**INSIGHT QUERIES**

1. **Average Length of Stays**

*SELECT*

*AVG((Date\_of\_Disch - Date\_Admit)) AS Average\_Length\_of\_Stay*

*FROM*

*Admission*

*WHERE*

*Date\_of\_Disch IS NOT NULL;*

**OUTPUT :- 7.3**

1. **No of Admission in Each Quarter**

*SELECT*

*TO\_CHAR(Date\_Admit, 'Q') AS Quarter,*

|  |  |
| --- | --- |
| QUARTER | NUMBER\_OF\_ADMISSIONS |
| 1 | 3 |
| 2 | 3 |
| 3 | 2 |
| 4 | 2 |

*COUNT(\*) AS Number\_of\_Admissions*

*FROM*

*Admission*

*GROUP BY*

*TO\_CHAR(Date\_Admit, 'Q')*

*ORDER BY*

*Quarter;*

1. **Average ADMISSION RATE AND READMISSION RATE IN EACH QUARTER**

*WITH AdmissionCounts AS (*

*SELECT*

*TO\_CHAR(Date\_Admit, 'Q') AS Quarter,*

*COUNT(\*) AS Total\_Admissions*

*FROM*

*Admission*

*GROUP BY*

*TO\_CHAR(Date\_Admit, 'Q')*

*),*

*ReadmissionCounts AS (*

*SELECT*

*TO\_CHAR(Date\_Admit, 'Q') AS Quarter,*

*COUNT(\*) AS Total\_Readmissions*

*FROM*

*Admission*

*WHERE*

*Readmission = 'Y'*

*GROUP BY*

*TO\_CHAR(Date\_Admit, 'Q')*

*)*

*SELECT*

*ac.Quarter,*

*AVG(ac.Total\_Admissions) AS Average\_Admissions,*

*AVG(rc.Total\_Readmissions) AS Average\_Readmissions*

*FROM*

*AdmissionCounts ac*

*LEFT JOIN*

*ReadmissionCounts rc ON ac.Quarter = rc.Quarter*

*GROUP BY*

*ac.Quarter*

*ORDER BY*

*ac.Quarter;*

|  |  |  |
| --- | --- | --- |
| QUARTER | AVERAGE\_ADMISSIONS | AVERAGE\_READMISSIONS |
| 1 | 3 | 2 |
| 2 | 3 | 1 |
| 3 | 2 | 1 |
| 4 | 2 | 1 |

**OVERALL Average RETURN RATE - 50**

1. **Average treatment cost according to age group**

*SELECT*

*CASE*

*WHEN Age < 18 THEN 'Under 18'*

*WHEN Age BETWEEN 18 AND 29 THEN '18-29'*

*WHEN Age BETWEEN 30 AND 39 THEN '30-39'*

*WHEN Age BETWEEN 40 AND 49 THEN '40-49'*

*WHEN Age BETWEEN 50 AND 59 THEN '50-59'*

*WHEN Age >= 60 THEN '60 and above'*

*END AS Age\_Group,*

*AVG(Cost\_of\_care) AS Average\_Treatment\_Cost*

*FROM*

*Admission a*

*JOIN*

*Dim\_Patient p ON a.Patient\_Id = p.Patient\_Id*

*GROUP BY*

*CASE*

*WHEN Age < 18 THEN 'Under 18'*

*WHEN Age BETWEEN 18 AND 29 THEN '18-29'*

*WHEN Age BETWEEN 30 AND 39 THEN '30-39'*

*WHEN Age BETWEEN 40 AND 49 THEN '40-49'*

*WHEN Age BETWEEN 50 AND 59 THEN '50-59'*

*WHEN Age >= 60 THEN '60 and above'*

*END*

*ORDER BY*

*MIN(Age);*

|  |  |
| --- | --- |
| AGE\_GROUP | AVERAGE\_TREATMENT\_COST |
| 18-29 | 7390 |
| 30-39 | 6800 |
| 40-49 | 7373.33 |
| 50-59 | 5400 |
| 60 and above | 10000 |

1. **Average Treatment Cost Overall**

|  |
| --- |
| AVERAGE\_TREATMENT\_COST |
| 7130 |

*SELECT*

*AVG(Cost\_of\_care) AS Average\_Treatment\_Cost*

*FROM*

*Admission;*

1. **Percentage of Stays according to types of pays**

*SELECT*

*dp.Payer\_Type,*

*COUNT(\*) AS Number\_of\_Stays,*

*ROUND(COUNT(\*) \* 100.0 / (SELECT COUNT(\*) FROM Admission), 2) AS Percentage\_of\_Stays*

