Hospital Data Analysis

Q1. Total Number of Patients?

```
SELECT SUM(patients_count) AS total_patients
FROM Hospital;
```

Business Problem Solved: Hospital management lacks visibility on the total number of patients treated,making resource planning and decision-making difficult.

Business Impact: Knowing the total patients helps allocate staff, beds, and budget more effectively while improving revenue forecasting.

Q2. Average Number of Doctors per Hospital?

```
SELECT hospital_name,
        ROUND(AVG(doctors_count)) AS avg_doctors
FROM Hospital
GROUP BY hospital_name;
```

Business Problem Solved: Lack of clarity on average doctors per hospital causes imbalance in workload.

Business Impact: Helps optimize staff distribution and improve patient care.

Q3. Top 3 Departments with the Highest Number of Patients?

```
SELECT hospital_name,
        SUM(patients_count) AS Total_patients
        FROM Hospital
GROUP BY hospital_name
ORDER BY Total_patients DESC
LIMIT 3;
```

Business Problem Solved: Management doesn't know which departments treat the most patients, making it hard to focus resources.

Business Impact: Identifying top 3 departments helps in resource allocation, capacity planning, and improving patient services.

Q4. Hospital with the Maximum Medical Expenses?

```
SELECT hospital_name,
        SUM(medical_expenses) AS Total_expenses
        FROM Hospital
GROUP BY hospital_name
ORDER BY Total_expenses DESC
LIMIT 1;
```

Business Problem Solved: Management is unaware of which hospital incurs the highest medical expenses, leading to poor cost control.

Business Impact: Finding the hospital with maximum expenses enables better budget planning, cost optimization, and financial efficiency.

Q5. Daily Average Medical Expenses?

```
SELECT hospital_name,
    ROUND(AVG(daily_expense)) AS avg_expense_per_day
FROM (
   SELECT hospital_name,
        admission_date,
        SUM(medical_expenses) AS daily_expense
   FROM hospital
   GROUP BY hospital_name, admission_date
)
GROUP BY hospital_name
ORDER BY avg_expense_per_day DESC;
```

Business Problem Solved: Hospitals lack visibility on daily average medical expenses, making financial tracking difficult.

Business Impact: Helps monitor spending patterns, control costs, and improve budget management.

Q6. Longest Hospital Stay?

```
SELECT hospital_name,
    admission_date,
    discharge_date,
    (discharge_date - admission_date) AS stay_days
FROM hospital
ORDER BY stay_days DESC
LIMIT 1;
```

Business Problem Solved: Hospitals don't know which patient had the longest stay, causing challenges in bed management and capacity planning.

Business Impact: Identifying the longest stay improves resource utilization, patient flow, and operational efficiency.

Q7. Total Patients Treated Per City?

```
SELECT location,
            SUM(patients_count) AS patients_treated
            FROM Hospital
            GROUP BY location
            ORDER BY patients_treated DESC;
```

Business Problem Solved: Management doesn't know how many patients are treated in each city, limiting regional performance insights.

Business Impact: City-wise patient count helps in resource planning, branch expansion, and targeted healthcare services.

Q8. Average Length of Stay Per Department?

```
SELECT department,
    (discharge_date - admission_date) AS stay_days
FROM hospital
ORDER BY stay_days DESC;
```

Business Problem Solved: Hospitals lack insights on the average patient stay per department, making it hard to manage capacity.

Business Impact: Knowing average stay per department improves bed utilization, staffing, and overall efficiency.

Q9. Identify the Department with the Lowest Number of Patients?

```
SELECT department,
        SUM(patients_count) AS Total_patients
        FROM Hospital
GROUP BY department
ORDER BY Total_patients ASC
LIMIT 1;
```

Business Problem Solved: Management is unaware of which department has the lowest patient count, leading to underutilized resources.

Business Impact: Identifying the least visited department helps optimize resources and improve departmental performance.

Q10. Monthly Medical Expenses Report?

METHOD-1

```
SELECT DATE_TRUNC('month', admission_date) AS month,
    SUM(medical_expenses) AS total_expense
FROM hospital
GROUP BY DATE_TRUNC('month', admission_date)
ORDER BY month;
```

METHOD-2

```
SELECT TO_CHAR(admission_date, 'Month YYYY') AS month_name,
    SUM(medical_expenses) AS total_expense
FROM hospital
GROUP BY TO_CHAR(admission_date, 'Month YYYY')
ORDER BY MIN(admission_date) DESC;
```

Business Problem Solved: Hospitals lack clear visibility of monthly medical expenses, making it hard to track spending trends.

Business Impact: A monthly expenses report supports cost control, budget planning, and financial transparency.

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