Telecom Domain SQL Project

ITV is one of the leading telecom providers in India and launched its 5G plans in May 2022 along with other telecom providers.

However, the management noticed a decline in their active users and revenue growth post 5G launch in May 2022. ITV's business director requested their analytics team to provide a comparison report of KPIs between pre and post-periods of the 5G launch. The management is keen to compare the performance between these periods and get insights that would enable them to make informed decisions to recover their active user rate and other key metrics. They also wonder if they can optimize their internet plans to get more active users. Yuzi Pandey, a junior data analyst, is assigned to this task.

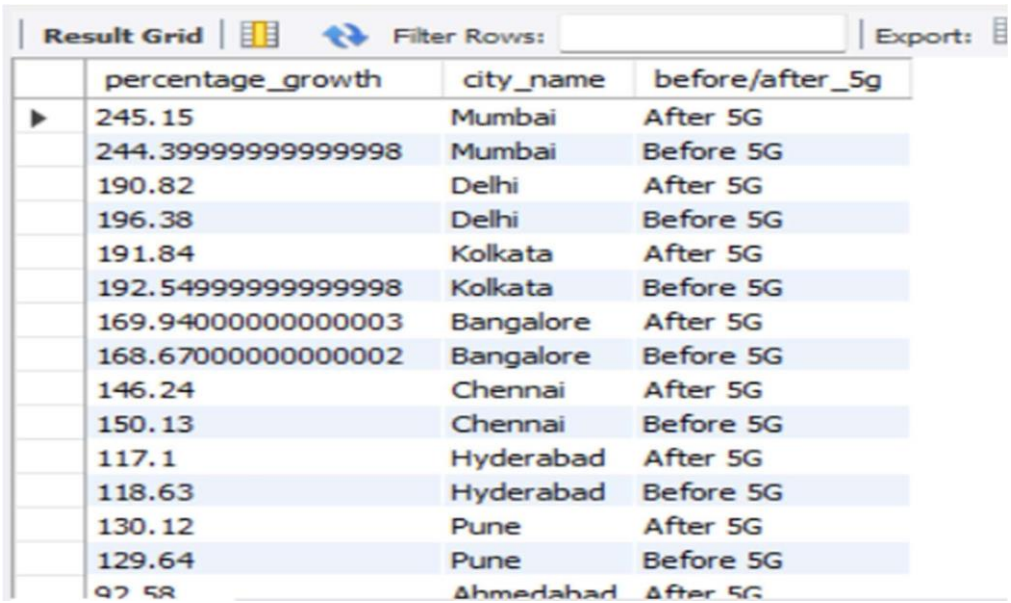
Question 1 :-

Percentage growth in revenue before and after 5g implementation for each city.

Query :-

```
SELECT sum(itv_revenue_crores) as percentage_growth,city_name,`before/after_5g`
FROM fact_itv_metrics
JOIN dim_cities
  ON fact_itv_metrics.city_code = dim_cities.city_code
   JOIN dim_date
  ON fact_itv_metrics.date = dim_date.date
 group by city_name,`before/after_5g`;
```

Output :-



Result Grid | Filter Rows: | Export:

percentage_growth	city_name	before/after_5g
245.15	Mumbai	After 5G
244.39999999999998	Mumbai	Before 5G
190.82	Delhi	After 5G
196.38	Delhi	Before 5G
191.84	Kolkata	After 5G
192.54999999999998	Kolkata	Before 5G
169.94000000000003	Bangalore	After 5G
168.67000000000002	Bangalore	Before 5G
146.24	Chennai	After 5G
150.13	Chennai	Before 5G
117.1	Hyderabad	After 5G
118.63	Hyderabad	Before 5G
130.12	Pune	After 5G
129.64	Pune	Before 5G
92.58	Ahmedabad	After 5G

