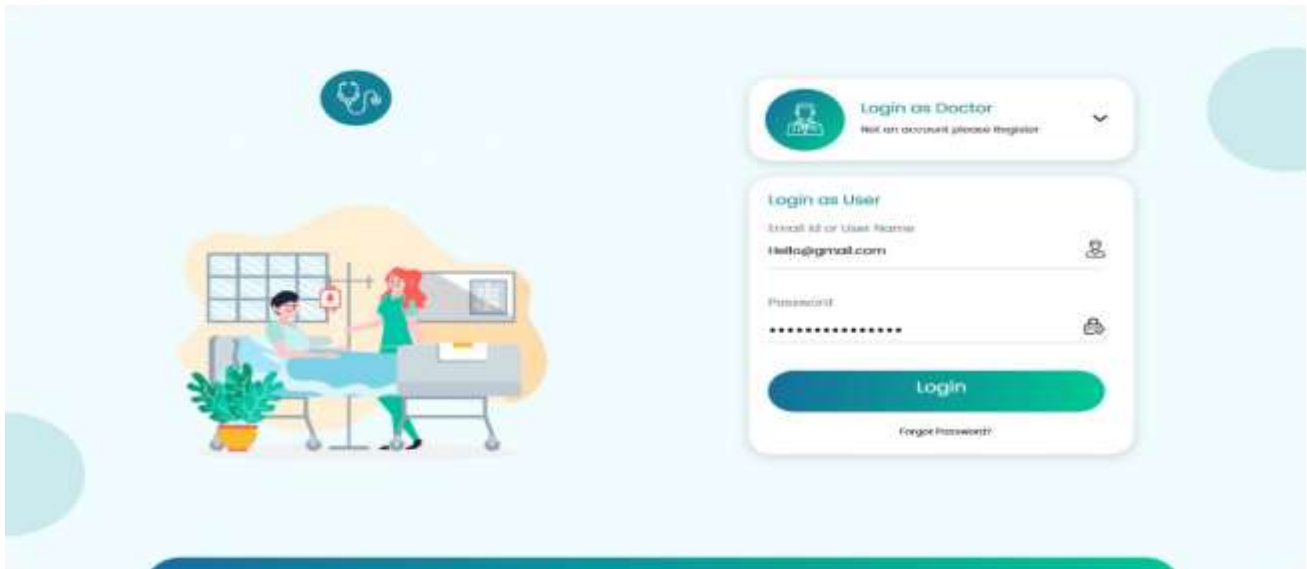


HOSPITAL APPOINTMENT BOOKING MANAGEMENT



ABSTRACT:

The main objective of the project is to implement all the SQL query command based on a particular theme in oracle for better understanding in the concepts of data definition, manipulation languages and the constraints involved.

INTRODUCTION: (THEME OF THE PROJECT)

The project “HOSPITAL APPOINTMENT BOOKING MANAGEMENT” contains seven (7) tables where each table is interconnected to one another. The tables connected are patient table, doctor table, clinic table, schedule table, consultation table, reservation table and fees table.

Patient table contains the basic details about the patient; doctor table contains the specialization and the status of the doctor. Clinic table contains the details and the availability of the clinic. The schedule tables schedule and allots to doctor. Consultation table deals with the type of treatment or the details of the consultation of the patient; reservation table allots to patient and doctor and reserves the appointment and the fees table deals with the consultation fees transaction.