*FROM*

*Admission a*

*JOIN*

*Dim\_Payer dp ON a.Payer\_type\_Id = dp.Payer\_type\_Id*

*GROUP BY*

*dp.Payer\_Type;*

|  |  |  |
| --- | --- | --- |
| PAYER\_TYPE | NUMBER\_OF\_STAYS | PERCENTAGE\_OF\_STAYS |
| Self-pay | 4 | 20 |
| Private insurance | 12 | 60 |
| Uninsured | 8 | 40 |
| Medicaid | 8 | 40 |
| Medicare | 8 | 40 |

1. **percentage of cost borne by each type of payer out of the total cost in each type of stay**

*SELECT*

*dp.Payer\_Type,*

*a.Type\_of\_stay,*

*SUM(a.Cost\_of\_care) AS Total\_Cost,*

*ROUND(SUM(CASE WHEN a.Payer\_type\_Id = dp.Payer\_type\_Id THEN a.Cost\_of\_care ELSE 0 END) \* 100.0 / SUM(a.Cost\_of\_care), 2) AS Percentage\_of\_Cost*

*FROM*

*Admission a*

*JOIN*

*Dim\_Payer dp ON a.Payer\_type\_Id = dp.Payer\_type\_Id*

*GROUP BY*

*dp.Payer\_Type, a.Type\_of\_stay;*

|  |  |  |  |
| --- | --- | --- | --- |
| PAYER\_TYPE | TYPE\_OF\_STAY | TOTAL\_COST | PERCENTAGE\_OF\_COST |
| Medicaid | Surgical | 24000 | 100 |
| Medicare | Maternal | 40000 | 100 |
| Self-pay | Surgical | 36000 | 100 |
| Medicare | Surgical | 23120 | 100 |
| Uninsured | Surgical | 16000 | 100 |
| Medicaid | Maternal | 30400 | 100 |
| Private insurance | Medical | 34880 | 100 |
| Private insurance | Maternal | 55200 | 100 |
| Uninsured | Maternal | 25600 | 100 |

1. **Staffs is to patient ratio**

*SELECT*

*sns.Staff\_type,*

*COUNT(\*) AS Total\_Staff,*

*(SELECT COUNT(DISTINCT Patient\_Id) FROM Admission) AS Total\_Patients,*

*ROUND(COUNT(\*) \* 1.0 / NULLIF((SELECT COUNT(DISTINCT Patient\_Id) FROM Admission), 0), 2) AS Staff\_to\_Patient\_Ratio*

*FROM*

*SubDim\_Nursing\_staffs sns*

*GROUP BY*

*sns.Staff\_type;*

|  |  |  |  |
| --- | --- | --- | --- |
| STAFF\_TYPE | TOTAL\_STAFF | TOTAL\_PATIENTS | STAFF\_TO\_PATIENT\_RATIO |
| Doctor | 3 | 10 | .3 |
| Nurse | 9 | 10 | .9 |
| Jr.Surgeon | 2 | 10 | .2 |
| Surgeon | 2 | 10 | .2 |

1. **ratio of each staffs is to patients in each nursing unit**

*SELECT*

*nu.Nursing\_unit\_name,*

*sns.Staff\_type,*

*COUNT(sns.Nursing\_staff\_Id) AS Number\_of\_Staff,*

*COUNT(DISTINCT a.Patient\_Id) AS Number\_of\_Patients,*

*ROUND(COUNT(sns.Nursing\_staff\_Id) / NULLIF(COUNT(DISTINCT a.Patient\_Id), 0), 2) AS Staff\_to\_Patient\_Ratio*

*FROM*

*SubDim\_Nursing\_staffs sns*

*JOIN*

*Admission a ON sns.Nursing\_unit\_Id = a.Nursing\_unit\_Id*

*JOIN*

*Dim\_Nursing\_unit nu ON sns.Nursing\_unit\_Id = nu.Nursing\_unit\_Id*

*GROUP BY*

*nu.Nursing\_unit\_name, sns.Staff\_type;*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NURSING\_UNIT\_NAME | STAFF\_TYPE | NUMBER\_OF\_STAFF | NUMBER\_OF\_PATIENTS | STAFF\_TO\_PATIENT\_RATIO |
| Surgical\_unit | Surgeon | 1 | 3 | .33 |
| Emergency\_unit | Nurse | 1 | 1 | 1 |
| Recovery\_unit | Nurse | 3 | 1 | 3 |
| Surgical\_unit | Jr.Surgeon | 1 | 3 | .33 |
| Nursery\_unit | Nurse | 4 | 5 | .80 |
| Nursery\_unit | Doctor | 3 | 5 | .60 |
| Surgical\_unit | Nurse | 1 | 3 | .33 |
| Emergency\_unit | Jr.Surgeon | 1 | 1 | 1 |
| Emergency\_unit | Surgeon | 1 | 1 | 1 |

