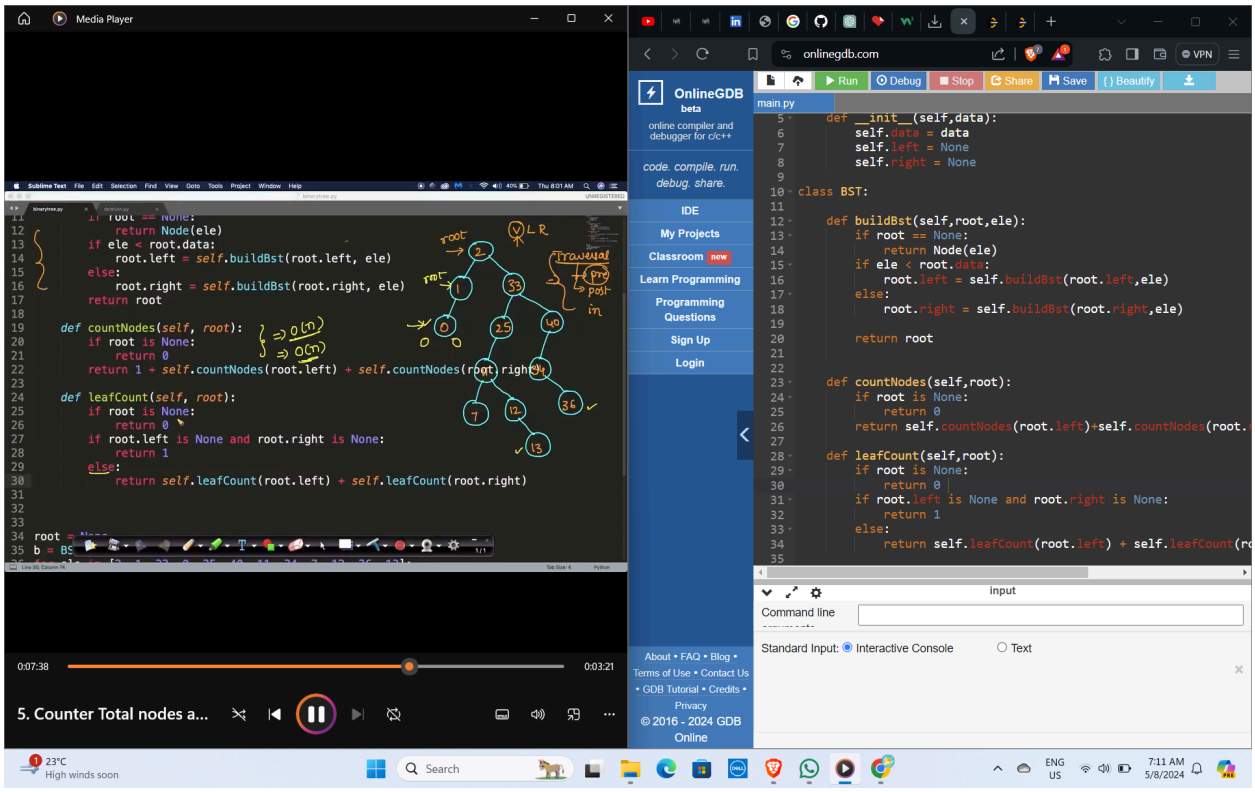