PROJECT CONTENT:

- ER diagram
- Overall schema
- DDL(CREATE,ALTER,DROP,RENAME)
- DML(SELECT,INSERT,UPDATE,DELETE)
- Other functions
- Test cases
- Error captured

ER DIAGRAM:

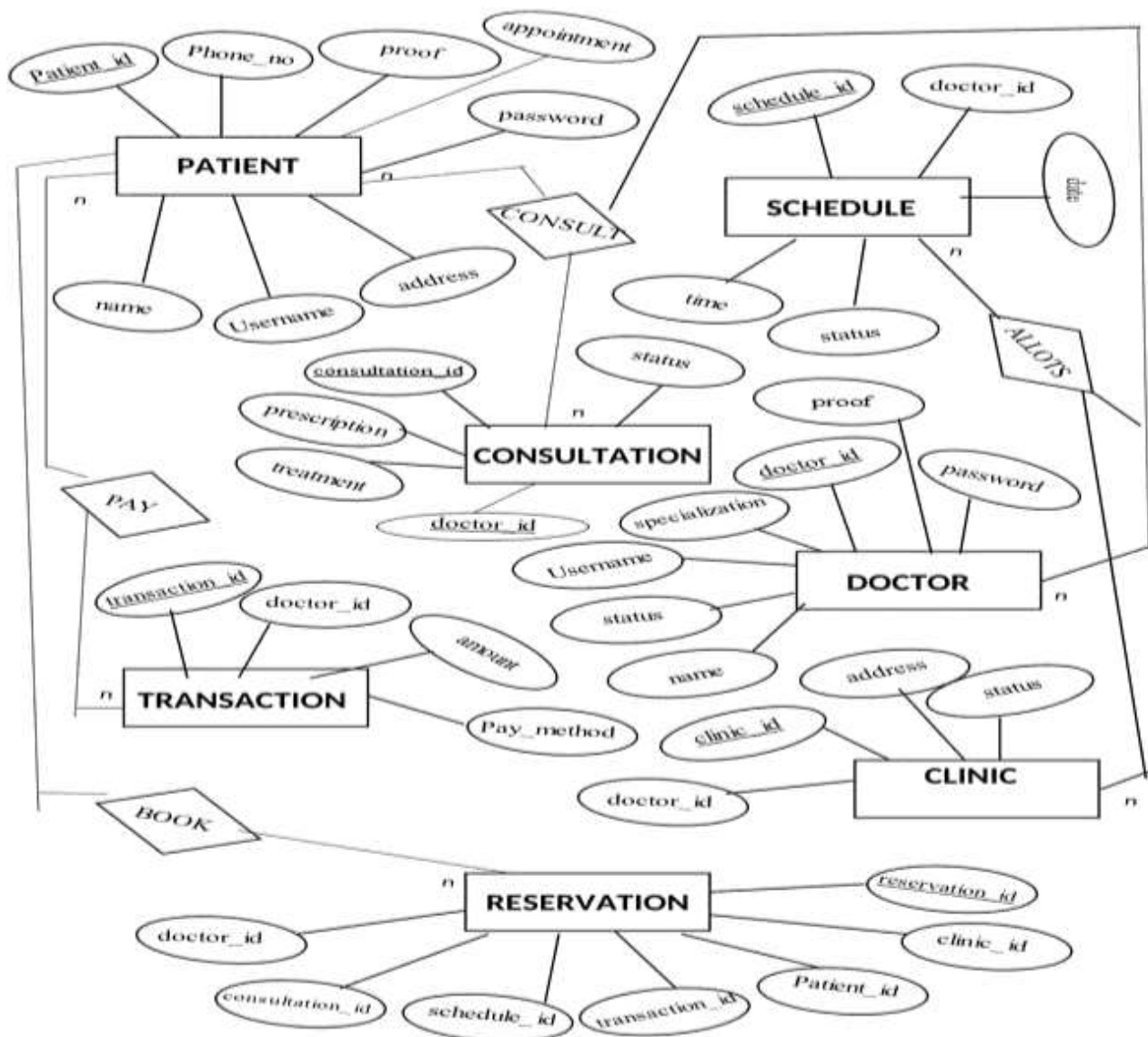


TABLE NO.02

TABLE NAME: DOCTOR

PRIMARY KEY: doctor_id

```
SQL> create table DOCTOR (doctor_id number(10) PRIMARY KEY, name varchar(20), specialization varchar(20), user_name varchar(10) NOT NULL, password varchar(10) NOT NULL, address varchar(20), proof varchar(10), status varchar(15));
```

