HOSPITAL MANAGEMENT SYSTEM

A COURSE PROJECT REPORT

in partial fulfillment of the degree

Bachelor of Technology
in
Computer Science & Engineering

By

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Submitted to

SCHOOL OF COMPUTER SCIENCE & ARTIFICIAL INTELLIGENCE

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SCHOOL OF COMPUTER SCIENCE & ARTIFICIAL INTELLIGENCE

CERTIFICATE

This is to certify that this project entitled **"HOSPITAL MANAGEMENT SYSTEM**" is the bonafide work carried out by **MAHVISH ISHAQ(2103A51473), DEEKSHITHA (2103A51456), JASHVITHA(2103A51362), NASHEER (2103A51179)** as a Course Project for the partial fulfilment to award the degree **BACHELOR OF TECHNOLOGY** in **COMPUTER SCIENCE & ENGINEERING** during the academic year 2022-2023 under our guidance and Supervision.

Supervisor **Head of the Department**

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ACKNOWLEDGEMENT

We take this opportunity to express my profound gratitude and deep regards to our guide **Mr. Mahender Reddy** sir and HOD **Dr M. Sheshikala** mam who gave our team the opportunity to do this wonderful project on the topic Hospital Management system. We thank my guide for his exemplary guidance, monitoring and constant encouragement throughout the course of this thesis. The blessing, help and guidance given by him time to time shall carry us a long way in the journey of life on which we were about to embark.

The project helped us learn how to do proper Research and we learned about many new things while doing the project. I also thank my team members for their constant encouragement to complete this project within the deadline.

ABSTRACT

- Our project Hospital Management system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. Our software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room.
- User can search availability of a doctor and the details of a patient using the id.The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist.
- It is having mainly two modules. One is at Administration Level and other one is of user i.e. of patients and doctors. The Application maintains authentication in order to access the application. Administrator task includes managing doctors information, patient's information. To achieve this aim a database was designed one for the patient and other for the doctors which the admin can access. The complaints which are given by user will be referred by authorities. The Patient modules include checking appointments, prescription. User can also pay doctor's Fee online.

INTRODUCTION

A Hospital Database Management System (HDMS) is a computer or web based system that facilities managing the functioning of a hospital or any medical set up. This system will help in making the whole functioning paperless. The hospital database includes all the necessary patient data. The disease history, test results, prescribed treatment can be accessed by doctors without much delay in order to make an accurate diagnosis and monitor the patient's health. It enables lower risks of mistakes. There are the various jobs that need to be done in a Hospital by the operational staff and Doctors. All these works are done on papers. Before All this work was done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can't remember them at that time.

EXISTING SYSTEM

There are the various jobs that need to be done in a Hospital by the operational staff and Doctors. All these works are done on papers. Before All this work was done manually by the receptionist And other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can't remember them at that time.

PROPOSED SYSTEM

Now with the introduction of hospital database system it will be easy to maintain the data without any ambiguity. The hospital database includes all the necessary patient data.
The disease history, lab reports, prescribed treatment can be accessed by doctors without much delay in order to make an accurate diagnosis and monitor the patient's health. It enables lower risks of mistakes.
The project maintains two levels of users:
• Administrator.
• User Level-Data Entry Operator.
Main facilities in this project are:
• Maintaining records of indoor/outdoor patients.
• Maintaining patient’s test and examinations details.
• Providing different test facilities to a Doctor for doctor for diagnosis of a patients.
• Maintaining patient’s prescription, medicine and diet advice details.
• Providing billing details for indoor/outdoor patients.
• Results of tests, prescription, precautions and diet advice will be automatically updated in the database.
• In this project collection of data in form different pathology labs.
• Related test reports, patient’s details report, billing reports can be generated as per user requirements.
• User or administrator can search a patient’s record by his id.

Conceptual Schema:

1) Patient:
-> has a unique patient_id.
-> has a patient_name.
-> has a patient_phn no.
->has a patient_address.
->has a patient_disease.

