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Reference : https://www.w3resource.com/sql-exercises/hospital-database-exercise/sql-exercise-on-hospital-database.php

1. Write a query in SQL to find all the information of the nurses who are yet to be registered.

```
SELECT *
FROM nurse
WHERE registered='false';
```

2. Write a query in SQL to find the name of the nurse who are the head of their department. Go to the editor.

```
SELECT name AS "Name",
       POSITION AS "Position"
FROM nurse
WHERE POSITION='Head Nurse';
```

3. Write a query in SQL to obtain the name of the physicians who are the head of each department.

```
SELECT d.name AS "Department",
       p.name AS "Physician"
FROM department d,
     physician p
WHERE d.head=p.employeeid;
```

4. Write a query in SQL to count the number of patients who taken appointment with at least one physician.

```
SELECT count(DISTINCT patient) AS "No. of patients taken at
least one appointment"
FROM appointment;
```

5. Write a query in SQL to find the floor and block where the room number 212 belongs to.

```
SELECT blockfloor AS "Floor",
       blockcode AS "Block"
FROM room
```

```
WHERE roomnumber=212;
```

6. Write a query in SQL to count the number available rooms.

```
SELECT count(*) "Number of available rooms"
FROM room
WHERE unavailable='false';
```

7. Write a query in SQL to count the number of unavailable rooms.

```
SELECT count(*) "Number of available rooms"
FROM room
WHERE unavailable='true';
```

8. Write a query in SQL to obtain the name of the physician and the departments they are affiliated with.

```
SELECT p.name AS "Physician",
       p.position,
       d.name AS "Department"
FROM physician p
JOIN affiliated_with a ON a.physician=p.employeeid
JOIN department d ON a.department=d.departmentid
WHERE primaryaffiliation='false';
```

11. Write a query in SQL to obtain the name of the physicians who are not a specialized physician.

```
SELECT p.name AS "Physician",
       p.position "Designation"
FROM physician p
LEFT JOIN trained_in t ON p.employeeid=t.physician
WHERE t.treatment IS NULL
ORDER BY employeeid;
```

12. Write a query in SQL to obtain the name of the patients with their physicians by whom they got their preliminary treatment.

```
SELECT t.name AS "Patient",
       t.address AS "Address",
       p.name AS "Physician"
FROM patient t
JOIN physician p ON t.pcp=p.employeeid;
```

13. Write a query in SQL to find the name of the patients and the number of physicians they have taken appointment.

```
SELECT p.name "Patient",
       count(t.patient) "Appointment for No. of Physicians"
FROM appointment t
JOIN patient p ON t.patient=p.ssn
GROUP BY p.name
HAVING count(t.patient)>=1;
```

14. Write a query in SQL to count number of unique patients who got an appointment for examination room C.

```
SELECT count(DISTINCT patient) AS "No. of patients got
appointment for room C"
FROM appointment
WHERE examinationroom='C';
```

15. Write a query in SQL to find the name of the patients and the number of the room where they have to go for their treatment.

```
SELECT p.name AS "Patient",
       a.examinationroom AS "Room No.",
       a.start_dt_time AS "Date and Time of appointment"
FROM patient p
JOIN appointment a ON p.ssn=a.patient;
```

16. Write a query in SQL to find the name of the nurses and the room scheduled, where they will assist the physicians.

```
SELECT n.name AS "Name of the Nurse",
       a.examinationroom AS "Room No."
FROM nurse n
JOIN appointment a ON a.prepnurse=n.employeeid;
```

17. Write a query in SQL to find the name of the patients who taken the appointment on the 25th of April at 10 am, and also display their physician, assisting nurses and room no.

```
SELECT t.name AS "Name of the patient",
       n.name AS "Name of the Nurse assisting the physician",
       p.name AS "Name of the physician",
       a.examinationroom AS "Room No.",
       a.start_dt_time
FROM patient t
JOIN appointment a ON a.patient=t.ssn
JOIN nurse n ON a.prepnurse=n.employeeid
JOIN physician p ON a.physician=p.employeeid
WHERE start_dt_time='2008-04-25 10:00:00';
```

18. Write a query in SQL to find the name of patients and their physicians who does not require any assistance of a nurse.

```
SELECT t.name AS "Name of the patient",
       p.name AS "Name of the physician",
       a.examinationroom AS "Room No."
FROM patient t
JOIN appointment a ON a.patient=t.ssn
JOIN physician p ON a.physician=p.employeeid
WHERE a.prepnurse IS NULL;
```

19. Write a query in SQL to find the name of the patients, their treating physicians and medication.

```
SELECT t.name AS "Patient",
       p.name AS "Physician",
       m.name AS "Medication"
FROM patient t
```

```
JOIN prescribes s ON s.patient=t.ssn
JOIN physician p ON s.physician=p.employeeid
JOIN medication m ON s.medication=m.code;
```