Table created.

```
SQL> desc DOCTOR;
```

Name	Null?	Type
DOCTOR_ID	NOT NULL	NUMBER(10)
NAME		VARCHAR2(20)
SPECIALIZATION		VARCHAR2(20)
USER_NAME	NOT NULL	VARCHAR2(10)
PASSWORD	NOT NULL	VARCHAR2(10)
ADDRESS		VARCHAR2(20)
PROOF		VARCHAR2(10)
STATUS		VARCHAR2(15)

TABLE NO.03

TABLE NAME: CLINIC

PRIMARY KEY: clinic_id

```
SQL> create table CLINIC (clinic_id number(10) PRIMARY KEY, doctor_id number(10) NOT NULL REFERENCES DOCTOR(doctor_id), address varchar(20), status varchar(15));
```

Table created.

```
SQL> desc CLINIC;
```

Name	Null?	Type
CLINIC_ID	NOT NULL	NUMBER(10)
DOCTOR_ID	NOT NULL	NUMBER(10)
ADDRESS		VARCHAR2(20)
STATUS		VARCHAR2(15)

TABLE NO.04

TABLE NAME: CLINIC_SCHEDULE

PRIMARY KEY: schedule_id

```
SQL> create table CLINIC_SCHEDULE (schedule_id number(10) PRIMARY KEY, doctor_id number(10) NOT NULL REFERENCES DOCTOR(doctor_id), status varchar(15), time varchar(10));
```

Table created.

```
SQL> desc CLINIC_SCHEDULE;
```

Name	Null?	Type
SCHEDULE_ID	NOT NULL	NUMBER(10)
DOCTOR_ID	NOT NULL	NUMBER(10)
STATUS		VARCHAR2(15)
TIME		VARCHAR2(10)
SDATE		VARCHAR2(20)

TABLE NO.05

TABLE NAME: FEES

PRIMARY KEY: transaction_id

```
SQL> create table FEES (transaction_id number(10)PRIMARY KEY,doctor_id number(10)NOT NULL REFERENCES DOCTOR(doctor_id),pay_method varchar(10),amount number(5));
```

Table created.

```
SQL> desc FEES;
```

Name	Null?	Type
TRANSACTION_ID	NOT NULL	NUMBER(10)
DOCTOR_ID	NOT NULL	NUMBER(10)
PAY_METHOD		VARCHAR2(10)
AMOUNT		NUMBER(5)

TABLE NO.06

TABLE NAME: CONSULTATION

PRIMARY KEY: consultation_id

```
SQL> create table CONSULTATION (consultation_id number(10)PRIMARY KEY,status varchar(10),treatment varchar(20),prescription varchar(10));
```

Table created.

```
SQL> desc CONSULTATION;
```

Name	Null?	Type
CONSULTATION_ID	NOT NULL	NUMBER(10)
STATUS		VARCHAR2(10)
TREATMENT		VARCHAR2(20)
PRESCRIPTION		VARCHAR2(10)

TABLE NO.07

TABLE NAME: RESERVATION

PRIMARY KEY: reservation_id

```
SQL> create table RESERVATION (reservation_id number(10)PRIMARY KEY,doctor_id number(10) REFERENCES DOCTOR,patient_id number(10)REFERENCES PATIENT,schedule_id number(10)REFERENCES CLINIC_SCHEDULE,consultation_id number(10)REFERENCES CONSULTATION,transaction_id number(10)REFERENCES FEES);
```

Table created.

```
SQL> desc RESERVATION;
```

Name	Null?	Type
RESERVATION_ID	NOT NULL	NUMBER(10)
DOCTOR_ID		NUMBER(10)
PATIENT_ID		NUMBER(10)
SCHEDULE_ID		NUMBER(10)
CONSULTATION_ID		NUMBER(10)
TRANSACTION_ID		NUMBER(10)

