DOCTOR APPOINTMENT SYSTEM

A PROJECT REPORT

for

DATABASE MANAGEMENT SYSTEMS (CSC2003)

in

B.Sc (Computer Science)

by

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VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

School of Computer Science Engineering and Information Systems

November, 2023

DOCTOR APPOINTMENT SYSTEM

INTRODUCTION :

A doctor appointment database system is a sophisticated platform designed to streamline and optimize the process of scheduling,managing,and tracking appoinments within a healthcare setting.it's an integral part of modern healthcare management,aiming to improve patient care,enhance operational efficiency,and facilitate seamless communication between patients and healthcare providers.

PROJECT SCOPE :

1.Patient: Represents individuals seeking medical care. Contains personal information, medical history, and contact details.

2.Consultation: Records details of medical consultations between doctors and patients. Includes diagnosis, treatment plans, and follow-up instructions.

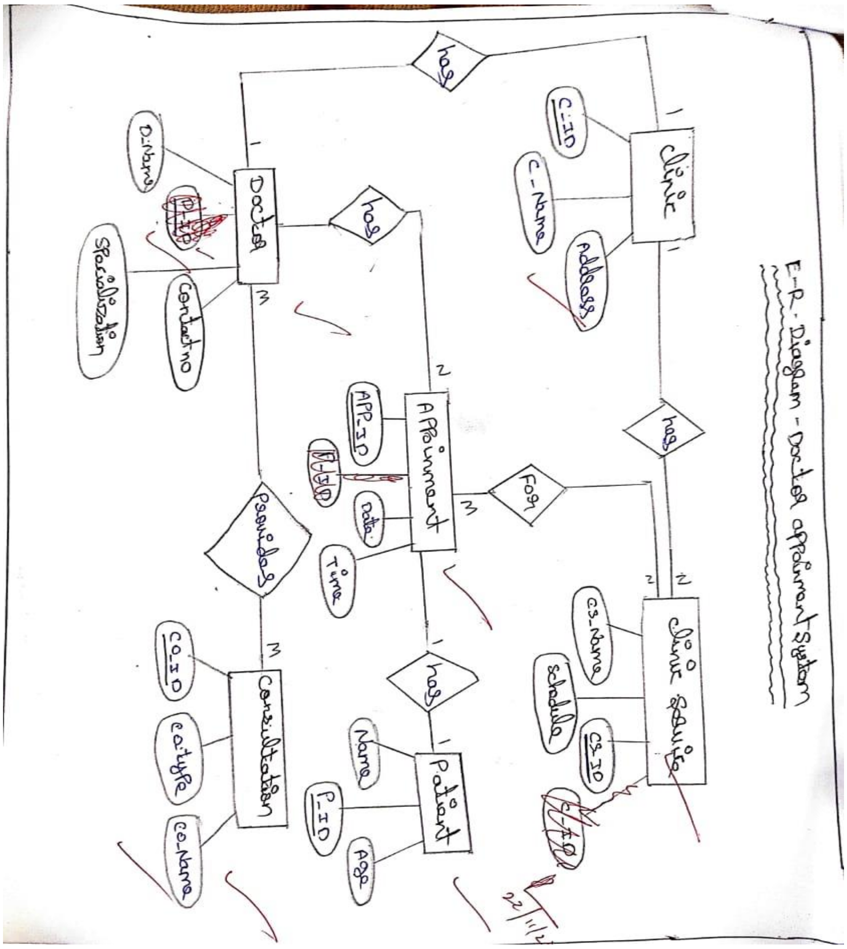
3.Appointment: Tracks scheduled appointments between patients and doctors at specific times and dates.

4.Clinic: Defines the physical locations where medical services are provided. Contains information about the clinic's address, contact details, and operating hours.

5.Clinic Service: Specifies the services offered within a clinic, such as specific medical specialties, tests, or procedures available.

6.Doctor: Represents healthcare professionals involved in patient care. Contains their specialization, contact information, and schedule.

ER DIAGRAM :



ENTITIES:

1.Patient

2.Consultation

3.Appointment

4.Clinic

5.Clinic Services

6.Doctor

ATTRIBUTES AND KEY ATTRIBUTES:

Patient

- Patient ID – primary key represented with underline
- Patient name
- Age

Consultation

- Consultation ID – primary key represented with Underline
- Consultation Type
- Consultation Name

Appointment

- Appointment ID – primary key represented with Underline
- Patient ID – foreign key
- Date
- Time

Clinic

- Clinic ID – primary key represented with underline
- Clinic name
- Address

Doctor

- Doctor ID – primary key represented with underline
- Doctor name
- Specialization
- Contact number

Clinic services

- Service ID – primary key represented with underline
- Clinic ID – foreign key
- Schedule
- Clinic Service

Doctor consulation

- Doctor ID – foreign key
- Consultation ID - foreign key

Appointment clinic service

- Appointment ID – foreign key
- Service ID – foreign key

RELATIONSHIP:

1. **Patient - Appointment:** Patients schedule appointments; thus, there's a one-to-many relationship where one patient can have multiple appointments, but each appointment belongs to a single patient.
2. **Appointment - Docto**r: Each appointment involves a doctor, creating a many-to-one relationship where many appointments are associated with one doctor.
3. **Appointment - Consultation:** A consultation typically arises from an appointment, establishing a one-to-one relationship where each appointment leads to one consultation.
4. **Doctor - Clinic:** Doctors practice in clinics, forming a one-to-one relationship where one doctor can work in one clinic, and a clinic hosts one doctors.
5. **Clinic - Clinic Service:** Clinics offer various services, resulting in a one-to-many relationship where multiple services can be provided in one clinics, and a service might be available in various clinics.
6. **Consultation - Doctor:** During a consultation, a patient interacts with a specific doctor, generating a many-to-many relationship where multiple consultations can be conducted by multiple doctor.

CARDINALITY RATIO:

1.Patient - Appointment: One-to-Many (A patient can have multiple appointments, and an appointment can involve One patients in case of family appointments or group sessions.)

2.Appointment - Doctor: Many-to-One (An appointment can have only one doctor, but a doctor can have multiple appointments.)

3.Appointment - Consultation: One-to-One (Each appointment generally leads to a single consultation and vice versa.)

4.Doctor - Clinic: Many-to-Many (A doctor can practice in multiple clinics, and a clinic can have multiple doctors.)

5.Clinic - Clinic Service: Many-to-Many (A clinic can offer multiple services, and a service can be available in multiple clinics.)

6.Consultation - Doctor: Many-to-Many (Multiple consultations can be conducted by a single doctor, but each consultation multiple doctor involved.)

RELATIONAL SCHEMA:

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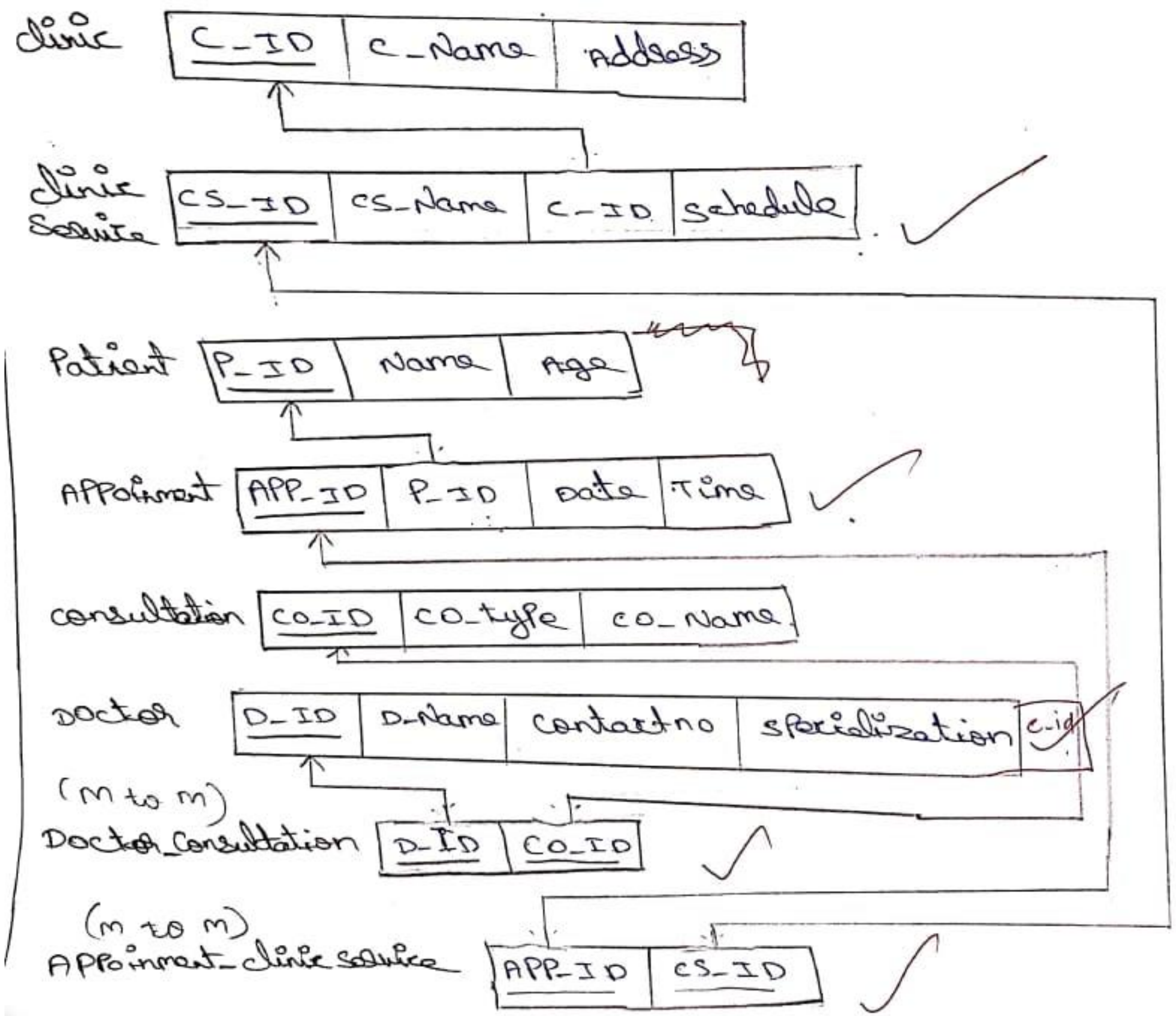
Relational schema



22/11/23.