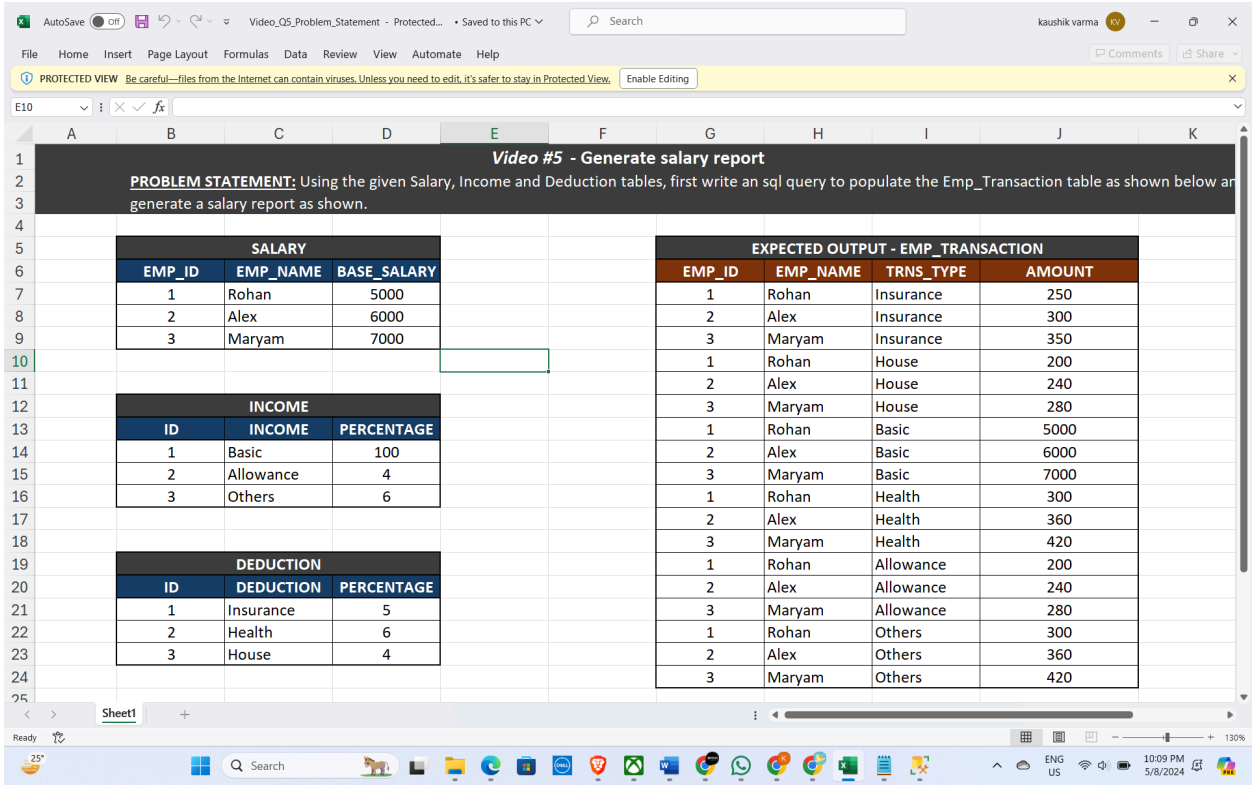
Day93 - May 8th 2024