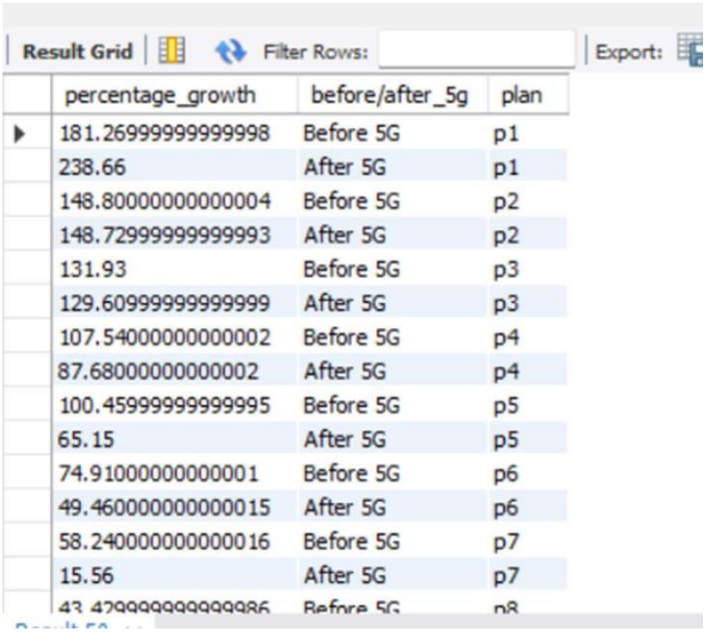
Question 2 :-

Percentage growth in revenue before and after 5g implementation for each Plan.

Query :-

```
SELECT sum(plan_revenue_crores) as percentage_growth,`before/after_5g`,dim_plan.plan
FROM fact_plan_revenue
JOIN dim_plan
  ON fact_plan_revenue.plans=dim_plan.plan
   JOIN dim_date
  ON fact_plan_revenue.date = dim_date.date
 group by plans , `before/after_5g` ;
```

Output:-



Result Grid | Filter Rows: | Export:

percentage_growth	before/after_5g	plan
181.26999999999998	Before 5G	p1
238.66	After 5G	p1
148.80000000000004	Before 5G	p2
148.72999999999993	After 5G	p2
131.93	Before 5G	p3
129.60999999999999	After 5G	p3
107.54000000000002	Before 5G	p4
87.68000000000002	After 5G	p4
100.45999999999995	Before 5G	p5
65.15	After 5G	p5
74.91000000000001	Before 5G	p6
49.460000000000015	After 5G	p6
58.240000000000016	Before 5G	p7
15.56	After 5G	p7
43.429999999999986	Before 5G	p8

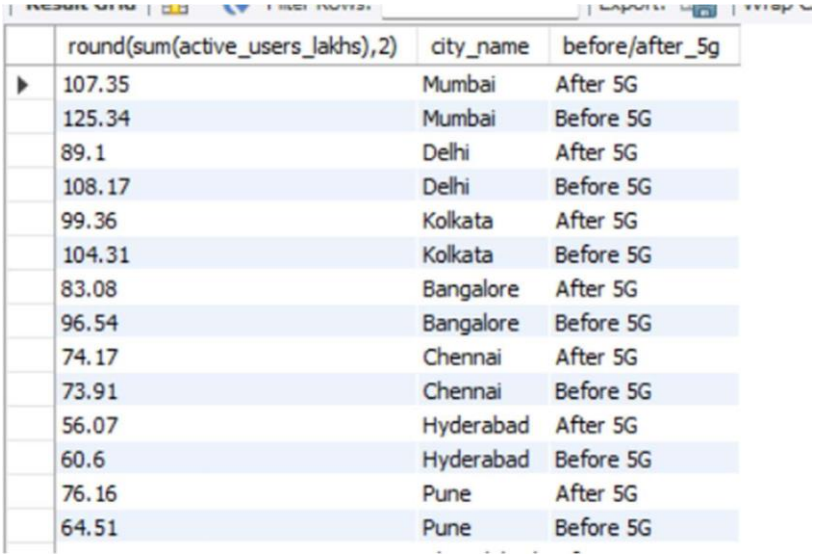
Question 3 :-

City wise active users in lakh before 5g and after 5g.

