HOSPITAL DATABASE QUERIES-ANSWERS

1. Find the drugs that each patient used.

  SELECT   NAME, DRUGTİTLE
  FROM   PATIENT, RECEIPT, DRUGS
  WHERE   PATNO=PNO AND DRGNO=DRUGNO
  ORDER BY NAME

2. Find the patients who used drugs expensive than 3000.-

  SELECT   DISTINCT NAME
  FROM   PATIENT, RECEIPT, DRUGS
  WHERE   PATNO=PNO AND DRGNO=DRUGNO AND PRICE >3000

3. Find the names of doctors and the number of drugs they wrote

  SELECT   DNAME, COUNT(*)
  FROM   DOCTOR, RECEIPT
  WHERE   DOCNO=DCNO
  GROUP BY DNAME;

4. Find the names of doctors who wrote more than 20 receipts.

  SELECT   DNAME, COUNT(*)
  FROM   DOCTOR, RECEIPT
  WHERE   DOCNO=DCNO
  GROUP BY DNAME
  HAVING   COUNT(*)>20;

5. List the names of doctors who did not deal with any patient.

  SELECT   DNAME
  FROM   DOCTOR
  WHERE   DOCNO NOT IN (SELECT DNO
               FROM ILLNESS);

6. Find the names of patients who has illness record more than 10 times.

  SELECT   NAME, COUNT(*)
  FROM   PATIENT, ILLNESS
  WHERE   PATNO=PNUM
  GROUP BY NAME
  HAVING   COUNT(*) >20;

7. Find the drugs written in receipts more than 35 times.

  SELECT   DRUGTITLE, COUNT(*)
  FROM   DRUGS, RECEIPTS
  WHERE   DRUGNO = DRGNO
  GROUP BY DRUGTITLE
  HAVING   COUNT(*) >35;

8. Change the illness description to "grip" for all patients come to the doctor "Mr.Ahmet"

  UPDATE ILLNESS
  SET DESCRIPTION= "GRİP"
  WHERE DNO IN (SELECT DOCNO
         FROM DOCTOR
         WHERE DNAME= "Mr.Ahmet");

9. Delete all the patient resords who come to the hospital in "june 2010" (as date)

    DELETE FROM PATIENT
    WHERE PATNO IN (SELECT PNUM
            FROM ILLNESS
            WHERE DATE= "June 2010");

10. Find the names of doctors and the number of receipts they wrote, if they wrote more than 500 receipts and if the number of receipts is more than the number of patients he/she deals with.

    SELECT DNAME, COUNT(*)
    FROM DOCTOR, RECEIPT
    WHERE DCNO= DOCNO
        AND   (SELECT COUNT(*)
            FROM RECEIPT
            WHERE DCNO= DOCNO) >
            (SELECT COUNT(*)
            FROM ILLNESS
            WHERE DNO= DOCNO)
    GROUP BY DNAME
    HAVING COUNT(*) > 500;

HOSPITAL DATABASE QUERIES_Relational Algebra

1. Find the drugs that each patient used.
2. Find the patients who used drugs expensive than 3000.-
3. Find the patients who used all the drugs same with "Ali"
4. Find the names of doctors and the number of drugs they wrote
5. Find the drugs used for headacke (illness description)
6. Find the names of doctors who wrote more than 20 receipts.
7. List the names of doctors who did not deal with any patient.
8. Find the names of patients who has an illness record more than 10 times.
9. Find the names of patients who has a record with all cardiologist. (doctor profession)
10. Find the drugs written in receipts more than 35 times.
11. Find the names of doctors and the number of receipts they wrote, if they wrote more than 500 receipts and if the number of receipts is more than the number of patients he/she deals with.