20. Write a query in SQL to find the name of the patients who taken an advanced appointment, and also display their physicians and medication.

```
SELECT t.name AS "Patient",
       p.name AS "Physician",
       m.name AS "Medication"
FROM patient t
JOIN prescribes s ON s.patient=t.ssn
JOIN physician p ON s.physician=p.employeeid
JOIN medication m ON s.medication=m.code
WHERE s.appointment IS NOT NULL;
```

21. Write a query in SQL to find the name and medication for those patients who did not take any appointment.

```
SELECT t.name AS "Patient",
       p.name AS "Physician",
       m.name AS "Medication"
FROM patient t
JOIN prescribes s ON s.patient=t.ssn
JOIN physician p ON s.physician=p.employeeid
JOIN medication m ON s.medication=m.code
WHERE s.appointment IS NULL;
```

22. Write a query in SQL to count the number of available rooms in each block.

```
SELECT blockcode AS "Block",
       count(*) "Number of available rooms"
FROM room
WHERE unavailable='false'
GROUP BY blockcode
ORDER BY blockcode;
```

23. Write a query in SQL to count the number of available rooms in each floor.

```
SELECT blockfloor AS "Floor",
       count(*) "Number of available rooms"
FROM room
WHERE unavailable='false'
GROUP BY blockfloor
ORDER BY blockfloor;
```

24. Write a query in SQL to count the number of available rooms for each block in each floor.

```
SELECT blockfloor AS "Floor",
       blockcode AS "Block",
       count(*) "Number of available rooms"
FROM room
WHERE unavailable='false'
GROUP BY blockfloor,
        blockcode
ORDER BY blockfloor,
        blockcode;
```

25. Write a query in SQL to count the number of unavailable rooms for each block in each floor.

```
SELECT blockfloor AS "Floor",
       blockcode AS "Block",
       count(*) "Number of available rooms"
FROM room
WHERE unavailable='true'
GROUP BY blockfloor,
        blockcode
ORDER BY blockfloor,
        blockcode;
```

26. Write a query in SQL to find out the floor where the maximum no of rooms are available.

```
SELECT blockfloor as "Floor",
       count(*) AS  "No of available rooms"
FROM room
WHERE unavailable='false'
GROUP BY blockfloor
HAVING count(*) =
  (SELECT max(zz) AS highest_total
   FROM
     ( SELECT blockfloor ,
              count(*) AS zz
      FROM room
      WHERE unavailable='false'
      GROUP BY blockfloor ) AS t );
```

27. Write a query in SQL to find out the floor where the minimum no of rooms are available.

```
SELECT blockfloor as "Floor",
       count(*) AS  "No of available rooms"
FROM room
WHERE unavailable='false'
GROUP BY blockfloor
HAVING count(*) =
  (SELECT min(zz) AS highest_total
   FROM
     ( SELECT blockfloor ,
              count(*) AS zz
      FROM room
      WHERE unavailable='false'
      GROUP BY blockfloor ) AS t );
```

28. Write a query in SQL to obtain the name of the patients, their block, floor, and room number where they are admitted.

```
SELECT p.name AS "Patient",
       s.room AS "Room",
       r.blockfloor AS "Floor",
       r.blockcode AS "Block"
FROM stay s
JOIN patient p ON s.patient=p.ssn
```

```
JOIN room r ON s.room=r.roomnumber;
```

29. Write a query in SQL to obtain the nurses and the block where they are booked for attending the patients on call.

```
SELECT n.name AS "Nurse",
       o.blockcode AS "Block"
FROM nurse n
JOIN on_call o ON o.nurse=n.employeeid;
```

30. Write a query in SQL to make a report which will show -

a) name of the patient,

b) name of the physician who is treating him or her,

c) name of the nurse who is attending him or her,

d) which treatement is going on to the patient,

e) the date of release,

f) in which room the patient has admitted and which floor and block the room belongs to respectively.

```
SELECT p.name AS "Patient",
       y.name AS "Physician",
       n.name AS "Nurse",
       s.end_time AS "Date of release",
       pr.name as "Treatement going on",
       r.roomnumber AS "Room",
       r.blockfloor AS "Floor",
       r.blockcode AS "Block"
FROM undergoes u
JOIN patient p ON u.patient=p.ssn
JOIN physician y ON u.physician=y.employeeid
LEFT JOIN nurse n ON u.assistingnurse=n.employeeid
JOIN stay s ON u.patient=s.patient
JOIN room r ON s.room=r.roomnumber
JOIN procedure pr on u.procedure=pr.code;
```