Query :-

```
select * from fact_itv_metrics;

 select round(sum(active_users_lakhs),2),city_name,          `before/after_5g`

 FROM fact_itv_metrics

JOIN dim_cities

  ON fact_itv_metrics.city_code = dim_cities.city_code

   JOIN dim_date

  ON fact_itv_metrics.date = dim_date.date

 GROUP BY city_name, `before/after_5g`;
```

Output :-



round(sum(active_users_lakhs),2)	city_name	before/after_5g
107.35	Mumbai	After 5G
125.34	Mumbai	Before 5G
89.1	Delhi	After 5G
108.17	Delhi	Before 5G
99.36	Kolkata	After 5G
104.31	Kolkata	Before 5G
83.08	Bangalore	After 5G
96.54	Bangalore	Before 5G
74.17	Chennai	After 5G
73.91	Chennai	Before 5G
56.07	Hyderabad	After 5G
60.6	Hyderabad	Before 5G
76.16	Pune	After 5G
64.51	Pune	Before 5G

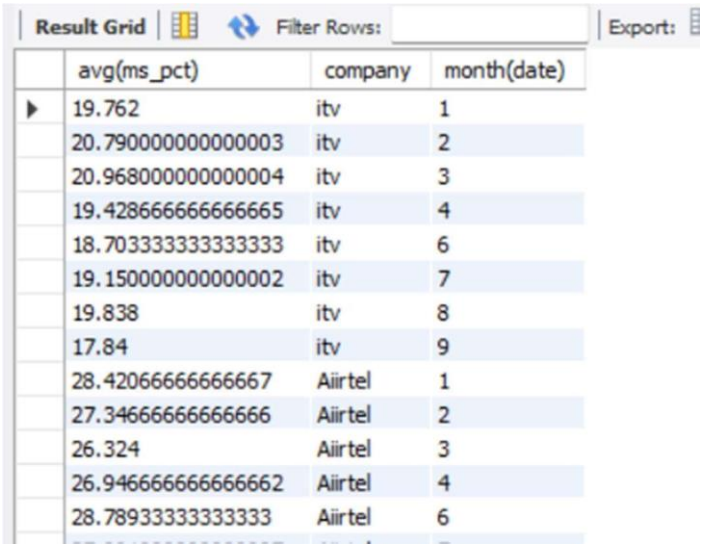
Question 4 :-

Market share over months for all companies.

Query :-

```
select * from fact_market_share ;

select avg(ms_pct),company,month(date) from fact_market_share  group by
month(date),company;


 SELECT
    dim_date.month_name,
    fact_market_share.company,
    AVG(fact_market_share.ms_pct) AS avg_market_share
FROM
    fact_market_share
JOIN
    dim_date ON fact_market_share.date = dim_date.date
GROUP BY
    dim_date.month_name, fact_market_share.company;
```

Output :-



avg(ms_pct)	company	month(date)
19.762	itv	1
20.790000000000003	itv	2
20.968000000000004	itv	3
19.428666666666665	itv	4
18.703333333333333	itv	6
19.150000000000002	itv	7
19.838	itv	8
17.84	itv	9
28.42066666666667	Aiirtel	1
27.34666666666666	Aiirtel	2
26.324	Aiirtel	3
26.946666666666662	Aiirtel	4
28.78933333333333	Aiirtel	6

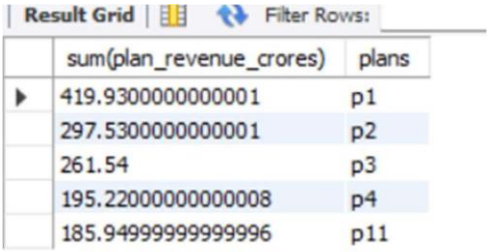
Question 5 :-

Top Plans by revenue.

Query :-

```
select* from fact_plan_revenue;

select sum(plan_revenue_crores),plans from fact_plan_revenue

group by plans

order by sum(plan_revenue_crores) desc limit 5;
```

Output :-



Result Grid | Filter Rows:

	sum(plan_revenue_crores)	plans
▶	419.9300000000001	p1
	297.5300000000001	p2
	261.54	p3
	195.22000000000008	p4
	185.94999999999996	p11

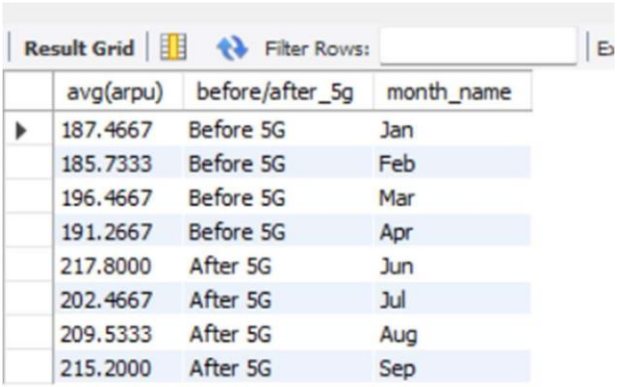
QUESTION 6 :-

Monthly trend of avg ARPU before and after 5g.

