Database Systems
Spring Semester 2022
Assignment #3

Due Date: 11th April, 2022 (No extension will be given)

Instructions:

- *Submit on GOOGLE CLASSROOM in the form of a zip file with your ROLL NUMBER*
- *Do not copy the work of your peers. If cheating is detected, your case will be referred to DC.*

Question: The Faisal hospital in Lahore has developed new ICU units for covid patients. They need a new database software for managing the updated latest ICU mechanism.

The following tables form part of the ICU database held in a relational DBMS:
Patient(patientID, patientName, patientAddress, patientDoB)
ICU(ICUNo, ICUName, ICUType, noOfBeds)
Contains (patientID, ICUNo, admissionDate)
Drug (drugNo, drugName, costPerUnit)
Prescribed (patientID, drugNo, startDate, unitsPerDay, finishDate)

Patient contains patient details, and patientID is the primary key, and patientDoB is the date of Birth.
ICU contains hospital ICU details and ICUNo is the primary key;
Contains relation details the assignment of patients to ICU and (patientNo, wardNo) forms the primary key;
The drug contains details of drugs administered to patients, and drugNo is the primary key;
Prescribed details the assignment of drugs to patients and (patientID, drugNo, startDate) forms the primary key.

Part a) Write down NESTED SQL QUERIES for the following requirements.

1. List the name and age of the patients who are never prescribed any drugs.
2. For each ICUType, print the ICUName along with the total number of patients admitted each year but only for the ICU's with more than 10 beds.
3. Find the name of the patients who have been prescribed the drug Morphine as well as the drug Azomax.
4. For each patient, list the names of the drugs he has been prescribed. If he has not been prescribed any drug, indicate this with a null value
5. Print the name of the patients who were prescribed precisely the same set of drugs that were prescribed to 'Ali.'
6. Find pair of patients who have been prescribed exactly the same drugs.
7. List the names of the drugs that were never prescribed to any patients.
8. Print the name and age of the patients who have more than the average age of the patients.
9. Print the name and ID of the ICU with the minimum number of patients on a particular day.
10. Print the name of the patients aged less than 25 who were prescribed the drug 'Panadol'?

A. **Create a view** that includes the patient's name, the drug's name, and the number of days he should take the drug.
B. **Create a view** that includes the patient's name, the number of drugs he is prescribed, and the total sum of his drugs cost but only for the patients who are 18 or older and are prescribed more than 5 drugs.
C. **Create a trigger** that should print a message when a user under the age of 18 is prescribed a drug that costs more than 2500Rs.
D. **Create a trigger** that prints a message when the average number of patients per ICU falls below 5.