2. ALTER WITH MODIFY:

SYNTAX: alter table table_name modify column_name datatype(value);

```
SQL> alter table patient modify name varchar(12);
Table altered.
SQL> alter table patient modify address varchar(12);
Table altered.
SQL> alter table patient modify proof varchar(12);
Table altered.
SQL> alter table patient modify appointment varchar(12);
Table altered.
SQL> alter table patient modify address varchar(12);
Table altered.
```

3. ALTER WITH ADD:

SYNTAX: alter table table_name add column_name datatype(value);

```
SQL> alter table CLINIC_SCHEDULE add sdate varchar(20);
Table altered.
```

4. DROP TABLE:

SYNTAX: alter table patient drop column proof;

```
SQL> alter table patient drop column proof;
Table altered.
SQL> select * from patient;
```

PATIENT_ID	NAME	USER_NAME	PASSW	ADDRESS	PHONE_NO	APPOINTMENT
2203	Abdul	Abdul	Abz87	Tambaram	8339873450	21-oct-2022
2202	Yamini	Yamini	Yaz22	Chrompet	9449873450	21-oct-2022
2201	Anusha	Anusha	Anu22	Perambur	9444290873	20-oct-2022

SYNTAX: drop table consultation2;

```
SQL> drop table consultation2;
Table dropped.
```

5. RENAME:

SYNTAX: alter table patient rename column phone_no to phno;

```
SQL> alter table patient rename column phone_no to phno;
Table altered.
SQL> desc patient;
```

Name	Null?	Type
PATIENT_ID	NOT NULL	NUMBER(18)
NAME		VARCHAR2(8)
USER_NAME	NOT NULL	VARCHAR2(10)
PASSWORD	NOT NULL	VARCHAR2(5)
ADDRESS		VARCHAR2(12)
PHNO		NUMBER(18)
APPOINTMENT		VARCHAR2(12)

```
SQL>
```

SYNTAX: alter table patient rename to patient_details;

```
SQL> alter table patient rename to patient_details;
Table altered.
SQL> desc patient;
ERROR:
ORA-04043: object patient does not exist
SQL> desc patient_details;
```

Name	Null?	Type
PATIENT_ID	NOT NULL	NUMBER(18)
NAME		VARCHAR2(8)
USER_NAME	NOT NULL	VARCHAR2(10)
PASSWORD	NOT NULL	VARCHAR2(5)
ADDRESS		VARCHAR2(12)
PHNO		NUMBER(18)
APPOINTMENT		VARCHAR2(12)

DATA MANIPULATION LANGUAGE:

1. SELECT STATEMENT

A) SELECTING WHOLE TABLE.

SYNTAX: select * from tablename;

select * from patient;

```
SQL> select * from patient;
```

PATIENT_ID	NAME	USER_NAME	PASSW	ADDRESS	PHONE_NO	PROOF	APPOINTMENT
2203	Abdul	Abdul	Abz87	Tambaram	8339873450	-464	21-oct-2022
2202	Yamini	Yamini	Yaz22	Chrompet	9449873450	-264	21-oct-2022
2201	Anusha	Anusha	Anu22	Perambur	9444290873	-191	20-oct-2022

B) SELECTING USING WHERE.

SYNTAX: select * from patient where address='Chrompet';

```
SQL> select * from patient where address='Chrompet';
```

PATIENT_ID	NAME	USER_NAME	PASSW	ADDRESS	PHONE_NO	PROOF	APPOINTMENT
2202	Yamini	Yamini	Yaz22	Chrompet	9449873450	-264	21-oct-2022

```
SQL>
```

C) SELECTING PARTICULAR COLUMN.