CLINIC:

ATTRIBUTES -Clinic id,Clinic name,Address

PRIMARY KEY – Clinic id

CLINIC SERVICE:

ATTRIBUTES – Clinic service id,Clinic service name,Clinic id,Schedule

PRIMARY KEY – Clinic Service id

FOREIGN KEY – Clinic id

PATIENT:

ATTRIBUTES – Patient id,Patient name,Age

PRIMARY KEY – Patient id

APPOINMENT:

ATTRIBUTES – Appoinment id,Patient id,Date,Time

PRIMARY KEY – Appoinment id

FOREIGN KEY – Patient id

CONSULATION:

ATTRIBUTES – Consulation id,consulation type,Consulation Name

PRIMARY KEY – Consulation id

DOCTOR:

ATTRIBUTES – Doctor id,Doctor name,Contact no,specialization,clinic id

PRIMARY KEY – Doctor id

FOREIGN KEY – clinic id

DOCTOR CONSULATION:

ATTRIBUTES – Doctor id,Consulation id

FOREIGN KEY – Doctor id,Consulation id

APPOINMENT CLINIC SERVICE:

ATTRIBUTES – Appoinment id,Clinic service id

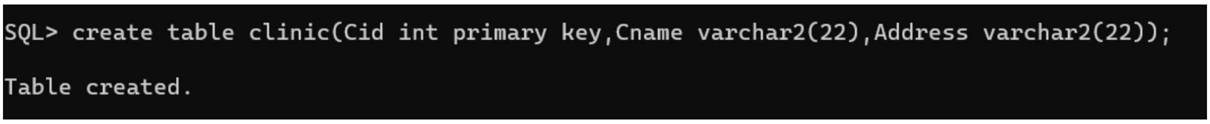
FOREIGN KEY – Doctor id,Consulation id

TABLE CREATION:

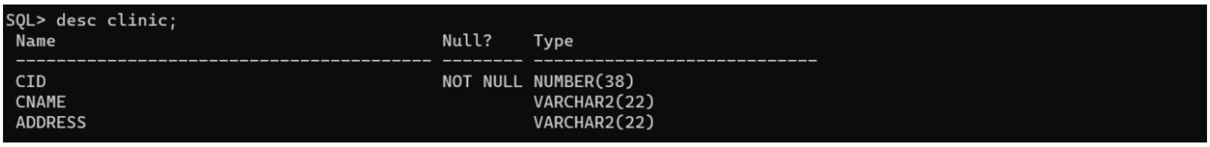
Clinic table:

create table clinic(Cid int primary key,Cname varchar2(22),Address varchar2(22));

desc clinic;



```
SQL> create table clinic(Cid int primary key,Cname varchar2(22),Address varchar2(22));

Table created.
```

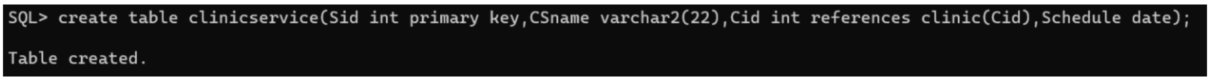


```
SQL> desc clinic;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                              VARCHAR2(22)
 ADDRESS                                            VARCHAR2(22)
```

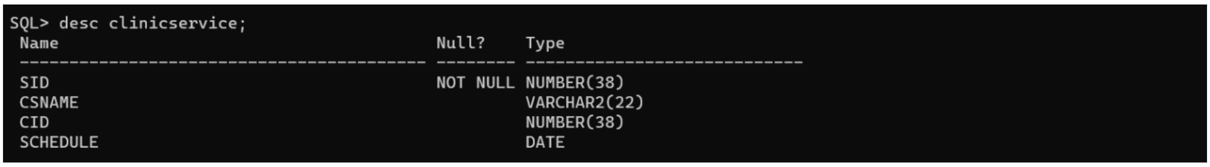
Clinic service:

create table clinicservice(Sid int primary key,CSname varchar2(22),Cid int references clinic(Cid),Schedule date);

desc clinicservice;



```
SQL> create table clinicservice(Sid int primary key,CSname varchar2(22),Cid int references clinic(Cid),Schedule date);

Table created.
```

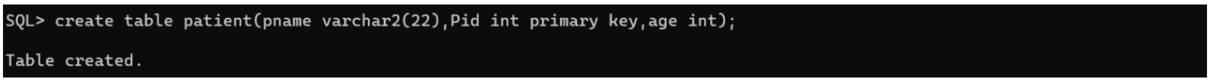


```
SQL> desc clinicservice;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                       NOT NULL NUMBER(38)
 CSNAME                                             VARCHAR2(22)
 CID                                                NUMBER(38)
 SCHEDULE                                           DATE
```

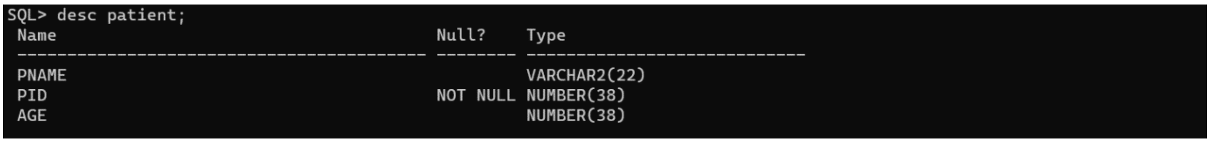
Patient :

create table patient(pname varchar2(22),Pid int primary key,age int);

desc patient;



```
SQL> create table patient(pname varchar2(22),Pid int primary key,age int);

Table created.
```

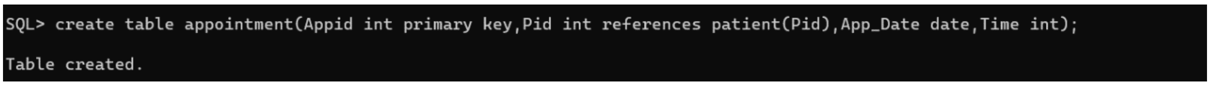


```
SQL> desc patient;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PNAME                                              VARCHAR2(22)
 PID                                       NOT NULL NUMBER(38)
 AGE                                                NUMBER(38)
```

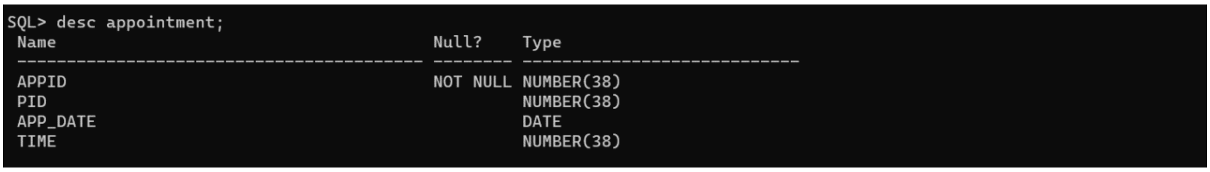
Appointment:

create table appointment(Appid int primary key,Pid int references patient(Pid),App_Date date,Time int);

desc appointment;



```
SQL> create table appointment(Appid int primary key,Pid int references patient(Pid),App_Date date,Time int);

Table created.
```

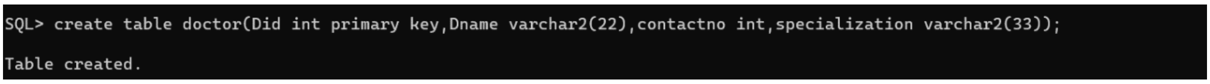


```
SQL> desc appointment;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 APPID                                     NOT NULL NUMBER(38)
 PID                                                NUMBER(38)
 APP_DATE                                           DATE
 TIME                                               NUMBER(38)
```

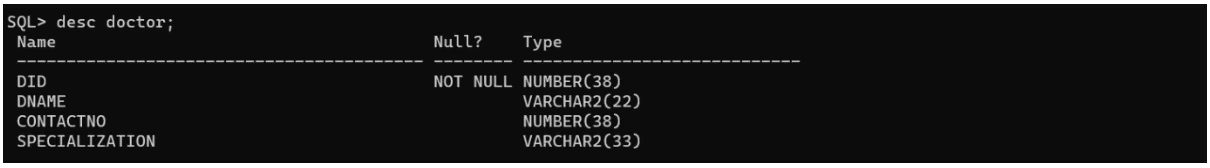
Doctor:

create table doctor(Did int primary key,Dname varchar2(22),contactno int,specialization varchar2(33));

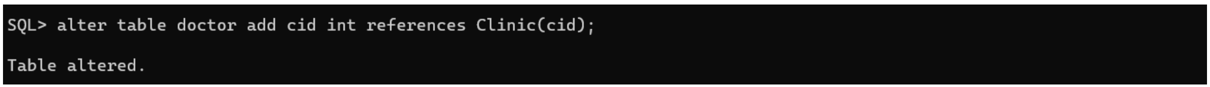
desc doctor;



```
SQL> create table doctor(Did int primary key,Dname varchar2(22),contactno int,specialization varchar2(33));

Table created.
```



```
SQL> desc doctor;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DID                                       NOT NULL NUMBER(38)
 DNAME                                              VARCHAR2(22)
 CONTACTNO                                          NUMBER(38)
 SPECIALIZATION                                     VARCHAR2(33)
```

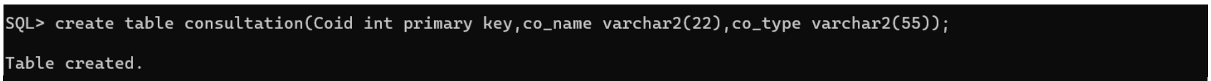


```
SQL> alter table doctor add cid int references Clinic(cid);

Table altered.
```

