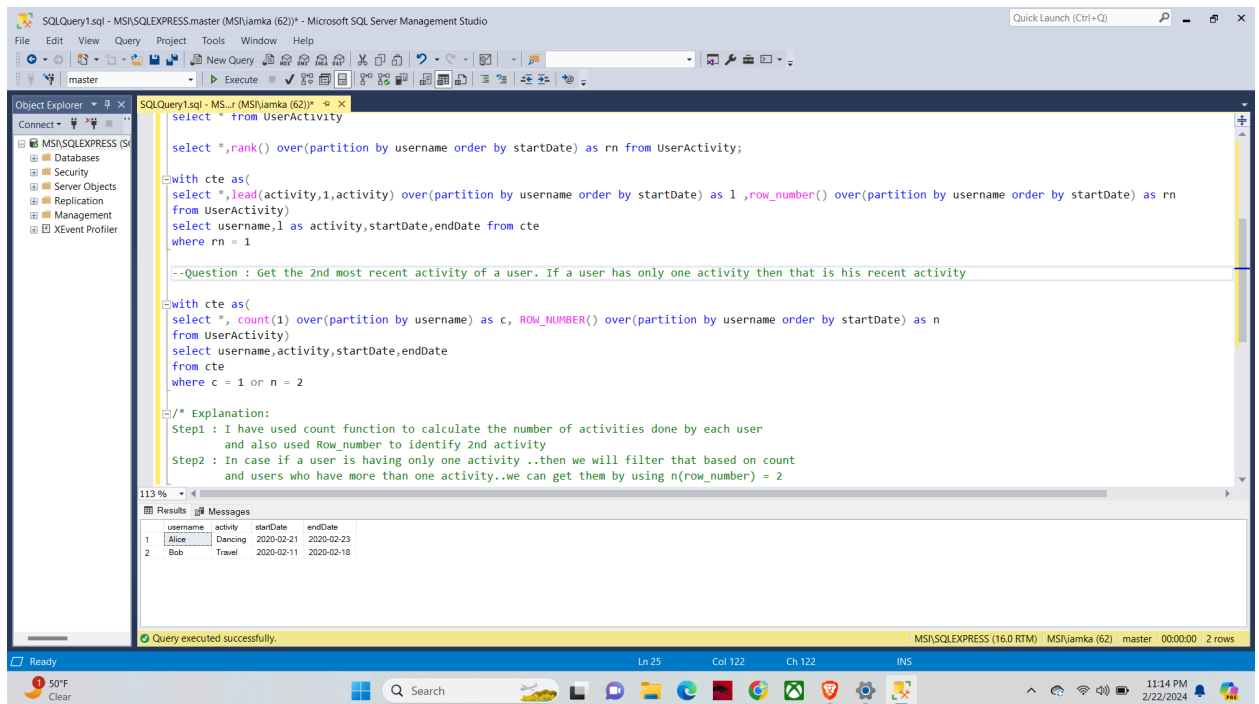
If asked for top/least K items then

- Heap
- QuickSelect

If asked for common strings then

- Map
- Trie

5. Started Binary search playlist on leetcode and solved two problems and will be consistent on leetcode from now on
6. Ended my day by solving Complex SQL question from Ankit YT channel



The screenshot shows the Microsoft SQL Server Management Studio interface. The main window displays a SQL query in the 'SQLQuery1.sql' file. The query is designed to find the 2nd most recent activity of a user, with a fallback to the most recent activity if the user has only one. The query uses window functions like `RANK()`, `ROW_NUMBER()`, and `COUNT()` over partitions by username.

```
select * from UserActivity

select *,rank() over(partition by username order by startDate) as rn from UserActivity;

with cte as(
select *,lead(activity,1,activity) over(partition by username order by startDate) as 1 ,row_number() over(partition by username order by startDate) as rn
from UserActivity)
select username,1 as activity,startDate,endDate from cte
where rn = 1

--Question : Get the 2nd most recent activity of a user. If a user has only one activity then that is his recent activity

with cte as(
select *, count(1) over(partition by username) as c, ROW_NUMBER() over(partition by username order by startDate) as n
from UserActivity)
select username,activity,startDate,endDate
from cte
where c = 1 or n = 2

/* Explanation:
Step1 : I have used count function to calculate the number of activities done by each user
and also used Row_number to identify 2nd activity
Step2 : In case if a user is having only one activity ..then we will filter that based on count
and users who have more than one activity..we can get them by using n(row_number) = 2
```

Below the query editor, the 'Results' tab shows the output of the query. It contains two rows of data:

	username	activity	startDate	endDate
1	Alice	Dancing	2020-02-21	2020-02-23
2	Bob	Travel	2020-02-11	2020-02-18

The status bar at the bottom indicates 'Query executed successfully.' and '2 rows'.