SYNTAX: select name,appointment from patient;

```
SQL> select name,appointment from patient;
```

NAME	APPOINTMENT
Abdul	21-oct-2022
Yamini	21-oct-2022
Anusha	20-oct-2022

```
SQL>
```


2. INSERTING VALUES TO TABLES

TABLE NO.01

TABLE NAME: PATIENT

insert into patient

values(2203,'Abdul','Abdul','Abz87','Tambaram',8339873450,523-987,'21-oct-2022')

insert into patient

values(2202,'Yamini','Yamini','Yaz22','Chrompet',9449873450,323-587,'21-oct-2022')

insert into patient

values(2201,'Anusha','Anusha','Anu22','Perambur',9444290873,376-567,'20-oct-2022')

```
SQL> insert into patient values(2201,'Anusha','Anusha','Anu22','Perambur',9444290873,376-567,'20-oct-2022');
1 row created.

SQL> insert into patient values(2202,'Yamini','Yamini','Yaz22','Chrompet',9449873450,323-587,'21-oct-2022');
1 row created.

SQL> insert into patient values(2203,'Abdul','Abdul','Abz87','Tambaram',8339873450,523-987,'21-oct-2022');
1 row created.
```

```
SQL> select * from patient;
```

PATIENT_ID	NAME	USER_NAME	PASSW	ADDRESS	PHONE_NO	PROOF	APPOINTMENT
2203	Abdul	Abdul	Abz87	Tambaram	8339873450	-464	21-oct-2022
2202	Yamini	Yamini	Yaz22	Chrompet	9449873450	-264	21-oct-2022
2201	Anusha	Anusha	Anu22	Perambur	9444290873	-191	20-oct-2022

TABLE NO.02

TABLE NAME: DOCTOR

insert into DOCTOR values(32043,'Dr.Ajith Prasad','General Surgeon','Ajith','Aji32043','Chennai',971-0201-750,'Available')

insert into DOCTOR values(31914,'Dr.Shanmuga Priya','Gynaecologist','Priya','Priya31914','Ashok Nagar',938-1065-016,'Available')

insert into DOCTOR values(60324,'Dr.Anand Vijayan','Cardiologist','Anand','Anand60324','Vanagaram',938-1729-424,'Available')

```
1* insert into DOCTOR values(32043,'Dr.Ajith Prasad','General Surgeon','Ajith','Aji32043','Chennai',971-0201-750,'Available')
2 ;

1 row created.

SQL> ed
Wrote file afiedt.buf

1* insert into DOCTOR values(31914,'Dr.Shanmuga Priya','Gynaecologist','Priya','Priya31914','Ashok Nagar',938-1065-016,'Available')
2 ;

1 row created.

SQL> ed
Wrote file afiedt.buf

1* insert into DOCTOR values(60324,'Dr.Anand Vijayan','Cardiologist','Anand','Anand60324','Vanagaram',938-1729-424,'Available')
2 ;

1 row created.
```

```
SQL> select * from DOCTOR;
```

DOCTOR_ID	NAME	SPECIALIZATION	USER_NAME
32043	Dr.Ajith Prasad	General Surgeon	Ajith
Aji32043	Chennai	20	Available
31914	Dr.Shanmuga Priya	Gynaecologist	Priya
Priya31914	Ashok Nagar	-143	Available
60324	Dr.Anand Vijayan	Cardiologist	Anand
Anand60324	Vanagaram	-1215	Available

TABLE NO.03

TABLE NAME: CLINIC

insert into CLINIC values(8060,31914,'Nungambakkam', 'Available');
insert into CLINIC values(1120,60324,'Porur', 'Available');
insert into CLINIC values(1120,32043,'Mogappair', 'Available');
insert into CLINIC values(4301, 60324,'Ambattur', 'Available');
insert into CLINIC values(20034,31914,'Ramapuram', 'Available');

```
SQL> insert into CLINIC values(8060,31914,'Nungambakkam','Available');  
1 row created.  
  
SQL> insert into CLINIC values(1120,60324,'Porur','Available');  
1 row created.  
  
SQL> insert into CLINIC values(1220,32043,'Mogappair','Available');  
1 row created.
```

```
SQL> select * from CLINIC ;
```

CLINIC_ID	DOCTOR_ID	ADDRESS	STATUS
8060	31914	Nungambakkam	Available
1120	60324	Porur	Available
1220	32043	Mogappair	Available
4301	60324	Ambattur	Available
20034	31914	Ramapuram	Available