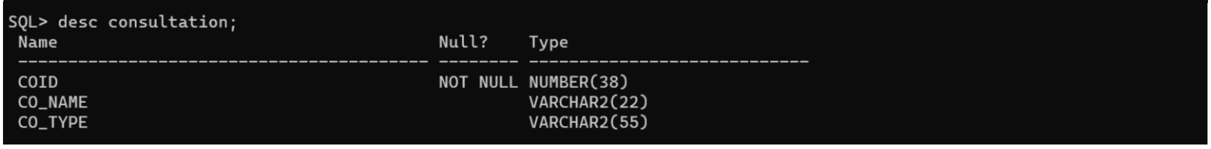
Consultation:

create table consultation(Coid int primary key,co_name varchar2(22),co_type varchar2(55));

desc consultation;



```
SQL> create table consultation(Coid int primary key,co_name varchar2(22),co_type varchar2(55));

Table created.
```



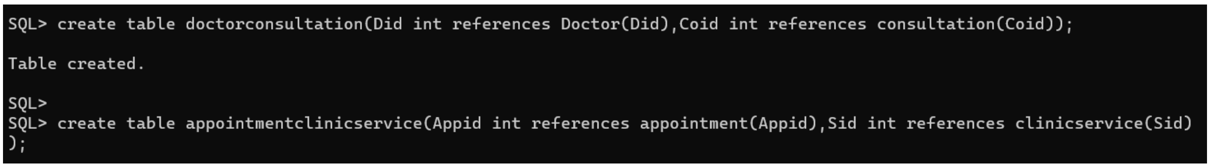
```
SQL> desc consultation;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 COID                                      NOT NULL NUMBER(38)
 CO_NAME                                            VARCHAR2(22)
 CO_TYPE                                            VARCHAR2(55)
```

Doctor consultation:

create table doctorconsultation(Did int references Doctor(Did),Coid int references consultation(Coid));

Appointent clinic Service:

create table appointmentclinicservice(Appid int references appointment(Appid),Sid int references clinicservice(Sid));



```
SQL> create table doctorconsultation(Did int references Doctor(Did),Coid int references consultation(Coid));

Table created.

SQL>
SQL> create table appointmentclinicservice(Appid int references appointment(Appid),Sid int references clinicservice(Sid)
);
```

TABLE INSERTION

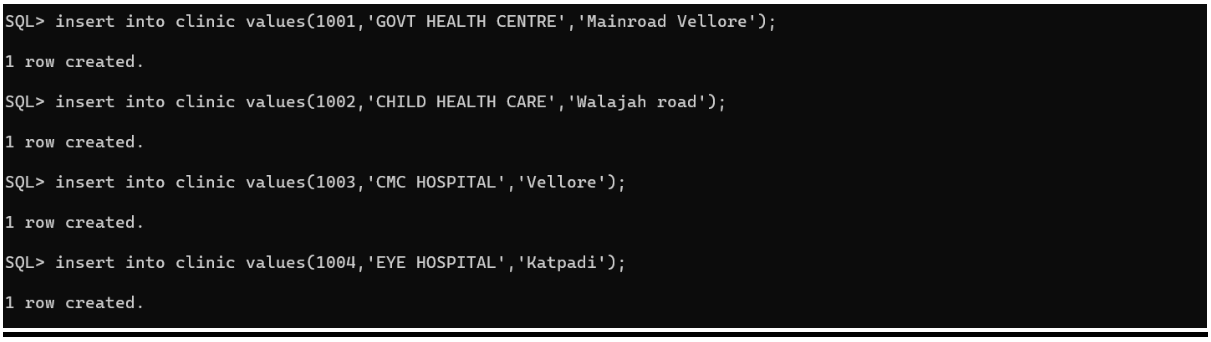
Clinic values:

insert into clinic values(1001,'GOVT HEALTH CENTRE','Mainroad Vellore');

insert into clinic values(1002,'CHILD HEALTH CARE','Walajah road');

insert into clinic values(1003,'CMC HOSPITAL','Vellore');

insert into clinic values(1004,'EYE HOSPITAL','Katpadi');



```
SQL> insert into clinic values(1001,'GOVT HEALTH CENTRE','Mainroad Vellore');

1 row created.

SQL> insert into clinic values(1002,'CHILD HEALTH CARE','Walajah road');

1 row created.

SQL> insert into clinic values(1003,'CMC HOSPITAL','Vellore');

1 row created.

SQL> insert into clinic values(1004,'EYE HOSPITAL','Katpadi');

1 row created.
```

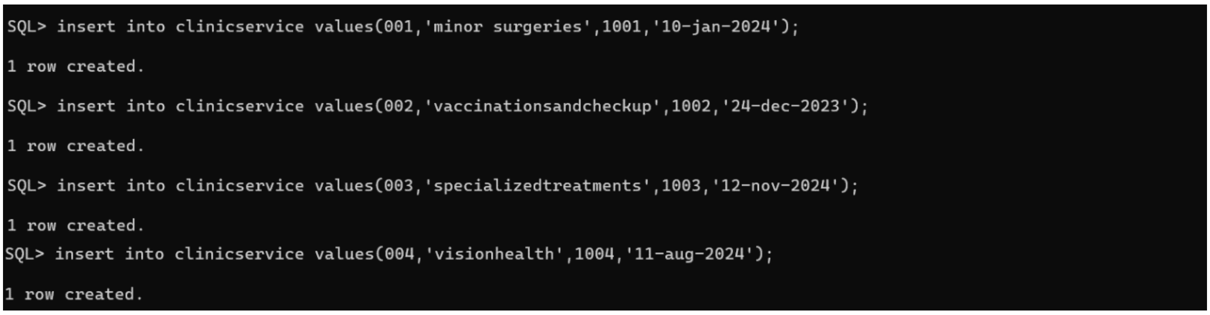
Clinic service values:

insert into clinicservice values(001,'minor surgeries',1001,'10-jan-2024');

insert into clinicservice values(002,'vaccinationsandcheckup',1002,'24-dec-2023');

insert into clinicservice values(003,'specializedtreatments',1003,'12-nov-2024');

insert into clinicservice values(004,'visionhealth',1004,'11-aug-2024');



```
SQL> insert into clinicservice values(001,'minor surgeries',1001,'10-jan-2024');

1 row created.

SQL> insert into clinicservice values(002,'vaccinationsandcheckup',1002,'24-dec-2023');

1 row created.

SQL> insert into clinicservice values(003,'specializedtreatments',1003,'12-nov-2024');

1 row created.
SQL> insert into clinicservice values(004,'visionhealth',1004,'11-aug-2024');

1 row created.
```

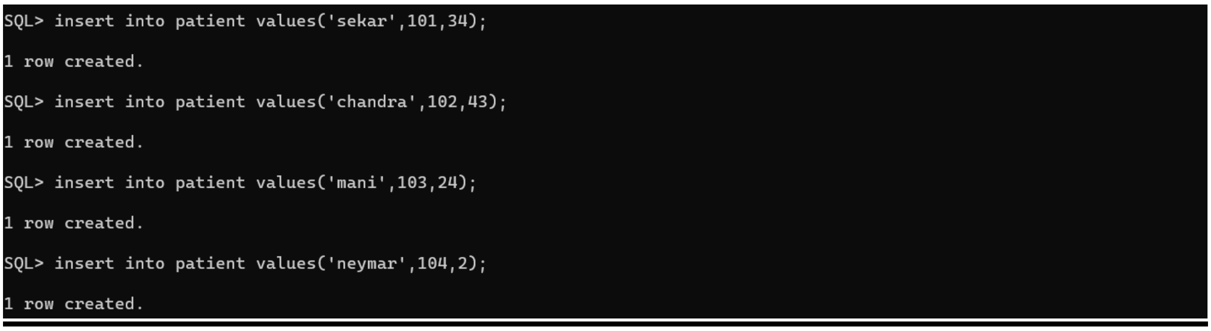
Patient values:

insert into patient values('sekar',101,34);

insert into patient values('chandra',102,43);

insert into patient values('mani',103,24);

insert into patient values('neymar',104,2);



```
SQL> insert into patient values('sekar',101,34);

1 row created.

SQL> insert into patient values('chandra',102,43);

1 row created.

SQL> insert into patient values('mani',103,24);

1 row created.

SQL> insert into patient values('neymar',104,2);

1 row created.
```

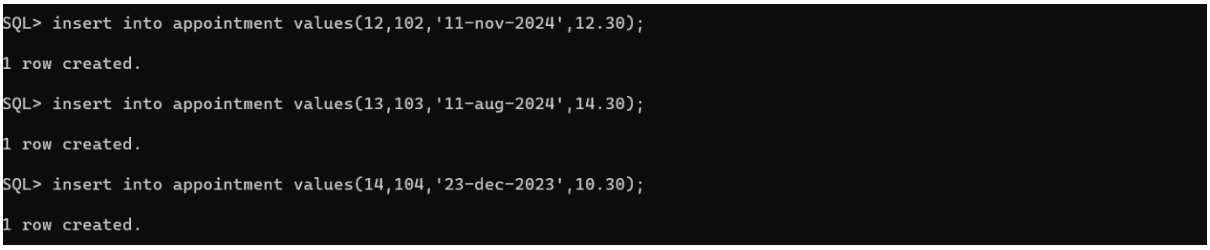
Appointment values:

insert into appointment values(11,101,'10-jan-2024',7.00);

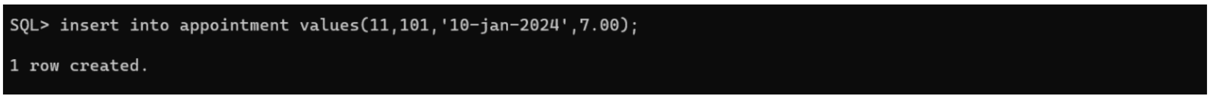
insert into appointment values(12,102,'11-nov-2024',12.30);

insert into appointment values(13,103,'11-aug-2024',14.30);

insert into appointment values(14,104,'23-dec-2023',10.30)



```
SQL> insert into appointment values(12,102,'11-nov-2024',12.30);

1 row created.

SQL> insert into appointment values(13,103,'11-aug-2024',14.30);

1 row created.

SQL> insert into appointment values(14,104,'23-dec-2023',10.30);

1 row created.
```



```
SQL> insert into appointment values(11,101,'10-jan-2024',7.00);

1 row created.
```