1. **Total No of incident came**

*SELECT*

*di.Incident\_name,*

*COUNT(\*) AS Number\_of\_Occurrences*

*FROM*

*Admission a*

*JOIN*

*Dim\_Incident di ON a.Incident\_Id = di.Incident\_Id*

*GROUP BY*

*di.Incident\_name*

*ORDER BY*

*di.Incident\_name;*

|  |  |
| --- | --- |
| INCIDENT\_NAME | NUMBER\_OF\_OCCURRENCES |
| Delivery | 3 |
| Food\_poisoning | 1 |
| Heart\_attack | 1 |
| Liver\_failure | 3 |
| Preterm\_labor | 2 |

1. **No of total no of incidents in each quarter**

*SELECT*

*TO\_CHAR(a.Date\_Admit, 'YYYY-Q') AS Quarter,*

*di.Incident\_name,*

*COUNT(\*) AS Number\_of\_Occurrences*

*FROM*

*Admission a*

*JOIN*

*Dim\_Incident di ON a.Incident\_Id = di.Incident\_Id*

*GROUP BY*

*TO\_CHAR(a.Date\_Admit, 'YYYY-Q'), di.Incident\_name*

*ORDER BY*

*Quarter, di.Incident\_name;*

|  |  |  |
| --- | --- | --- |
| QUARTER | INCIDENT\_NAME | NUMBER\_OF\_OCCURRENCES |
| 2023-1 | Delivery | 1 |
| 2023-2 | Liver\_failure | 1 |
| 2023-2 | Preterm\_labor | 1 |
| 2023-3 | Liver\_failure | 1 |
| 2023-3 | Preterm\_labor | 1 |
| 2023-4 | Delivery | 1 |
| 2023-4 | Heart\_attack | 1 |
| 2024-1 | Delivery | 1 |
| 2024-1 | Food\_poisoning | 1 |
| 2024-2 | Liver\_failure | 1 |

**Extra**

1. **Length of stay of each patient**

*SELECT*

*a.Patient\_Id,*

*p.Name AS Patient\_Name,*

*a.Date\_Admit,*

*a.Date\_of\_Disch,*

*(a.Date\_of\_Disch - a.Date\_Admit) AS Length\_of\_Stay*

*FROM*

*Admission a*

*JOIN*

*Dim\_Patient p ON a.Patient\_Id = p.Patient\_Id;*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PATIENT\_ID | PATIENT\_NAME | DATE\_ADMIT | DATE\_OF\_DISCH | LENGTH\_OF\_STAY |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 |
| PT8 | Neymar Jr. | 20-JUN-23 | 25-JUN-23 | 5 |
| PT9 | Charlotte Flair | 15-JAN-24 | 25-JAN-24 | 10 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 |

1. **Gender Distribution**

|  |  |
| --- | --- |
| GENDER | NUMBER\_OF\_PATIENTS |
| M | 4 |
| F | 6 |

*SELECT*

*Gender,*

*COUNT(\*) AS Number\_of\_Patients*

*FROM*

*Dim\_Patient*

*GROUP BY*

*Gender;*

1. **Incidents with the longest average length of stay.**

*SELECT*

*di.Incident\_name,*

*AVG((MONTHS\_BETWEEN(a.Date\_of\_Disch, a.Date\_Admit)) \* 30) AS Average\_Length\_of\_Stay*

*FROM*

*Admission a*

*JOIN*

*Dim\_Incident di ON a.Incident\_Id = di.Incident\_Id*

*GROUP BY*

*di.Incident\_name*

*ORDER BY*

*Average\_Length\_of\_Stay DESC;*

|  |  |
| --- | --- |
| INCIDENT\_NAME | AVERAGE\_LENGTH\_OF\_STAY |
| Food\_poisoning | 9.67 |
| Heart\_attack | 8.70 |
| Liver\_failure | 7.74 |
| Delivery | 6.77 |
| Preterm\_labor | 4.83 |