TABLE NO.04

TABLE NAME: CLINIC_SCHEDULE

insert into CLINIC_SCHEDULE values(4188,32043,'Waiting','7 pm');
insert into CLINIC_SCHEDULE values(1119,31914,'Completed','10 am');
insert into CLINIC_SCHEDULE values(2105,60324,'In Review','5 pm');

```
SQL> insert into CLINIC_SCHEDULE values(4188,32043,'Waiting','7 pm');  
1 row created.  
  
SQL> insert into CLINIC_SCHEDULE values(1119,31914,'Completed','10 am');  
1 row created.  
  
SQL> insert into CLINIC_SCHEDULE values(2105,60324,'In Review','5 pm');  
1 row created.
```

Select * from CLINIC_SCHEDULE;

```
SQL> select * from CLINIC_SCHEDULE;  
  
SCHEDULE_ID DOCTOR_ID STATUS      TIME  
-----  
4188        32043 Waiting      7 pm  
1119        31914 Completed    10 am  
2105        60324 In Review    5 pm
```

TABLE NO.05

TABLE NAME: CONSULTATION

insert into CONSULTATION values(1001,'Required','Surgery','Prescribed');
insert into CONSULTATION
values(1001,'Optional','Immunotherapy','Prescribed');insert into
CONSULTATION values(1001,'Required','Allopathic medicine','Prescribed');

```
SQL> insert into CONSULTATION values(1001,'Required','Surgery','Prescribed');  
  
1 row created.  
SQL> insert into CONSULTATION values(1130,'Optional','Immunotherapy','Prescribed');  
  
1 row created.  
SQL> insert into CONSULTATION values(1955,'Required','Allopathic medicine','Prescribed');  
  
1 row created.
```

CONSULTATION_ID	STATUS	TREATMENT	PRESCRIPTI
1001	Required	Surgery	Prescribed
1130	Optional	Immunotherapy	Prescribed
1955	Required	Allopathic medicine	Prescribed

TABLE NO.06

TABLE NAME: FEES

insert into FEES values(7717,31914,'Cash',1000);
insert into FEES values(5011,31914 ,'Gpay',480);
insert into FEES values(6230,31914,'Cash',890);

```
SQL> insert into FEES values(7717,60324,'Cash',1000);  
1 row created.  
  
SQL> insert into FEES values(5011,32043,'Gpay',480);  
1 row created.  
  
SQL> insert into FEES values(6230,31914,'Cash',890);  
1 row created.
```

```
SQL> select * from FEES;
```

TRANSACTION_ID	DOCTOR_ID	PAY_METHOD	AMOUNT
7717	60324	Cash	1000
5011	32043	Gpay	480
6230	31914	Cash	890

TABLE NO.07

TABLE NAME: RESERVATION

insert into RESERVATION values(616,32043,2203,4188,1001,7717,8060);

insert into RESERVATION values(617,31914,2202,1119,1130,5011,1220);

insert into RESERVATION values(618,32043,2201,2105,1955,6230,20034);

```
SQL> insert into RESERVATION values(616,32043,2203,4188,1001,7717,8060);
1 row created.

SQL> insert into RESERVATION values(617,31914,2202,1119,1130,5011,1220);
1 row created.

SQL> insert into RESERVATION values(618,60324,2201,2105,1955,6230,20034);
1 row created.
```

```
SQL> select * from RESERVATION;

RESERVATION_ID DOCTOR_ID PATIENT_ID SCHEDULE_ID CONSULTATION_ID TRANSACTION_ID
-----
CLINIC_ID
-----
          616          32043          2203          4188          1001          7717
          8060
          617          31914          2202          1119          1130          5011
          1220
          618          60324          2201          2105          1955          6230
          20034
```