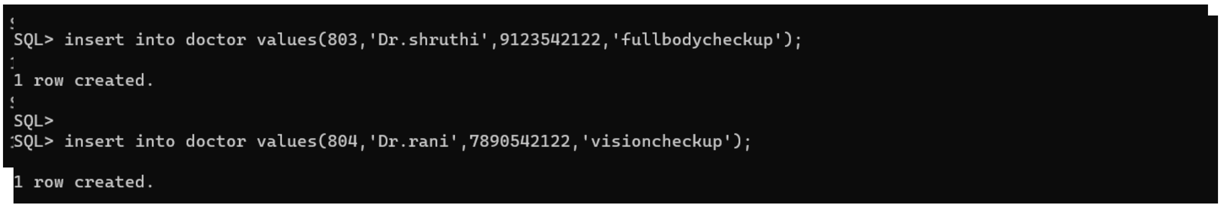
Doctor values:

insert into doctor values(801,'Dr.joe',98765432100,'leg surgeries');

insert into doctor values(802,'Dr.venkat',67584928445,'vaccination');

insert into doctor values(803,'Dr.shruthi',9123542122,'fullbodycheckup');

insert into doctor values(804,'Dr.rani',7890542122,'visioncheckup');



```
SQL> insert into doctor values(803,'Dr.shruthi',9123542122,'fullbodycheckup');

1 row created.

SQL>
SQL> insert into doctor values(804,'Dr.rani',7890542122,'visioncheckup');

1 row created.
```

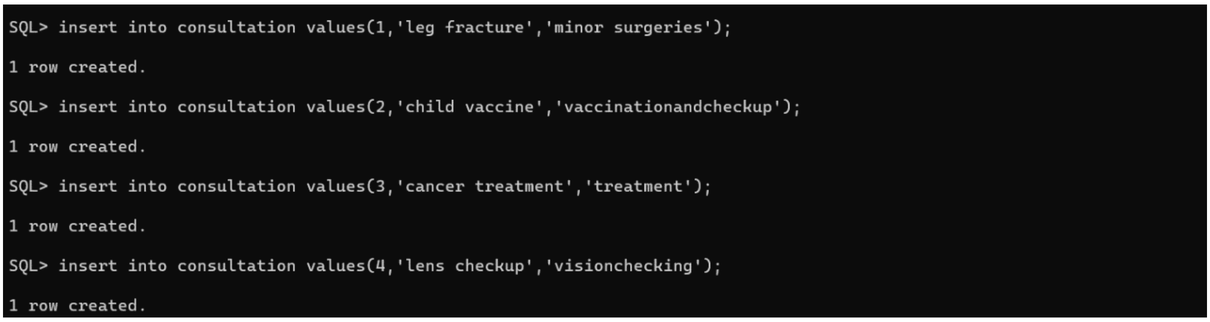
Consultation values:

insert into consultation values(1,'leg fracture','minor surgeries');

insert into consultation values(2,'child vaccine','vaccinationandcheckup');

insert into consultation values(3,'cancer treatment','treatment');

insert into consultation values(4,'lens checkup','visionchecking');



```
SQL> insert into consultation values(1,'leg fracture','minor surgeries');

1 row created.

SQL> insert into consultation values(2,'child vaccine','vaccinationandcheckup');

1 row created.

SQL> insert into consultation values(3,'cancer treatment','treatment');

1 row created.

SQL> insert into consultation values(4,'lens checkup','visionchecking');

1 row created.
```

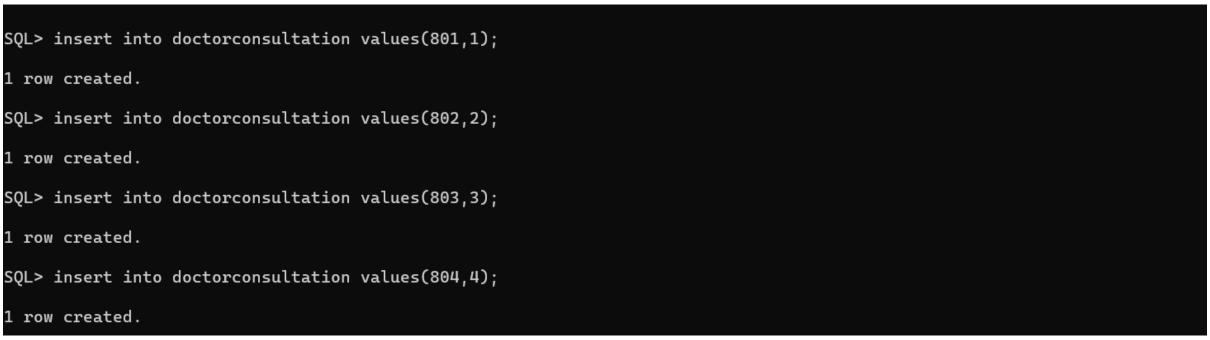
Doctorconsultation values:

insert into doctorconsultation values(801,1);

insert into doctorconsultation values(802,2);

insert into doctorconsultation values(803,3);

insert into doctorconsultation values(804,4);



```
SQL> insert into doctorconsultation values(801,1);

1 row created.

SQL> insert into doctorconsultation values(802,2);

1 row created.

SQL> insert into doctorconsultation values(803,3);

1 row created.

SQL> insert into doctorconsultation values(804,4);

1 row created.
```

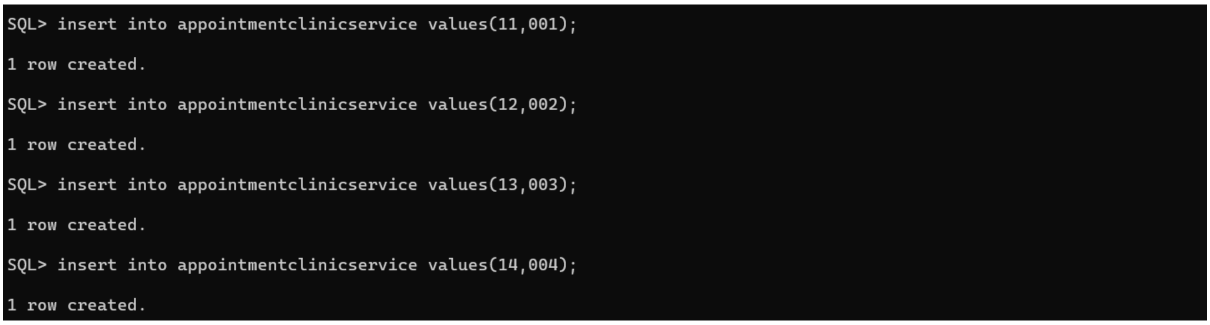
Appointmentclinicservice values:

insert into appointmentclinicservice values(11,001);

insert into appointmentclinicservice values(12,002);

insert into appointmentclinicservice values(13,003);

insert into appointmentclinicservice values(14,004);

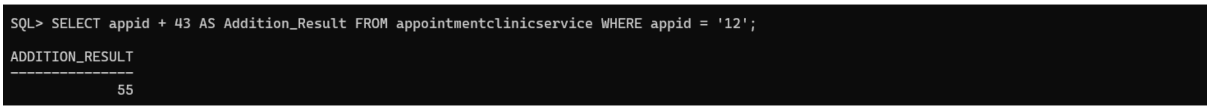


```
SQL> insert into appointmentclinicservice values(11,001);

1 row created.

SQL> insert into appointmentclinicservice values(12,002);

1 row created.

SQL> insert into appointmentclinicservice values(13,003);

1 row created.

SQL> insert into appointmentclinicservice values(14,004);

1 row created.
```

Arithmetic operator(Note:one query per operator)

Addition operator(+):

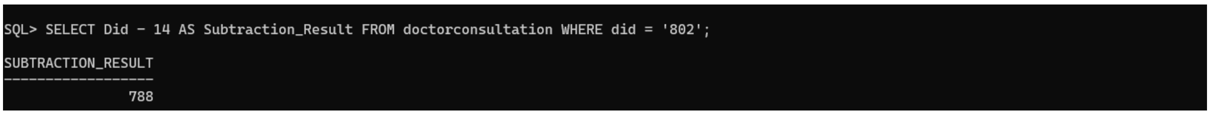
SELECT appid + 43 AS Addition_Result FROM appointmentclinicservice WHERE appid = '12';



```
SQL> SELECT appid + 43 AS Addition_Result FROM appointmentclinicservice WHERE appid = '12';

ADDITION_RESULT
---------------
             55
```

Subtraction operator(-):

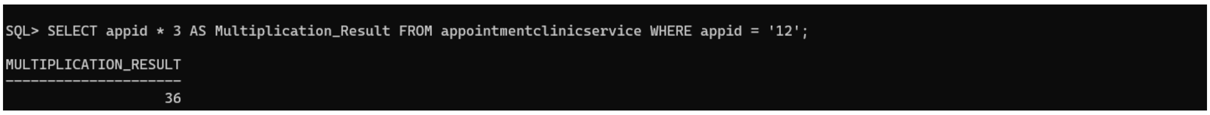
SELECT Did - 14 AS Subtraction_Result FROM doctorconsultation WHERE did = '802';



```
SQL> SELECT Did - 14 AS Subtraction_Result FROM doctorconsultation WHERE did = '802';

SUBTRACTION_RESULT
------------------
               788
```

Multiplication operator(*):