ANSWERS

1. Find the drugs that each patient used.

A⬅(PATIENT) ∞ PATNO=PNO(RECEIPT)

B⬅(A) ∞ DRUGNO=DRGNO(DRUGS)

RESULT⬅π NAME,DRUGTITLE(B)

2. Find the patients who used drugs expensive than 3000.-

A⬅ δ PRICE>3000(DRUGS)

B←(A) $\bowtie_{DRUGNO=DRGNO}$**(RECEIPT)**

C←(PATIENT) $\bowtie_{PATNO=PNO}$**(B)**

RESULT←π_{NAME}**(C)**

3. Find the patients who used all the drugs same with "Ali"

A← $\delta_{NAME="ALi"}$**(PATIENT)**

B←(A) $\bowtie_{PATNO=PNO}$**(RECEIPT)**

C←π_{DRGNO}**(B)**

D←$\pi_{PNO,DRGNO}$**(B)**

E←D ÷ C

RESULT←π_{NAME}**((E)** $\bowtie_{PATNO=PNO}$**(PATIENT))**

4. Find the names of doctors and the number of drugs they wrote

A (DCNO,CNT) ← $_{DCNO}\Im_{COUNT(*)}$**(RECEIPT)**

RESULT←π_{DNAME}**((A)** $\bowtie_{DOCNO=DCNO}$**(DOCTOR))**

5. Find the drugs used for headacke (illness description)

A← $\delta_{DESCRIPTION="HEADACKE"}$**(ILLNESS)**

B←(A) $\bowtie_{DOCNO=DNO}$**(DOCTOR)**

C←(B) $\bowtie_{DOCNO=DCNO}$**(RECEIPT)**

RESULT←$\pi_{DRUGTITLE}$ **((C)** $\bowtie_{DRGNO=DRUGNO}$**(DRUGS))**

6. Find the names of doctors who wrote more than 20 receipts.

A (DCNO,CNT) ← $_{DCNO}\Im_{COUNT(*)}$**(RECEIPT)**

B← $\delta_{CNT>20}$**(A)**

RESULT←π_{DNAME}**((B)** $\bowtie_{DOCNO=DCNO}$**(DOCTOR))**

7. List the names of doctors who did not deal with any patient.

A←π_{DNO}**(ILLNESS)**

B←π_{DOCNO}**(DOCTOR)**

C←B − A

RESULT←π_{DNAME}((C) ⋈ $_{\text{DOCNO=DOCNO}}$(**DOCTOR**))

8. Find the names of patients who has an illness record more than 10 times.

A (PNO,CNT) ← $_{\text{PNUM}}\mathfrak{I}_{\text{COUNT(*)}}$(**ILLNESS**)

B← $\delta_{\text{CNT>10}}$(**A**)

RESULT←π_{NAME}((B) ⋈ $_{\text{PATNO=PNO}}$(**PATIENT**))

9. Find the names of patients who has a record with all cardiologist. (doctor profession)

A← π_{DOCNO} ($\delta_{\text{PROFESSION="CARDIOLOGIST"}}$(**DOCTOR**))

B←$\pi_{\text{PNUM,DNO}}$(**ILLNESS**)

C←**B** ÷ **A**

RESULT←π_{NAME}((C) ⋈ $_{\text{PATNO=PNUM}}$(**PATIENT**))

10. Find the drugs written in receipts more than 35 times.

A (DRGNO,CNT) ← $_{\text{DRGNO}}\mathfrak{I}_{\text{COUNT(*)}}$(**RECEIPTS**)

B← $\delta_{\text{CNT>35}}$(**A**)

RESULT←$\pi_{\text{DRUGTITLE}}$((B) ⋈ $_{\text{DRUGNO=DRGNO}}$(**DRUGS**))

11. Find the names of doctors and the number of receipts they wrote, if they wrote more than 500 receipts and if the number of receipts is more than the number of patients he/she deals with.

A (DCNO,CNT) ← $_{\text{DCNO}}\mathfrak{I}_{\text{COUNT(*)}}$(**RECEIPT**)

B (DNO,CNT2) ← $_{\text{DNO}}\mathfrak{I}_{\text{COUNT(*)}}$(**ILLNESS**)

C←**A** ⋈ $_{\text{DCNO=DNO}}$(**B**)

B← $\delta_{\text{CNT>CNT2 AND CNT> 500}}$ (**C**)

RESULT←$\pi_{\text{DNAME,CNT}}$((C) ⋈ $_{\text{DOCNO=DCNO}}$(**DOCTOR**))