3. UPDATE VALUES IN TABLES

SYNTAX: UPDATE PATIENT set name = 'Gowthami' where patient_id = 2203 ;

```
SQL> UPDATE PATIENT set name = 'Gowthami' where patient_id = 2203 ;
1 row updated.
SQL> select * from PATIENT;
```

PATIENT_ID	NAME	USER_NAME	PASSWORD
2203	Gowthami	Abdul	Abz87
2202	Yamini	Yamini	Yaz22
2201	Anusha	Anusha	Anu22

SYNTAX: UPDATE CLINIC_SCHEDULE set status = 'Completed' where schedule_id = 4188 ;

```
SQL> UPDATE CLINIC_SCHEDULE set status = 'Completed' where schedule_id = 4188;
1 row updated.
SQL> select * from CLINIC_SCHEDULE;
```

SCHEDULE_ID	DOCTOR_ID	STATUS	TIME
4188	32043	Completed	7 pm
1119	31914	Completed	10 am
2105	60324	In Review	5 pm

4. DELETE VALUES IN TABLES

A) DELETING SPECIFIC ROW

SYNTAX: delete patient where patient_id=2204;

```
SQL> delete from patient where patient_id=2204;
1 row deleted.
```

```
SQL> select * from patient;
```

PATIENT_ID	NAME	USER_NAME	PASSW	ADDRESS	PHNO	APPOINTMENT
2203	Abdul	Abdul	Abz87	Tambaram	8339873450	21-oct-2022
2202	Yamini	Yamini	Yaz22	Chrompet	9449873450	21-oct-2022
2201	Anusha	Anusha	Anu22	Perambur	9444290873	20-oct-2022

OTHER FUNCTIONS:

1. OPERATOR

Finding the status of clinic which is not available:

```
SQL> select * from CLINIC where status='not available';
```

CLINIC_ID	DOCTOR_ID	ADDRESS	STATUS
8060	31914	Nungambakkam	not available

Finding a specialized doctor's availability:

```
SQL> select * from DOCTOR where specialization='Gynaecologist' and status='Available';
```

DOCTOR_ID	NAME	SPECIALIZATION	USER_NAME
31914	Dr. Shanmuga Priya	Gynaecologist	Priya
Priya31914	Ashok Nagar	-143	Available

2. AGGREGATE FUNCTION

Adding the total fee amount paid by patients:

SUM: select sum (amount) from FEES

```
SQL> select sum(amount) from FEES;
```

SUM(AMOUNT)
2370

Finding number of Clinics available:

COUNT: select count(clinic_id) from CLINIC;

```
SQL> select count(clinic_id) from CLINIC;
```

COUNT(CLINIC_ID)
5

TEST CASES:

1. UNIQUE CONSTRIANT:

```
insert into patient values(2201,'Anusha','Anusha','Anu22','Perambur',9444290873,376-567,'20-oct-2022')
*
ERROR at line 1:
ORA-00001: unique constraint (IIMSC25.SYS_C0033538) violated
```

2. INTEGRITY CONSTRIANT:

```
SQL> insert into CLINIC values(2454,10914,'Vadapalai','Available');
insert into CLINIC values(2454,10914,'Vadapalai','Available')
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.SYS_C007557) violated - parent key not found
```

3. DEFAULT CONSTRAINT:

```
SQL> alter table CLINIC modify(status varchar(20) default('not available'));
Table altered.
SQL> insert into CLINIC(clinic_id,doctor_id,address)values(8061,31914,'chennai')
;
1 row created.
SQL> select * from clinic;
CLINIC_ID DOCTOR_ID ADDRESS STATUS
-----
8060      31914 Nungambakkam not available
8061      31914 chennai not available
```

4. CHECK CONSTRAINT:

```
alter table CONSULTATION modify(prescription varchar(20) check (prescription='prescribed'))
*
ERROR at line 1:
ORA-02293: cannot validate (SYSTEM.SYS_C003923) - check constraint violated
```