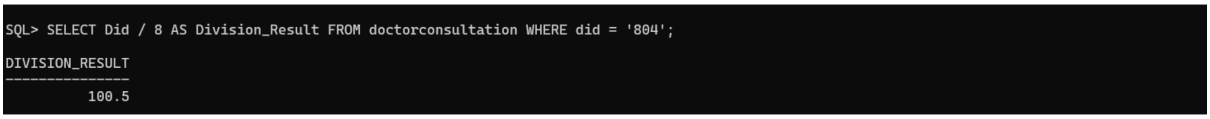
SELECT appid * 3 AS Multiplication_Result FROM appointmentclinicservice WHERE appid = '12';



```
SQL> SELECT appid * 3 AS Multiplication_Result FROM appointmentclinicservice WHERE appid = '12';

MULTIPLICATION_RESULT
---------------------
                   36
```

Division operator(/):

SELECT Did / 8 AS Division_Result FROM doctorconsultation WHERE did = '804';

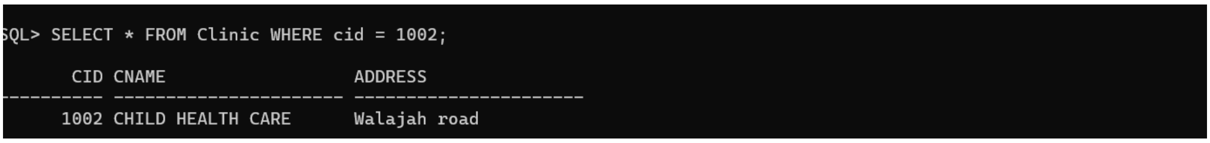


```
SQL> SELECT Did / 8 AS Division_Result FROM doctorconsultation WHERE did = '804';

DIVISION_RESULT
---------------
          100.5
```

Comparison operator (one query per operator)

Equal to (=):

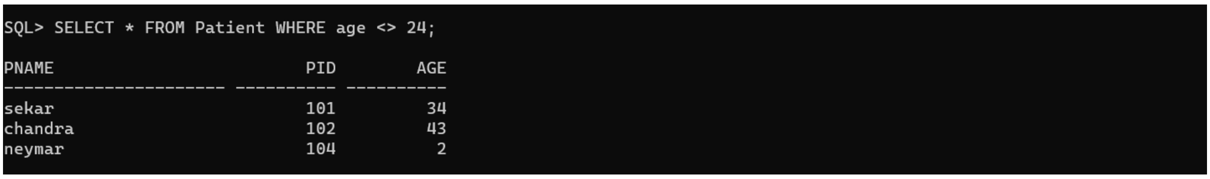
SELECT * FROM Clinic WHERE cid = 1002;



```
SQL> SELECT * FROM Clinic WHERE cid = 1002;

       CID CNAME                  ADDRESS
---------- ---------------------- ----------------------
      1002 CHILD HEALTH CARE      Walajah road
```

Not equal to (!= or <>):

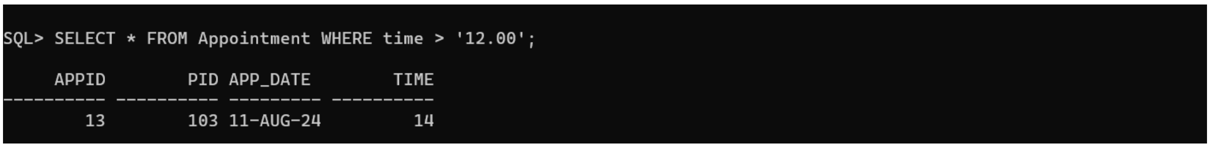
SELECT * FROM Patient WHERE age <> 24;



```
SQL> SELECT * FROM Patient WHERE age <> 24;

PNAME                         PID        AGE
---------------------- ---------- ----------
sekar                         101         34
chandra                       102         43
neymar                        104          2
```

Greater than (>):

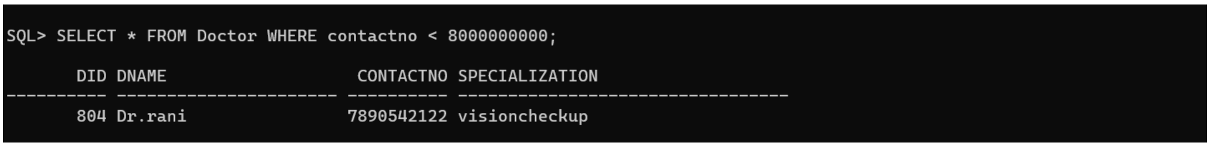
SELECT * FROM Appointment WHERE time > '12.00';



```
SQL> SELECT * FROM Appointment WHERE time > '12.00';

     APPID        PID APP_DATE        TIME
---------- ---------- --------- ----------
        13        103 11-AUG-24         14
```

Less than (<):

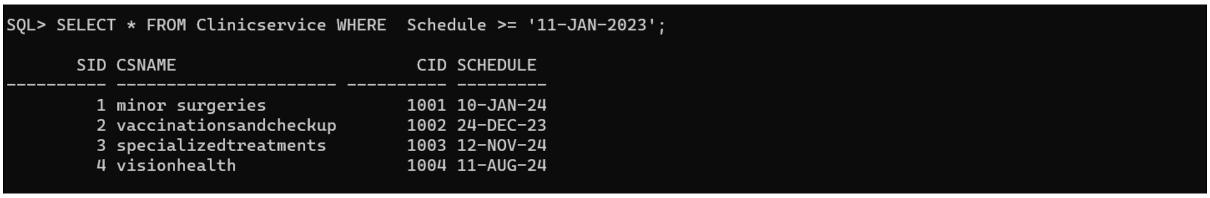
SELECT * FROM Doctor WHERE contactno < 8000000000;



```
SQL> SELECT * FROM Doctor WHERE contactno < 8000000000;

       DID DNAME                   CONTACTNO SPECIALIZATION
---------- ---------------------- ---------- ---------------------------------
       804 Dr.rani                7890542122 visioncheckup
```

Greater than or equal to (>=):

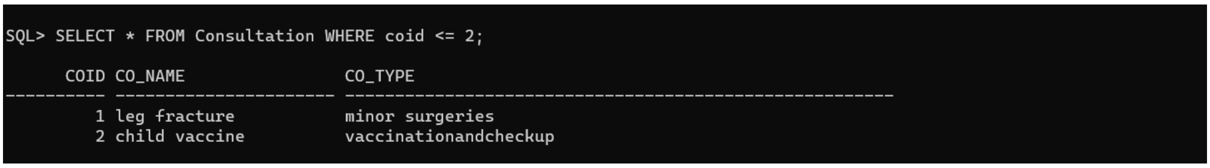
SELECT * FROM Clinicservice WHERE Schedule >= '11-JAN-2023';



```
SQL> SELECT * FROM Clinicservice WHERE  Schedule >= '11-JAN-2023';

       SID CSNAME                        CID SCHEDULE
---------- ---------------------- ---------- ---------
         1 minor surgeries              1001 10-JAN-24
         2 vaccinationsandcheckup       1002 24-DEC-23
         3 specializedtreatments        1003 12-NOV-24
         4 visionhealth                 1004 11-AUG-24
```

Less than or equal to (<=):

SELECT * FROM Consultation WHERE coid <= 2;

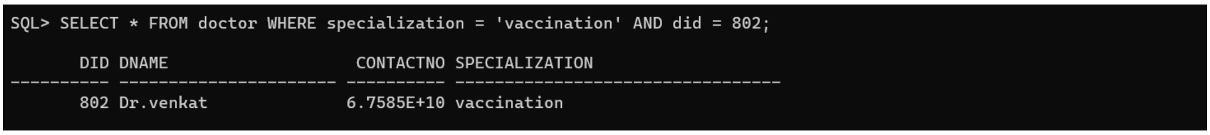


```
SQL> SELECT * FROM Consultation WHERE coid <= 2;

      COID CO_NAME                CO_TYPE
---------- ---------------------- -------------------------------------------------------
         1 leg fracture           minor surgeries
         2 child vaccine          vaccinationandcheckup
```

Logical operator (Note: one query per operator)

AND Operator (Logical Conjunction):

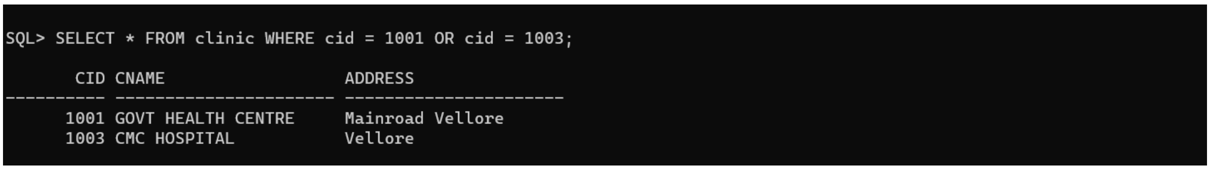
SELECT * FROM doctor WHERE specialization = 'vaccination' AND did = 802;



```
SQL> SELECT * FROM doctor WHERE specialization = 'vaccination' AND did = 802;

       DID DNAME                   CONTACTNO SPECIALIZATION
---------- ---------------------- ---------- ---------------------------------
       802 Dr.venkat              6.7585E+10 vaccination
```

OR Operator (Logical Disjunction):

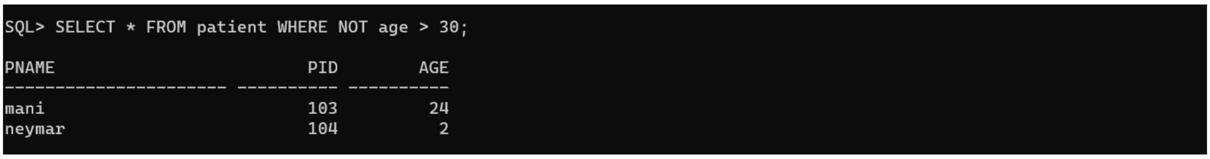
SELECT * FROM clinic WHERE cid = 1001 OR cid = 1003;



```
SQL> SELECT * FROM clinic WHERE cid = 1001 OR cid = 1003;

       CID CNAME                  ADDRESS
---------- ---------------------- ----------------------
      1001 GOVT HEALTH CENTRE     Mainroad Vellore
      1003 CMC HOSPITAL           Vellore
```