1. **No of Each staffs in each unit**

*SELECT*

*nu.Nursing\_unit\_name,*

*sns.Staff\_type,*

*COUNT(\*) AS Number\_of\_Staffs*

*FROM*

*SubDim\_Nursing\_staffs sns*

*JOIN*

*Dim\_Nursing\_unit nu ON sns.Nursing\_unit\_Id = nu.Nursing\_unit\_Id*

*GROUP BY*

*nu.Nursing\_unit\_name, sns.Staff\_type*

*ORDER BY*

*nu.Nursing\_unit\_name, sns.Staff\_type;*

|  |  |  |
| --- | --- | --- |
| NURSING\_UNIT\_NAME | STAFF\_TYPE | NUMBER\_OF\_STAFFS |
| Emergency\_unit | Jr.Surgeon | 1 |
| Emergency\_unit | Nurse | 1 |
| Emergency\_unit | Surgeon | 1 |
| Nursery\_unit | Doctor | 3 |
| Nursery\_unit | Nurse | 4 |
| Recovery\_unit | Nurse | 3 |
| Surgical\_unit | Jr.Surgeon | 1 |
| Surgical\_unit | Nurse | 1 |
| Surgical\_unit | Surgeon | 1 |

1. **No of patient in each nursing unit**

*SELECT*

*nu.Nursing\_unit\_name,*

*COUNT(DISTINCT a.Patient\_Id) AS Number\_of\_Patients*

*FROM*

*Admission a*

*JOIN*

*Dim\_Nursing\_unit nu ON a.Nursing\_unit\_Id = nu.Nursing\_unit\_Id*

*GROUP BY*

*nu.Nursing\_unit\_name*

*ORDER BY*

*nu.Nursing\_unit\_name;*

|  |  |
| --- | --- |
| NURSING\_UNIT\_NAME | NUMBER\_OF\_PATIENTS |
| Emergency\_unit | 1 |
| Nursery\_unit | 5 |
| Recovery\_unit | 1 |
| Surgical\_unit | 3 |

**PARTION BY**

1. **Partition by in Length of stay of each patient**

*SELECT*

*a.Patient\_Id,*

*p.Name AS Patient\_Name,*

*a.Date\_Admit,*

*a.Date\_of\_Disch,*

*(a.Date\_of\_Disch - a.Date\_Admit) AS Length\_of\_Stay,*

*ROW\_NUMBER() OVER(PARTITION BY a.Patient\_Id ORDER BY a.Date\_Admit) AS partition\_num*

*FROM*

*Admission a*

*JOIN*

*Dim\_Patient p ON a.Patient\_Id = p.Patient\_Id;*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PATIENT\_ID | PATIENT\_NAME | DATE\_ADMIT | DATE\_OF\_DISCH | LENGTH\_OF\_STAY | PARTITION\_NUM |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 | 1 |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 | 2 |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 | 3 |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 | 4 |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 | 5 |
| PT1 | Taylor Swift | 08-AUG-23 | 15-AUG-23 | 7 | 6 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 | 1 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 | 2 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 | 3 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 | 4 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 | 5 |
| PT10 | Brandi Johnson | 08-MAR-24 | 16-MAR-24 | 8 | 6 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 | 1 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 | 2 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 | 3 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 | 4 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 | 5 |
| PT2 | Oliver Giroud | 17-SEP-23 | 25-SEP-23 | 8 | 6 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 | 1 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 | 2 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 | 3 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 | 4 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 | 5 |
| PT3 | Emma Watson | 29-OCT-23 | 03-NOV-23 | 5 | 6 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 | 1 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 | 2 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 | 3 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 | 4 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 | 5 |
| PT4 | Lionel Messi | 03-DEC-23 | 12-DEC-23 | 9 | 6 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 | 1 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 | 2 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 | 3 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 | 4 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 | 5 |
| PT5 | Cristiano Ronaldo | 22-APR-24 | 02-MAY-24 | 10 | 6 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 | 1 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 | 2 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 | 3 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 | 4 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 | 5 |
| PT6 | Shakira | 12-MAR-23 | 20-MAR-23 | 8 | 6 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 | 1 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 | 2 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 | 3 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 | 4 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 | 5 |
| PT7 | Amelia Richardson | 05-MAY-23 | 08-MAY-23 | 3 | 6 |
| PT8 | Neymar Jr. | 20-JUN-23 | 25-JUN-23 | 5 | 1 |
| PT8 | Neymar Jr. | 20-JUN-23 | 25-JUN-23 | 5 | 2 |