Query :-

```
select avg(arpu),`before/after_5g`, month_name
 from fact_itv_metrics join dim_date
 on fact_itv_metrics.date=dim_date.date
group by `before/after_5g`, month_name;
```

Output :-



avg(arpu)	before/after_5g	month_name
187.4667	Before 5G	Jan
185.7333	Before 5G	Feb
196.4667	Before 5G	Mar
191.2667	Before 5G	Apr
217.8000	After 5G	Jun
202.4667	After 5G	Jul
209.5333	After 5G	Aug
215.2000	After 5G	Sep

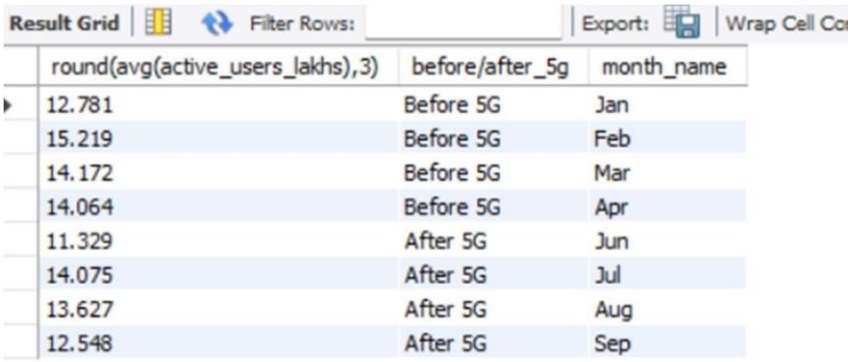
Question 7 :-

Monthly trend of avg active users before and after 5g.

Query :-

```
select round(avg(active_users_lakhs),3), `before/after_5g` , month_name
 from fact_itv_metrics join dim_date
 on fact_itv_metrics.date=dim_date.date
group by `before/after_5g` ,month_name;
```

Output :-



Result Grid | Filter Rows: | Export: | Wrap Cell Co

round(avg(active_users_lakhs),3)	before/after_5g	month_name
12.781	Before 5G	Jan
15.219	Before 5G	Feb
14.172	Before 5G	Mar
14.064	Before 5G	Apr
11.329	After 5G	Jun
14.075	After 5G	Jul
13.627	After 5G	Aug
12.548	After 5G	Sep

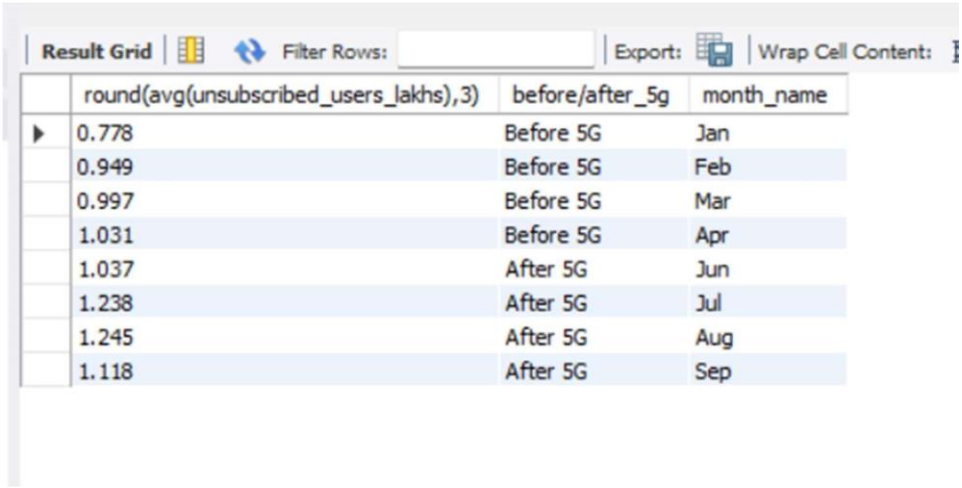
Question 8 :-

Monthly trend of unsubscribed users before 5g and after 5g.