NOT Operator (Logical Negation):

SELECT * FROM patient WHERE NOT age > 30;

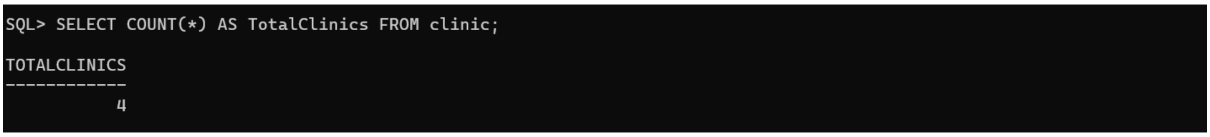


```
SQL> SELECT * FROM patient WHERE NOT age > 30;

PNAME                         PID        AGE
---------------------- ---------- ----------
mani                          103         24
neymar                        104          2
```

Group functions (queries using any two functions)

COUNT():

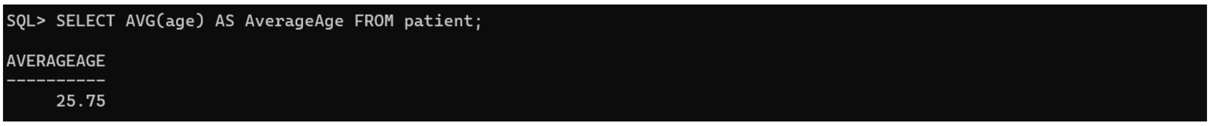
SELECT COUNT(*) AS TotalClinics FROM clinic;



```
SQL> SELECT COUNT(*) AS TotalClinics FROM clinic;

TOTALCLINICS
------------
           4
```

AVG():

SELECT AVG(age) AS AverageAge FROM patient;

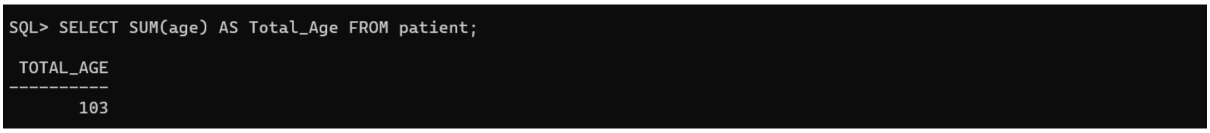


```
SQL> SELECT AVG(age) AS AverageAge FROM patient;

AVERAGEAGE
----------
     25.75
```

Numeric function(queries using any five character function)

SUM function:

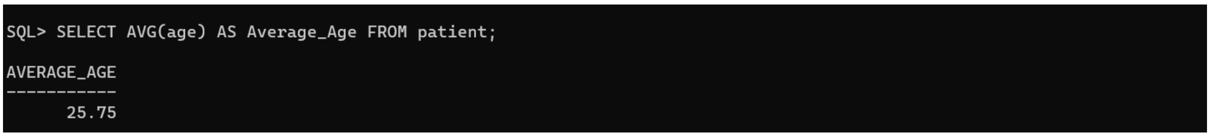
SELECT SUM(age) AS Total_Age FROM patient;



```
SQL> SELECT SUM(age) AS Total_Age FROM patient;

 TOTAL_AGE
----------
       103
```

AVG function:

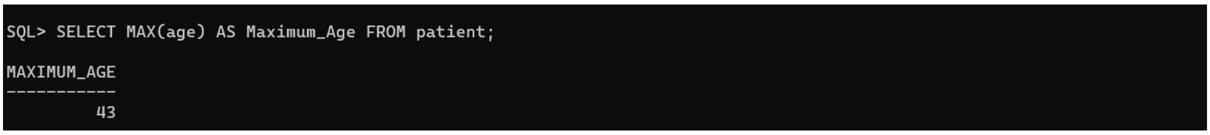
SELECT AVG(age) AS Average_Age FROM patient;



```
SQL> SELECT AVG(age) AS Average_Age FROM patient;

AVERAGE_AGE
-----------
      25.75
```

MAX function:

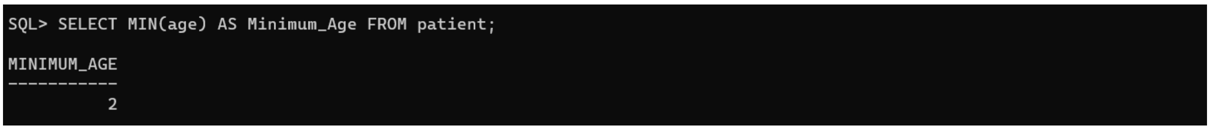
SELECT MAX(age) AS Maximum_Age FROM patient;



```
SQL> SELECT MAX(age) AS Maximum_Age FROM patient;

MAXIMUM_AGE
-----------
         43
```

MIN function:

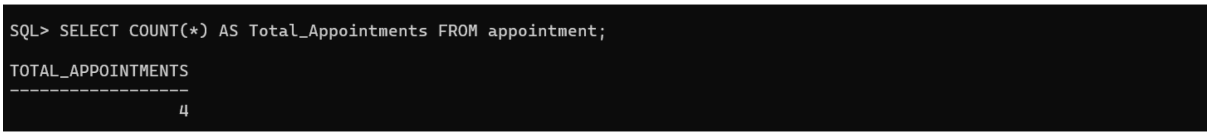
SELECT MIN(age) AS Minimum_Age FROM patient;



```
SQL> SELECT MIN(age) AS Minimum_Age FROM patient;

MINIMUM_AGE
-----------
          2
```

COUNT function:

SELECT COUNT(*) AS Total_Appointments FROM appointment;

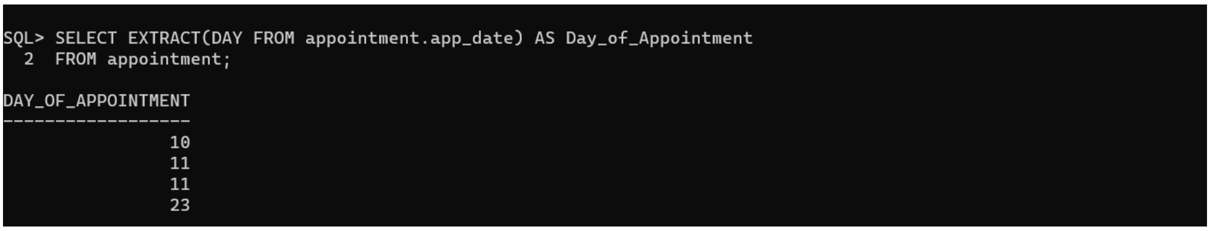


```
SQL> SELECT COUNT(*) AS Total_Appointments FROM appointment;

TOTAL_APPOINTMENTS
------------------
                 4
```

Date functions(queries using any five character functions)

Extracting Day:

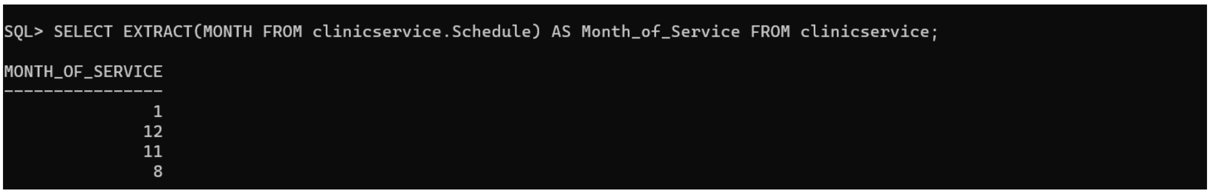
SELECT EXTRACT(DAY FROM appointment.app_date) AS Day_of_Appointment FROM appointment;



```
SQL> SELECT EXTRACT(DAY FROM appointment.app_date) AS Day_of_Appointment
  2  FROM appointment;

DAY_OF_APPOINTMENT
------------------
                10
                11
                11
                23
```

Extracting Month:

SELECT EXTRACT(MONTH FROM clinicservice.Schedule) AS Month_of_Service FROM clinicservice;

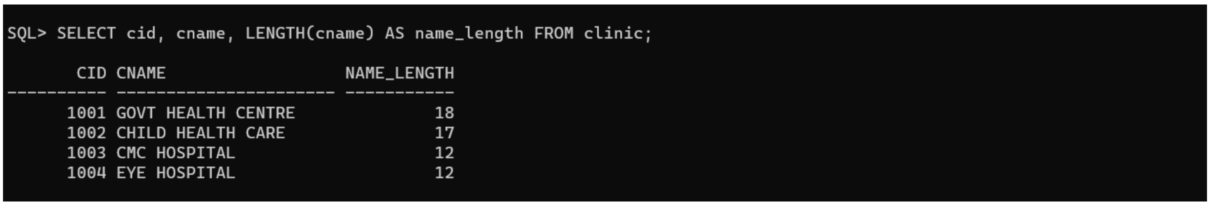


```
SQL> SELECT EXTRACT(MONTH FROM clinicservice.Schedule) AS Month_of_Service FROM clinicservice;

MONTH_OF_SERVICE
----------------
               1
              12
              11
               8
```

Character functions (queries using any five character functions)

LENGTH Function:

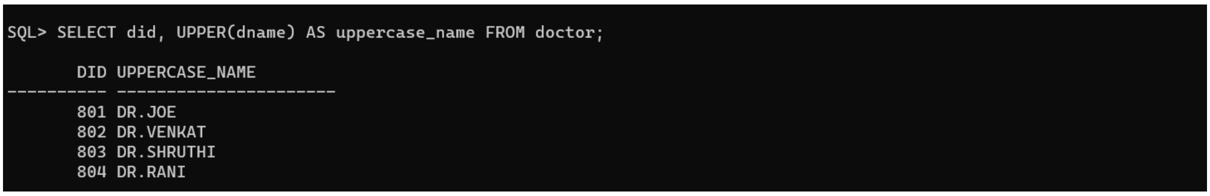
SELECT cid, cname, LENGTH(cname) AS name_length FROM clinic;



```
SQL> SELECT cid, cname, LENGTH(cname) AS name_length FROM clinic;

       CID CNAME                  NAME_LENGTH
---------- ---------------------- -----------
      1001 GOVT HEALTH CENTRE              18
      1002 CHILD HEALTH CARE               17
      1003 CMC HOSPITAL                    12
      1004 EYE HOSPITAL                    12
```

