**PROJECT**

**SQL Stored routines**

**Database schema:**

Diagram, schematic

Description automatically generated

**Problem Statement 1:**

Patients are complaining that it is often difficult to find some medicines. They move from pharmacy to pharmacy to get the required medicine. A system is required that finds the pharmacies and their contact number that have the required medicine in their inventory. So that the patients can contact the pharmacy and order the required medicine.

Create a stored procedure that can fix the issue.

DELIMITER $$

CREATE PROCEDURE IF NOT EXISTS find\_medicine(IN medicinename VARCHAR(174))

BEGIN

SELECT pharmacyname, phone

FROM pharmacy out\_tbl

WHERE medicinename IN (

SELECT m.productname

FROM keep k

INNER JOIN medicine m USING(medicineid)

WHERE k.pharmacyid = out\_tbl.pharmacyid);

END $$

DELIMITER ;

**Problem Statement 2:**

The pharmacies are trying to estimate the average cost of all the prescribed medicines per prescription, for all the prescriptions they have prescribed in a particular year. Create a stored function that will return the required value when the pharmacyID and year are passed to it. Test the function with multiple values.

DELIMITER $$

CREATE FUNCTION avg\_prescription\_bill(pharmacy\_id INT, yr INT)

RETURNS DECIMAL(10,2)

DETERMINISTIC

BEGIN

DECLARE avg\_total\_bill DECIMAL(10,2);

WITH psc\_wise\_bill AS

(SELECT psc.prescriptionid, SUM(m.maxprice \* c.quantity) AS total\_bill

FROM prescription psc

INNER JOIN treatment t USING(treatmentid)

INNER JOIN contain c USING(prescriptionid)

INNER JOIN medicine m USING(medicineid)

WHERE psc.pharmacyid = pharmacy\_id

AND YEAR(t.date) = yr

GROUP BY psc.prescriptionid)

SELECT AVG(total\_bill) INTO avg\_total\_bill

FROM psc\_wise\_bill;

RETURN avg\_total\_bill;

END $$

DELIMITER ;

**Problem Statement 3:**

The healthcare department has requested an application that finds out the disease that was spread the most in a state for a given year. So that they can use the information to compare the historical data and gain some insight.

Create a stored function that returns the name of the disease for which the patients from a particular state had the most number of treatments for a particular year. Provided the name of the state and year is passed to the stored function.

DELIMITER $$

CREATE FUNCTION most\_spreaded\_disease(statename VARCHAR(20), yr INT)

RETURNS VARCHAR(100)

DETERMINISTIC

BEGIN

DECLARE disease\_name VARCHAR(100);

DECLARE tmt\_cnt INT;

IF yr < 0 THEN

-- 45000 indicates generic application-defined errors

SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT = "Invalid year";

END IF;

IF statename NOT IN (SELECT DISTINCT state FROM address) THEN

SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT = "State not found";

END IF;

SELECT d.diseasename, COUNT(t.treatmentid) AS treatment\_count

INTO disease\_name, tmt\_cnt

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 a.state = statename AND YEAR(t.date) = yr

GROUP BY d.diseasename

ORDER BY treatment\_count DESC

LIMIT 1;

-- if disease is not found then purposefully returning null so that the code calling this function can easily handle it.

-- This is better than returning a custom message saying that the disease not found.

RETURN disease\_name;

END $$

DELIMITER ;

**Problem Statement 4:**

The representative of the pharma union, Aubrey, has requested a system that she can use to find how many people in a specific city have been treated for a specific disease in a specific year.

Create a stored function for this purpose.

DELIMITER $$

CREATE FUNCTION patient\_count(city\_name VARCHAR(100), disease\_name VARCHAR(100), yr INT)

RETURNS INT

DETERMINISTIC

BEGIN

DECLARE cnt INT;

SELECT COUNT(DISTINCT pnt.patientid)

INTO cnt

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 a.city = city\_name AND

d.diseasename = disease\_name AND

YEAR(t.date) = yr;

RETURN cnt;

END $$

DELIMITER ;

**Problem Statement 5:**

The representative of the pharma union, Aubrey, is trying to audit different aspects of the pharmacies. She has requested a system that can be used to find the average balance for claims submitted by a specific insurance company in the year 2022.

Create a stored function that can be used in the requested application.

DELIMITER $$

CREATE FUNCTION average\_balance\_2022(plan\_name VARCHAR(100))

RETURNS DECIMAL(10,2)

DETERMINISTIC

BEGIN

DECLARE avg\_bal DECIMAL(10,2);

WITH claim\_list AS

(SELECT DISTINCT c.claimid

FROM treatment t

INNER JOIN claim c USING(claimid)

INNER JOIN insuranceplan ip USING(uin)

WHERE ip.planname = plan\_name

AND YEAR(t.date) = 2022)

SELECT AVG(balance)

INTO avg\_bal

FROM claim WHERE claimid IN (SELECT \* FROM claim\_list);

RETURN avg\_bal;

END $$

DELIMITER ;