31. Write a SQL query to obtain the names of all the physicians performed a medical procedure but they are not ceritifed to perform.

```
SELECT name AS "Physician"
FROM physician
WHERE employeeid IN
    ( SELECT undergoes.physician
     FROM undergoes
     LEFT JOIN trained_In ON
undergoes.physician=trained_in.physician
     AND undergoes.procedure=trained_in.treatment
     WHERE treatment IS NULL );
```

32. Write a query in SQL to obtain the names of all the physicians, their procedure, date when the procedure was carried out and name of the patient on which procedure have been carried out but those physicians are not cetified for that procedure.

```
SELECT p.name AS "Physician",
       pr.name AS "Procedure",
       u.date,
       pt.name AS "Patient"
FROM physician p,
     undergoes u,
     patient pt,
     PROCEDURE pr
WHERE u.patient = pt.SSN
  AND u.procedure = pr.Code
  AND u.physician = p.EmployeeID
  AND NOT EXISTS
    ( SELECT *
     FROM trained_in t
     WHERE t.treatment = u.procedure
       AND t.physician = u.physician );
```

33. Write a query in SQL to obtain the name and position of all physicians who completed a medical procedure with certification after the date of expiration of their certificate.

```
SELECT name AS "Physician",
       position AS "Position"
FROM physician
WHERE employeeid IN
    ( SELECT physician
     FROM undergoes u
```

```
    WHERE date >
        ( SELECT certificationexpires
         FROM trained_in t
         WHERE t.physician = u.physician
           AND t.treatment = u.procedure ) );
```

34. Write a query in SQL to obtain the name of all those physicians who completed a medical procedure with certification after the date of expiration of their certificate, their position, procedure they have done, date of procedure, name of the patient on which the procedure had been applied and the date when the certification expired.

```
SELECT p.name AS "Physician",
       p.position AS "Position",
       pr.name AS "Procedure",
       u.date AS "Date of Procedure",
       pt.name AS "Patient",
       t.certificationexpires AS "Expiry Date of Certificate"
FROM physician p,
     undergoes u,
     patient pt,
     PROCEDURE pr,
               trained_in t
WHERE u.patient = pt.ssn
  AND u.procedure = pr.code
  AND u.physician = p.employeeid
  AND Pr.code = t.treatment
  AND P.employeeid = t.physician
  AND u.Date > t.certificationexpires;
```

35. Write a query in SQL to obtain the names of all the nurses who have ever been on call for room 122.

```
SELECT n.name
FROM nurse n
WHERE employeeid IN
    ( SELECT oc.nurse
     FROM on_call oc,
          room r
     WHERE oc.blockfloor = r.blockfloor
       AND oc.blockcode = r.blockcode
       AND r.roomnumber = 122 );
```

36. Write a query in SQL to Obtain the names of all patients who has been prescribed some medication by his/her physician who has carried out primary care and the name of that physician.

```
SELECT pt.name AS "Ptient",
       p.name AS "Physician"
FROM patient pt
JOIN prescribes pr ON pr.patient=pt.ssn
JOIN physician p ON pt.pcp=p.employeeid
WHERE pt.pcp=pr.physician
  AND pt.pcp=p.employeeid;
```

37. Write a query in SQL to obtain the names of all patients who has been undergone a procedure costing more than $5,000 and the name of that physician who has carried out primary care.

```
SELECT pt.name AS "Ptient",
       p.name AS "Primary Physician",
       pd.cost AS "Porcedure Cost"
FROM patient pt
JOIN undergoes u ON u.patient=pt.ssn
JOIN physician p ON pt.pcp=p.employeeid
JOIN PROCEDURE pd ON u.procedure=pd.code
WHERE pd.cost>5000;
```

38. Write a query in SQL to Obtain the names of all patients who had at least two appointment where the nurse who prepped the appointment was a registered nurse and the physician who has carried out primary care.

```
SELECT pt.name AS "Patient",
       p.name AS "Primary Physician",
       n.name AS "Nurse"
FROM appointment a
JOIN patient pt ON a.patient=pt.ssn
JOIN nurse n ON a.prepnurse=n.employeeid
JOIN physician p ON pt.pcp=p.employeeid
WHERE a.patient IN
    (SELECT patient
     FROM appointment a
     GROUP BY a.patient
     HAVING count(*)>=2)
  AND n.registered='true'
ORDER BY pt.name;
```

39. Write a query in SQL to Obtain the names of all patients whose primary care is taken by a physician who is not the head of any department and name of that physician along with their primary care physician.

```
SELECT pt.name AS "Patient",
       p.name AS "Primary care Physician"
FROM patient pt
JOIN physician p ON pt.pcp=p.employeeid
WHERE pt.pcp NOT IN
    (SELECT head
     FROM department);
```