UPPER Function:

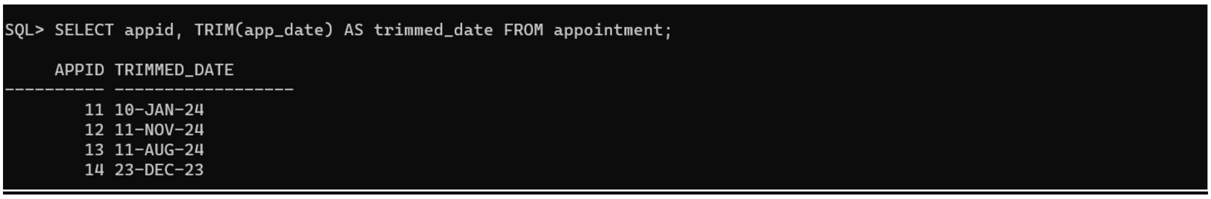
SELECT did, UPPER(dname) AS uppercase_name FROM doctor;



```
SQL> SELECT did, UPPER(dname) AS uppercase_name FROM doctor;

       DID UPPERCASE_NAME
---------- ----------------------
       801 DR.JOE
       802 DR.VENKAT
       803 DR.SHRUTHI
       804 DR.RANI
```

Trim function:

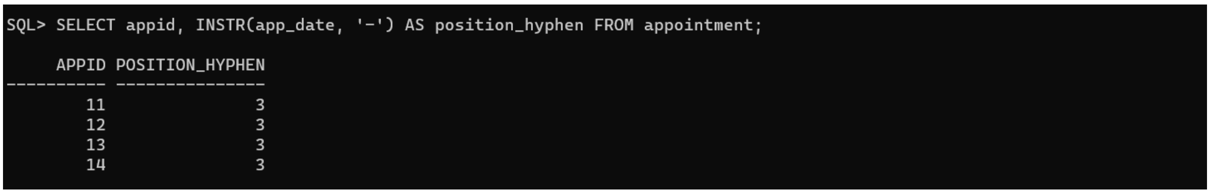
SELECT appid, TRIM(app_date) AS trimmed_date FROM appointment;



```
SQL> SELECT appid, TRIM(app_date) AS trimmed_date FROM appointment;

     APPID TRIMMED_DATE
---------- ------------------
        11 10-JAN-24
        12 11-NOV-24
        13 11-AUG-24
        14 23-DEC-23
```

Instr :

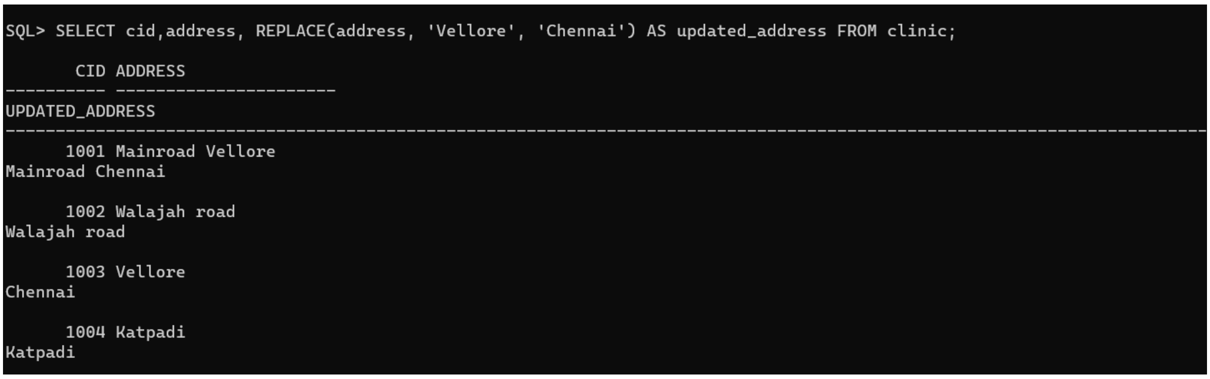
SELECT appid, INSTR(app_date, '-') AS position_hyphen FROM appointment;



```
SQL> SELECT appid, INSTR(app_date, '-') AS position_hyphen FROM appointment;

     APPID POSITION_HYPHEN
---------- ---------------
        11               3
        12               3
        13               3
        14               3
```

REPLACE Function:

SELECT cid,address, REPLACE(address, 'Vellore', 'Chennai') AS updated_address FROM clinic;

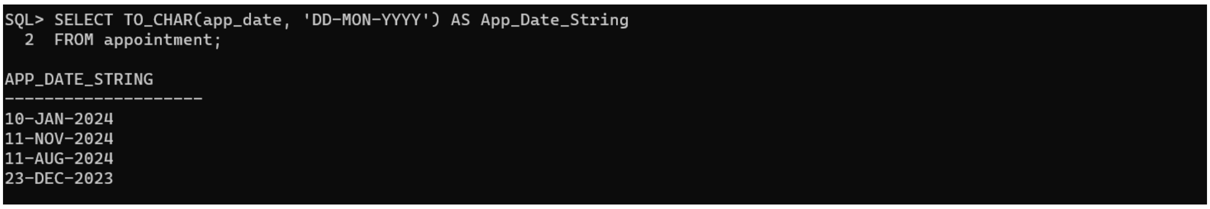


```
SQL> SELECT cid,address, REPLACE(address, 'Vellore', 'Chennai') AS updated_address FROM clinic;

       CID ADDRESS
---------- ----------------------
UPDATED_ADDRESS
------------------------------------------------------------------------------------------------------------------------
      1001 Mainroad Vellore
Mainroad Chennai

      1002 Walajah road
Walajah road

      1003 Vellore
Chennai

      1004 Katpadi
Katpadi
```

Conversion functions (one query per function (to_char, to_date, to_number))

TO_CHAR Function:

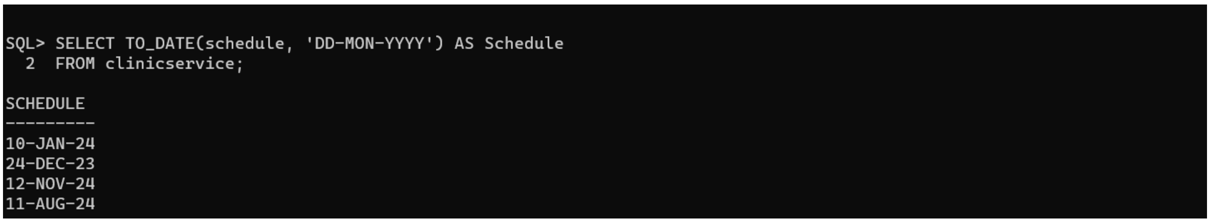
SELECT TO_CHAR(app_date, 'DD-MON-YYYY') AS App_Date_String FROM appointment;



```
SQL> SELECT TO_CHAR(app_date, 'DD-MON-YYYY') AS App_Date_String
  2  FROM appointment;

APP_DATE_STRING
--------------------
10-JAN-2024
11-NOV-2024
11-AUG-2024
23-DEC-2023
```

TO_DATE Function:

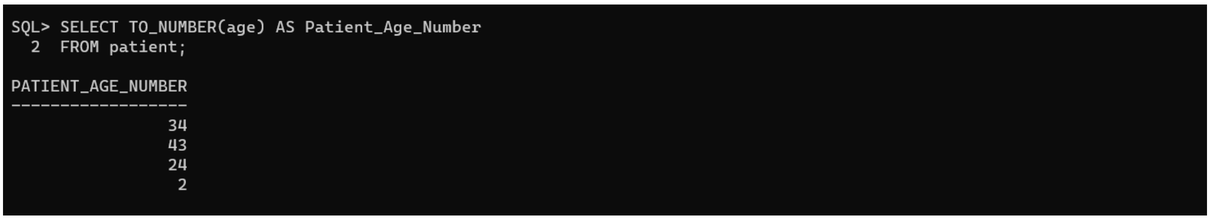
SELECT TO_DATE(schedule, 'DD-MON-YYYY') AS Schedule FROM clinicservice;



```
SQL> SELECT TO_DATE(schedule, 'DD-MON-YYYY') AS Schedule
  2  FROM clinicservice;

SCHEDULE
---------
10-JAN-24
24-DEC-23
12-NOV-24
11-AUG-24
```

TO_NUMBER Function:

SELECT TO_NUMBER(age) AS Patient_Age_Number FROM patient;

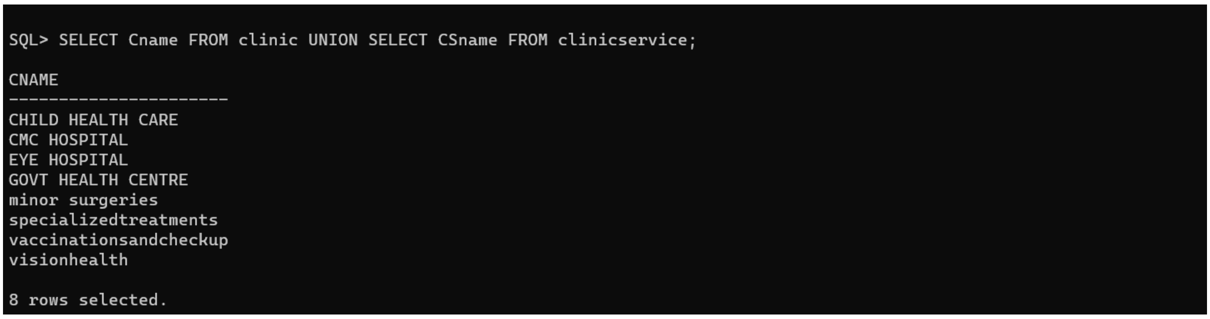


```
SQL> SELECT TO_NUMBER(age) AS Patient_Age_Number
  2  FROM patient;

PATIENT_AGE_NUMBER
------------------
                34
                43
                24
                 2
```