1. Started my day as usual
2. Learning how to build binary search trees



3. Ended my day by solving a complex SQL question from TechTFQ



***Video #5* - Generate salary report**

PROBLEM STATEMENT: Using the given Salary, Income and Deduction tables, first write an sql query to populate the Emp_Transaction table as shown below ar
generate a salary report as shown.

SALARY

EMP_ID	EMP_NAME	BASE_SALARY
1	Rohan	5000
2	Alex	6000
3	Maryam	7000

INCOME

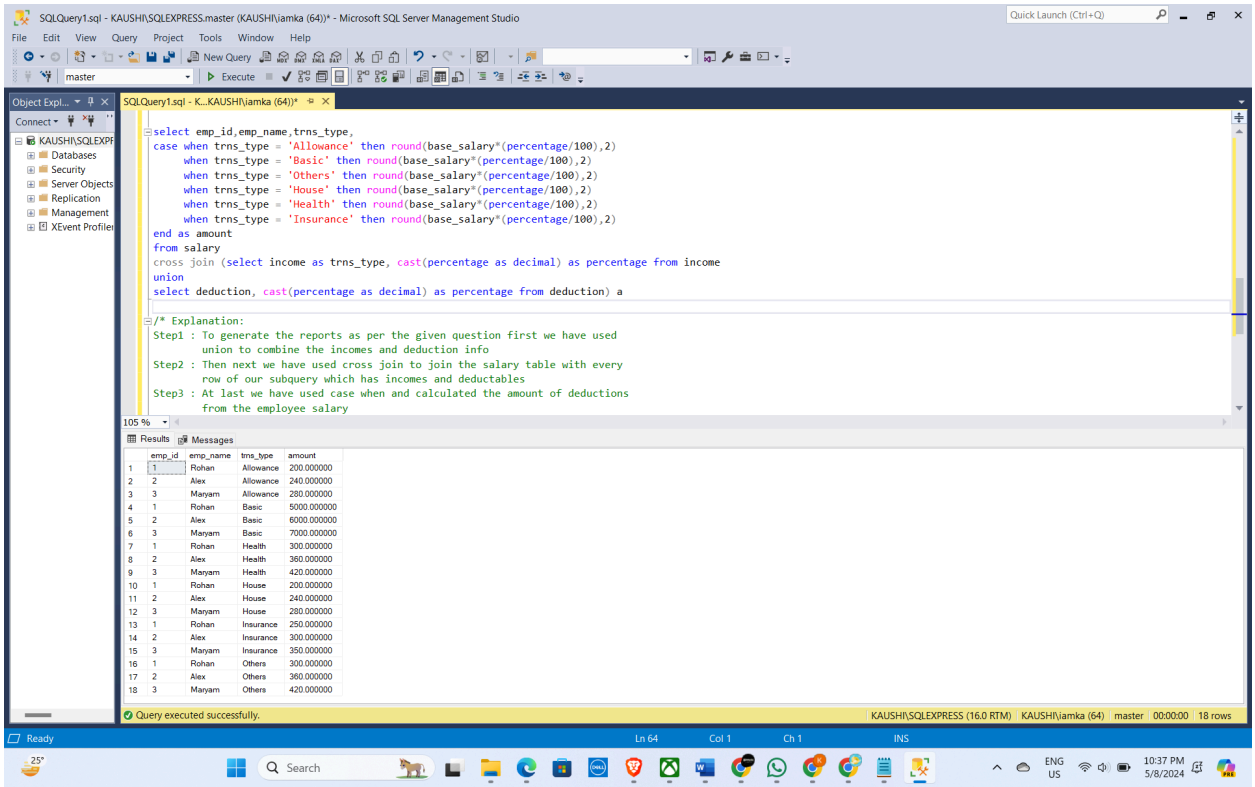
ID	INCOME	PERCENTAGE
1	Basic	100
2	Allowance	4
3	Others	6

DEDUCTION

ID	DEDUCTION	PERCENTAGE
1	Insurance	5
2	Health	6
3	House	4

EXPECTED OUTPUT - EMP_TRANSACTION

EMP_ID	EMP_NAME	TRNS_TYPE	AMOUNT
1	Rohan	Insurance	250
2	Alex	Insurance	300
3	Maryam	Insurance	350
1	Rohan	House	200
2	Alex	House	240
3	Maryam	House	280
1	Rohan	Basic	5000
2	Alex	Basic	6000
3	Maryam	Basic	7000
1	Rohan	Health	300
2	Alex	Health	360
3	Maryam	Health	420
1	Rohan	Allowance	200
2	Alex	Allowance	240
3	Maryam	Allowance	280
1	Rohan	Others	300
2	Alex	Others	360
3	Maryam	Others	420



```
select emp_id,emp_name,trns_type,
case when trns_type = 'Allowance' then round(base_salary*(percentage/100),2)
     when trns_type = 'Basic' then round(base_salary*(percentage/100),2)
     when trns_type = 'Others' then round(base_salary*(percentage/100),2)
     when trns_type = 'House' then round(base_salary*(percentage/100),2)
     when trns_type = 'Health' then round(base_salary*(percentage/100),2)
     when trns_type = 'Insurance' then round(base_salary*(percentage/100),2)
end as amount
from salary
cross join (select income as trns_type, cast(percentage as decimal) as percentage from income
union
select deduction, cast(percentage as decimal) as percentage from deduction) a

/* Explanation:
Step1 : To generate the reports as per the given question first we have used
        union to combine the incomes and deduction info
Step2 : Then next we have used cross join to join the salary table with every
        row of our subquery which has incomes and deductables
Step3 : At last we have used case when and calculated the amount of deductions
        from the employee salary
```

	emp_id	emp_name	trns_type	amount
1	1	Rohan	Allowance	200.000000
2	2	Alex	Allowance	240.000000
3	3	Maryam	Allowance	280.000000
4	1	Rohan	Basic	5000.000000
5	2	Alex	Basic	6000.000000
6	3	Maryam	Basic	7000.000000
7	1	Rohan	Health	300.000000
8	2	Alex	Health	360.000000
9	3	Maryam	Health	420.000000
10	1	Rohan	House	200.000000
11	2	Alex	House	240.000000
12	3	Maryam	House	280.000000
13	1	Rohan	Insurance	250.000000
14	2	Alex	Insurance	300.000000
15	3	Maryam	Insurance	350.000000
16	1	Rohan	Others	300.000000
17	2	Alex	Others	360.000000
18	3	Maryam	Others	420.000000