Query :-

```
select round(avg(unsubscribed_users_lakhs),3),`before/after_5g`, month_name
 from fact_itv_metrics join dim_date
on fact_itv_metrics.date=dim_date.date
group by `before/after_5g`, month_name;
```

Output :-



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

round(avg(unsubscribed_users_lakhs),3)	before/after_5g	month_name
0.778	Before 5G	Jan
0.949	Before 5G	Feb
0.997	Before 5G	Mar
1.031	Before 5G	Apr
1.037	After 5G	Jun
1.238	After 5G	Jul
1.245	After 5G	Aug
1.118	After 5G	Sep

Measures

1 total revenue

select sum(itv_revenue_crores) as total_revenue from fact_itv_metrics;

total_revenue
3187.3599999999997

2. Avg Revenue

select avg(itv_revenue_crores) as average_revenue from fact_itv_metrics;

average_revenue
26.56133333333333

3. Average Revenue Per User

select avg(arpu) as average_revenue_per_user from fact_itv_metrics;

average_revenue_per_user
200.7417

4. Total Active Users

select count(active_users_lakhs) as total_active_users from fact_itv_metrics;

total_active_users
120

5. Total Unsubscribed Users

select sum(unsubscribed_users_lakhs) as total_unsubscribed_users from fact_itv_metrics;

total_unsubscribed_users
125.89999999999999

select distinct(count(unsubscribed_users_lakhs)) as total_unsubscribed_users from fact_itv_metrics;

total_unsubscribed_users
120

6. Monthly active users

```
SELECT  avg(monthly_total) AS average_active_users_per_month FROM (
SELECT DATE_FORMAT(date, '%Y-%m') AS month, SUM(active_users_lakhs) AS monthly_total
FROM fact_itv_metrics GROUP BY month
) AS monthly_data;
```

	average_active_users_per_month
▶	1617.2299999999998

7. Market Share %

```
select avg(ms_pct) as market_share_percent from fact_market_share;
```

	market_share_percent
▶	20.000050000000027

8. Revenue Before 5G

```
SELECT sum(fact_itv_metrics.itv_revenue_crores) AS "Total Revenue for all periods before 5G"
FROM fact_itv_metrics JOIN dim_date ON fact_itv_metrics.date = dim_date.date
WHERE TRIM(LOWER(dim_date.`before/after_5g`)) = 'before 5g';
```

	Total Revenue for all periods before 5G
▶	12749.440000000024

9. Revenue After 5G

```
SELECT SUM(fact_itv_metrics.itv_revenue_crores) AS "Total Revenue for all periods after 5G"
FROM fact_itv_metrics JOIN dim_date ON fact_itv_metrics.date = dim_date.date
WHERE TRIM(LOWER(dim_date.`before/after_5g`)) = 'after 5g';
```

	Total Revenue for all periods after 5G
▶	12749.440000000024

10. ARPU Before 5G

```
SELECT AVG(fact_itv_metrics.arpu) AS "ARPU Before 5G"
FROM fact_itv_metrics JOIN dim_date ON fact_itv_metrics.date = dim_date.date
WHERE TRIM(LOWER(dim_date.`before/after_5g`)) = 'before 5g';
```

ARPU Before 5G
200.7417

11. ARPU After 5G

```
SELECT avg(fact_itv_metrics.arpu) AS "ARPU After 5G"
FROM fact_itv_metrics JOIN dim_date ON fact_itv_metrics.date = dim_date.date
WHERE TRIM(LOWER(dim_date.`before/after_5g`)) = 'after 5g';
```

ARPU After 5G
200.7417

12. Active Users Before 5G

```
SELECT AVG(fact_itv_metrics.active_users_lakhs) AS "Active users Before 5G"
FROM fact_itv_metrics JOIN dim_date ON fact_itv_metrics.date = dim_date.date
WHERE TRIM(LOWER(dim_date.`before/after_5g`)) = 'before 5g';
```

Active users Before 5G
13.476916666666657

13. Active Users After 5G

```
SELECT AVG(fact_itv_metrics.active_users_lakhs) AS "Active users after 5G"
FROM fact_itv_metrics JOIN dim_date ON fact_itv_metrics.date = dim_date.date
WHERE TRIM(LOWER(dim_date.`before/after_5g`)) = 'after 5g';
```

Active users after 5G
13.476916666666657