1. **No of admission in each quarter**

*SELECT*

*TO\_CHAR(Date\_Admit, 'Q') AS Quarter,*

*COUNT(\*) AS Number\_of\_Admissions,*

*ROW\_NUMBER() OVER(PARTITION BY TO\_CHAR(Date\_Admit, 'Q') ORDER BY COUNT(\*)) AS partition\_num*

*FROM*

*Admission*

*GROUP BY*

*TO\_CHAR(Date\_Admit, 'Q')*

*ORDER BY*

*Quarter;*

|  |  |  |
| --- | --- | --- |
| QUARTER | NUMBER\_OF\_ADMISSIONS | PARTITION\_NUM |
| 1 | 3 | 1 |
| 2 | 3 | 1 |
| 3 | 2 | 1 |
| 4 | 2 | 1 |

**BUCKETING**

1. **Track the no of patient based on each day**

*SELECT*

|  |  |
| --- | --- |
| ADMISSION\_DATE | PATIENTS\_COUNT |
| 12-MAR-23 | 1 |
| 05-MAY-23 | 1 |
| 20-JUN-23 | 1 |
| 08-AUG-23 | 1 |
| 17-SEP-23 | 1 |
| 29-OCT-23 | 1 |
| 03-DEC-23 | 1 |
| 15-JAN-24 | 1 |
| 08-MAR-24 | 1 |
| 22-APR-24 | 1 |

*Admission\_Date,*

*COUNT(DISTINCT Patient\_Id) AS Patients\_Count*

*FROM (*

*SELECT*

*a.Date\_Admit AS Admission\_Date,*

*a.Patient\_Id,*

*NTILE(10) OVER (ORDER BY a.Date\_Admit) AS bucket*

*FROM*

*Admission a*

*) bucketed\_data*

*GROUP BY*

*Admission\_Date, bucket*

*ORDER BY*

*Admission\_Date;*

1. **No of total no of incidents in each quarter**

*SELECT*

*TO\_CHAR(a.Date\_Admit, 'YYYY-Q') AS Quarter,*

*di.Incident\_name,*

*COUNT(\*) AS Number\_of\_Occurrences,*

*NTILE(5) OVER (PARTITION BY TO\_CHAR(a.Date\_Admit, 'YYYY-Q') ORDER BY COUNT(\*)) AS bucket*

*FROM*

*Admission a*

*JOIN*

*Dim\_Incident di ON a.Incident\_Id = di.Incident\_Id*

*GROUP BY*

*TO\_CHAR(a.Date\_Admit, 'YYYY-Q'), di.Incident\_name*

*ORDER BY*

*Quarter, di.Incident\_name;*

|  |  |  |  |
| --- | --- | --- | --- |
| QUARTER | INCIDENT\_NAME | NUMBER\_OF\_OCCURRENCES | BUCKET |
| 2023-1 | Delivery | 1 | 1 |
| 2023-2 | Liver\_failure | 1 | 2 |
| 2023-2 | Preterm\_labor | 1 | 1 |
| 2023-3 | Liver\_failure | 1 | 2 |
| 2023-3 | Preterm\_labor | 1 | 1 |
| 2023-4 | Delivery | 1 | 1 |
| 2023-4 | Heart\_attack | 1 | 2 |
| 2024-1 | Delivery | 1 | 2 |
| 2024-1 | Food\_poisoning | 1 | 1 |
| 2024-2 | Liver\_failure | 1 | 1 |

**REASON**

**1. Partition by in Length of stay of each patient\*\*:**

**- We use partitioning by `Patient\_Id` to separate the data into partitions based on each patient.**

**This allows us to calculate the length of stay for each patient individually, making it easier to analyze and compare the stay durations across different patients.**

**2. Partition by in No of Admission in Each Quarter\*\*:**

**- Partitioning by the quarter column helps organize the data into smaller partitions based on quarters.**

**This is useful when calculating the number of admissions in each quarter, as it optimizes the aggregation operation by grouping data into meaningful chunks.**

**3. Bucketing in Track the no of patient based on each day\*\*:**

**- Bucketing based on admission dates helps evenly distribute the data across buckets, especially when there's a potentially skewed distribution of admission dates.**

**By evenly distributing the data, we can improve query performance when tracking the number of patients admitted each day.**

**4. Bucketing in No of total no of incidents in each quarter\*\*:**

**- Bucketing is used here to evenly distribute incidents across buckets within each quarter.**

**This ensures a balanced distribution of incidents, which can help optimize query performance when calculating the total number of incidents in each quarter, especially if there's a skewed distribution of incidents.**