Set operator (queries using any two set operators)

Union Operation:

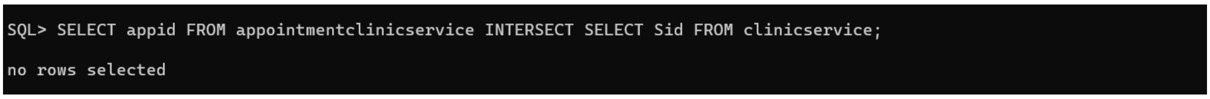
SELECT Cname FROM clinic UNION SELECT CSname FROM clinicservice;



```
SQL> SELECT Cname FROM clinic UNION SELECT CSname FROM clinicservice;

CNAME
----------------------
CHILD HEALTH CARE
CMC HOSPITAL
EYE HOSPITAL
GOVT HEALTH CENTRE
minor surgeries
specializedtreatments
vaccinationsandcheckup
visionhealth

8 rows selected.
```

Intersection Operation:

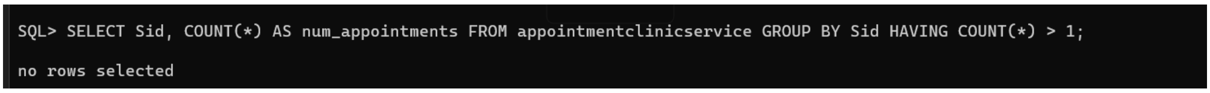
SELECT appid FROM appointmentclinicservice INTERSECT SELECT Sid FROM clinicservice;



```
SQL> SELECT appid FROM appointmentclinicservice INTERSECT SELECT Sid FROM clinicservice;

no rows selected
```

Group by and having(one query):

SELECT Sid, COUNT(*) AS num_appointments FROM appointmentclinicservice GROUP BY Sid HAVING COUNT(*) > 1;

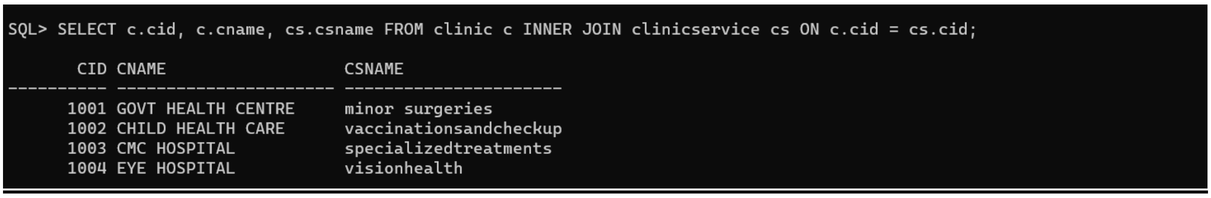


```
SQL> SELECT Sid, COUNT(*) AS num_appointments FROM appointmentclinicservice GROUP BY Sid HAVING COUNT(*) > 1;

no rows selected
```

Join (3 queries):

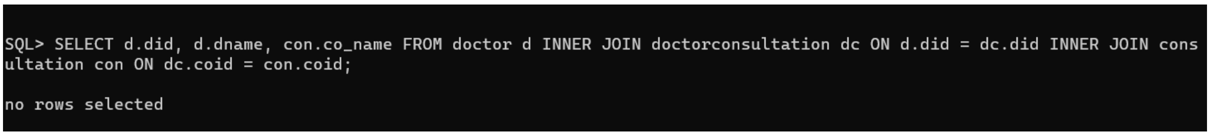
Inner join:

SELECT c.cid, c.cname, cs.csname FROM clinic c INNER JOIN clinicservice cs ON c.cid = cs.cid;



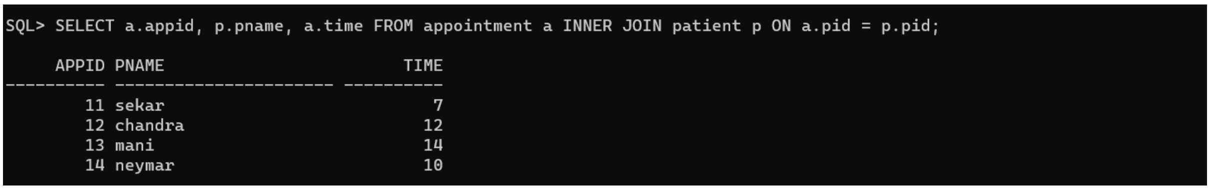
```
SQL> SELECT c.cid, c.cname, cs.csname FROM clinic c INNER JOIN clinicservice cs ON c.cid = cs.cid;

       CID CNAME                  CSNAME
---------- ---------------------- ----------------------
      1001 GOVT HEALTH CENTRE     minor surgeries
      1002 CHILD HEALTH CARE      vaccinationsandcheckup
      1003 CMC HOSPITAL           specializedtreatments
      1004 EYE HOSPITAL           visionhealth
```

SELECT d.did, d.dname, con.co_name FROM doctor d INNER JOIN doctorconsultation dc ON d.did = dc.did INNER JOIN consultation con ON dc.coid = con.coid;



```
SQL> SELECT d.did, d.dname, con.co_name FROM doctor d INNER JOIN doctorconsultation dc ON d.did = dc.did INNER JOIN cons
ultation con ON dc.coid = con.coid;

no rows selected
```

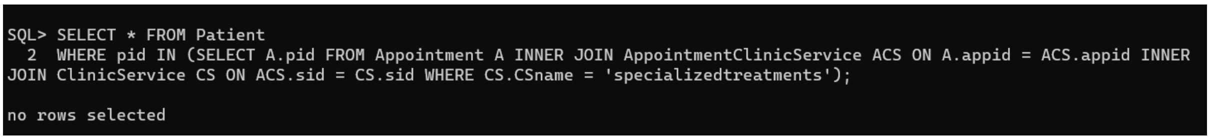
SELECT a.appid, p.pname, a.time FROM appointment a INNER JOIN patient p ON a.pid = p.pid;



```
SQL> SELECT a.appid, p.pname, a.time FROM appointment a INNER JOIN patient p ON a.pid = p.pid;

     APPID PNAME                        TIME
---------- ---------------------- ----------
        11 sekar                           7
        12 chandra                        12
        13 mani                           14
        14 neymar                         10
```

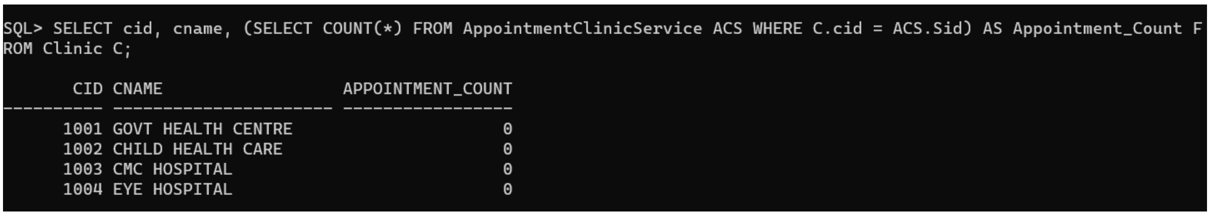
Sub query(3 queries):

SELECT * FROM Patient WHERE pid IN (SELECT A.pid FROM Appointment A INNER JOIN AppointmentClinicService ACS ON A.appid = ACS.appid INNER JOIN ClinicService CS ON ACS.sid = CS.sid WHERE CS.CSname = 'specializedtreatments');



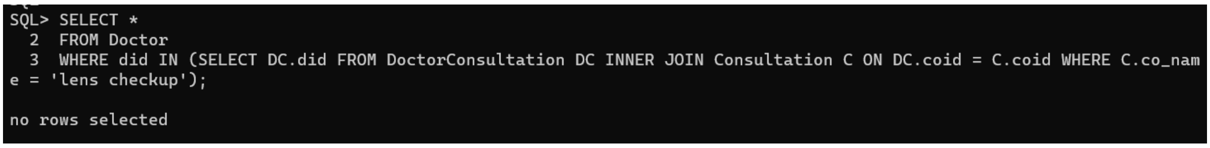
```
SQL> SELECT * FROM Patient
  2  WHERE pid IN (SELECT A.pid FROM Appointment A INNER JOIN AppointmentClinicService ACS ON A.appid = ACS.appid INNER
JOIN ClinicService CS ON ACS.sid = CS.sid WHERE CS.CSname = 'specializedtreatments');

no rows selected
```

SELECT cid, cname, (SELECT COUNT(*) FROM AppointmentClinicService ACS WHERE C.cid = ACS.Sid) AS Appointment_Count FROM Clinic C;



```
SQL> SELECT cid, cname, (SELECT COUNT(*) FROM AppointmentClinicService ACS WHERE C.cid = ACS.Sid) AS Appointment_Count F
ROM Clinic C;

       CID CNAME                  APPOINTMENT_COUNT
---------- ---------------------- -----------------
      1001 GOVT HEALTH CENTRE                     0
      1002 CHILD HEALTH CARE                      0
      1003 CMC HOSPITAL                           0
      1004 EYE HOSPITAL                           0
```

SELECT * FROM Doctor WHERE did IN (SELECT DC.did FROM DoctorConsultation DC INNER JOIN Consultation C ON DC.coid = C.coid WHERE C.co_name = 'lens checkup');



```
SQL> SELECT *
  2  FROM Doctor
  3  WHERE did IN (SELECT DC.did FROM DoctorConsultation DC INNER JOIN Consultation C ON DC.coid = C.coid WHERE C.co_nam
e = 'lens checkup');

no rows selected
```

CONCLUSION :

A doctor appointment system's significance lies in its ability to streamline healthcare processes, optimize patient-doctor interactions, and enhance overall medical service delivery. By integrating various entities like patient, consultation, appointment, clinic, clinic service, and doctor, this system fosters a cohesive and efficient healthcare environment.

THANK YOU