**PROJECT**

**SQL rollup**

**Database schema:**

Diagram, schematic

Description automatically generated

**Problem Statement 1:**

Brian, the healthcare department, has requested for a report that shows for each state how many people underwent treatment for the disease “Autism”. He expects the report to show the data for each state as well as each gender and for each state and gender combination.

Prepare a report for Brian for his requirement.

SELECT a.state, psn.gender, COUNT(t.treatmentid)

FROM treatment t

INNER JOIN disease d USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

INNER JOIN address a USING(addressid)

WHERE d.diseasename = 'Autism'

GROUP BY a.state,psn.gender WITH ROLLUP;

**Problem Statement 2:**

Insurance companies want to evaluate the performance of different insurance plans they offer.

Generate a report that shows each insurance plan, the company that issues the plan, and the number of treatments the plan was claimed for. The report would be more relevant if the data compares the performance for different years(2020, 2021 and 2022) and if the report also includes the total number of claims in the different years, as well as the total number of claims for each plan in all 3 years combined.

SELECT

CONCAT(ip.planname,' (',ic.companyname,')') AS `plan (company)`,

YEAR(t.date) AS 'year',

COUNT(t.treatmentid) AS treatment\_count

FROM treatment t

INNER JOIN claim c USING(claimid)

INNER JOIN insuranceplan ip USING(uin)

INNER JOIN insurancecompany ic USING(companyid)

WHERE YEAR(t.date) IN (2020,2021,2022)

GROUP BY `plan (company)`,`year` WITH ROLLUP;

**Problem Statement 3:**

Sarah, from the healthcare department, is trying to understand if some diseases are spreading in a particular region. Assist Sarah by creating a report which shows each state the number of the most and least treated diseases by the patients of that state in the year 2022. It would be helpful for Sarah if the aggregation for the different combinations is found as well. Assist Sarah to create this report.

WITH st\_wise\_report AS

(SELECT IF(GROUPING(a.state),'~ For all states',a.state) AS 'state',

IF(GROUPING(d.diseasename),'~ Total count',d.diseasename) AS 'diseasename',

COUNT(t.treatmentid) AS treatment\_count

FROM treatment t

INNER JOIN disease d USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

INNER JOIN address a USING(addressid)

WHERE YEAR(t.date) = 2022

GROUP BY a.state, d.diseasename WITH ROLLUP

ORDER BY state, treatment\_count),

st\_wise\_report\_row\_num AS

(SELECT \*,

ROW\_NUMBER() OVER(PARTITION BY state ORDER BY treatment\_count) AS row\_num\_asc,

ROW\_NUMBER() OVER(PARTITION BY state ORDER BY treatment\_count DESC) AS row\_num\_desc

FROM st\_wise\_report)

SELECT state, diseasename, treatment\_count

FROM st\_wise\_report\_row\_num

WHERE row\_num\_asc=1 OR row\_num\_desc IN (1,2)

ORDER BY state, treatment\_count;

**Problem Statement 4:**

Jackson has requested a detailed pharmacy report that shows each pharmacy name, and how many prescriptions they have prescribed for each disease in the year 2022, along with this Jackson also needs to view how many prescriptions were prescribed by each pharmacy, and the total number prescriptions were prescribed for each disease.

Assist Jackson to create this report.

SELECT

IF(GROUPING(d.diseasename),'~ all diseases',d.diseasename) AS diseasename,

IF(GROUPING(pmc.pharmacyname),'~ all pharmacies',pmc.pharmacyname) AS pharmacyname,

COUNT(psc.prescriptionid) AS prescription\_count

FROM prescription psc

INNER JOIN pharmacy pmc USING(pharmacyid)

INNER JOIN treatment t USING(treatmentid)

INNER JOIN disease d USING(diseaseid)

WHERE YEAR(t.date) = 2022

GROUP BY d.diseasename, pmc.pharmacyname WITH ROLLUP

ORDER BY diseasename, prescription\_count;

**Problem Statement 5:**

Praveen has requested for a report that finds for every disease how many males and females underwent treatment for each in the year 2022. It would be helpful for Praveen if the aggregation for the different combinations is found as well.

Assist Praveen to create this report.

**# WITH ROLLUP**

SELECT

IF(GROUPING(d.diseasename),'~ for all diseases', d.diseasename) AS diseasename,

IF(GROUPING(psn.gender),'~ for all genders', psn.gender) AS gender,

COUNT(t.treatmentid) AS treatment\_count

FROM treatment t

INNER JOIN disease d USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

WHERE YEAR(t.date) = 2022

GROUP BY d.diseasename, psn.gender WITH ROLLUP

ORDER BY diseasename, gender DESC;

**# WITHOUT ROLLUP**

SELECT d.diseasename, psn.gender,

COUNT(t.treatmentid) AS treatment\_count

FROM treatment t

INNER JOIN disease d USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

WHERE YEAR(t.date) = 2022

GROUP BY d.diseasename, psn.gender

UNION ALL

SELECT d.diseasename, '~ all gender' AS gender,

COUNT(t.treatmentid) AS treatment\_count

FROM treatment t

INNER JOIN disease d USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

WHERE YEAR(t.date) = 2022

GROUP BY d.diseasename

UNION ALL

SELECT '~ all diseases' AS diseasename, '~ all gender' AS gender,

COUNT(t.treatmentid) AS treatment\_count

FROM treatment t

INNER JOIN disease d USING(diseaseid)

INNER JOIN patient pnt USING(patientid)

INNER JOIN person psn ON pnt.patientid = psn.personid

WHERE YEAR(t.date) = 2022

ORDER BY diseasename, gender DESC;