5. NOT NULL CONSTRAINT:

```
insert into patient values(2204,'priya','','','korattur','9555890762','23-sep-2022')
*
```

ERROR at line 1:
ORA-01400: cannot insert NULL into <"SYSTEM"."PATIENT"."USER_NAME">

6. SIZE CONSTRAINT VIOLATED:

```
insert into patient values(2204,'priya','priya','28888888888888888888325','korattur','c789','23-sep-2022')
*
```

ERROR at line 1:
ORA-12899: value too large for column "SYSTEM"."PATIENT"."PASSWORD" (actual: 22, maximum: 5)

7. DATATYPE CONSTRAINT VIOLATED:

```
insert into patient values(2204,'priya','priya','2325','korattur','c789','23-sep-2022')
*
```

ERROR at line 1:
ORA-01722: invalid number

ERROR CAPTURED:

1. Tried adding a column name as a foreign key which is not a primary key in its parent table.

```
SQL> create table CLINIC (clinic_id number(10) PRIMARY KEY, doctor_id number(10) REFERENCES DOCTOR(doctor_id), address varchar(20), status varchar(15) REFERENCES DOCTOR(status));
create table CLINIC (clinic_id number(10) PRIMARY KEY, doctor_id number(10) REFERENCES DOCTOR(doctor_id), address varchar(20), status varchar(15) REFERENCES DOCTOR(status));
*
ERROR at line 1:
ORA-02270: no matching unique or primary key for this column-list
```

2. Tried adding a column name which is a datatype name(keyword)

```
SQL> alter table CLINIC_SCHEDULE add date varchar(20);
alter table CLINIC_SCHEDULE add date varchar(20)
*
ERROR at line 1:
ORA-00904: : invalid identifier
```

```
SQL> alter table CLINIC_SCHEDULE add sdate varchar(20);
Table altered.
```

3. Tried to drop a table which is connected to other tables

```
SQL> drop table clinic;
drop table clinic
*
ERROR at line 1:
ORA-02449: unique/primary keys in table referenced by foreign keys
```

4. Tried creating a table with existing name

```
create table CONSULTATION (consultation_id number(18) PRIMARY KEY, status varchar(18), treatment varchar(28), prescription varchar(10))
*
ERROR at line 1:
ORA-00955: name is already used by an existing object
```

5. Syntax error

```
create table CONSULTATION (consultation_id number(18) PRIMARY KEY, status varchar(18) treatment varchar(28), prescription varchar(10));

*
ERROR at line 1:
ORA-00907: missing right parenthesis
```

6. Searched a value which does not exist and searched a value with case sensitive error in it.

PATIENT_ID	NAME	USER_NAME	PASSW	ADDRESS	PHONE_NO	PROOF	APPOINTMENT
2203	Abdul	Abdul	Abz87	Tambaram	8339873450	-464	21-oct-2022
2202	Yamini	Yamini	Yaz22	Chrompet	9449873450	-264	21-oct-2022
2201	Anusha	Anusha	Anu22	Perambur	9444290873	-191	20-oct-2022

```
SQL> select * from patient where address='chennai';
no rows selected

SQL> select * from patient where address='chrompet';
no rows selected

SQL> select * from patient where address='Chrompet';
PATIENT_ID NAME USER_NAME PASSW ADDRESS PHONE_NO PROOF APPOINTMENT
-----
2202 Yamini Yamini Yaz22 Chrompet 9449873450 -264 21-oct-2022

SQL>
```

7. Tried to add an existing column

```
alter table CONSULTATION add(prescription varchar(20) check (prescription='prescribed'))

*
ERROR at line 1:
ORA-01430: column being added already exists in table
```

CONCLUSION:

In conclusion, a database is a far more efficient mechanism to store and organize data than spreadsheets; it allows for a centralized facility that can easily be modified and quickly shared among multiple users. This beneficial decision covers the needs of the patients, staff and hospital authorities and simplifies their interactions. It has become the usual approach to manage the hospital appointments. Thus, the query commands are successfully implemented and executed.

SUBMITTED BY:

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