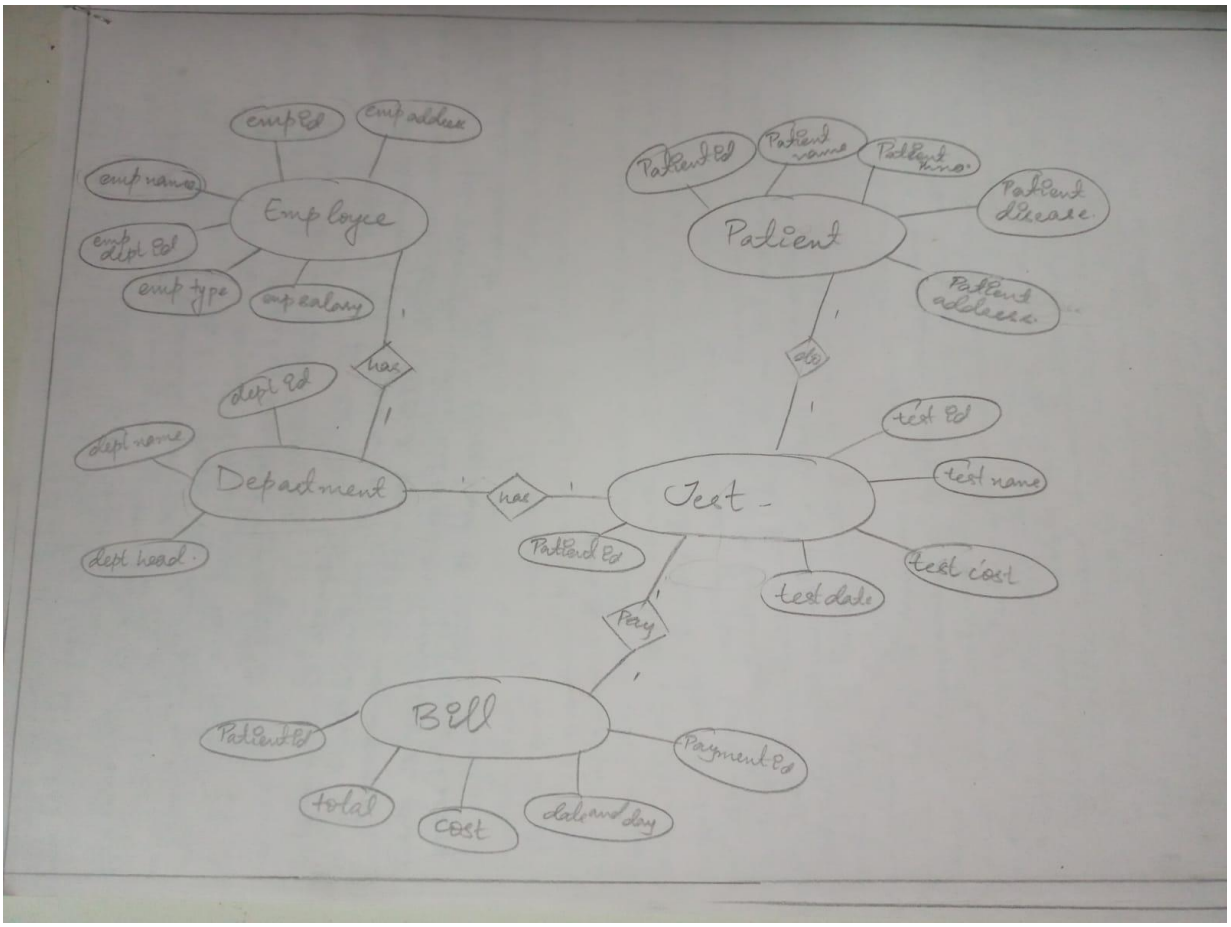
2) Employee:
-> has unique emp_id.
-> has a emp_name.
-> has a emp_type.
->has a emp_address
-> has a emp_salary.
->has a emp_dept_id.

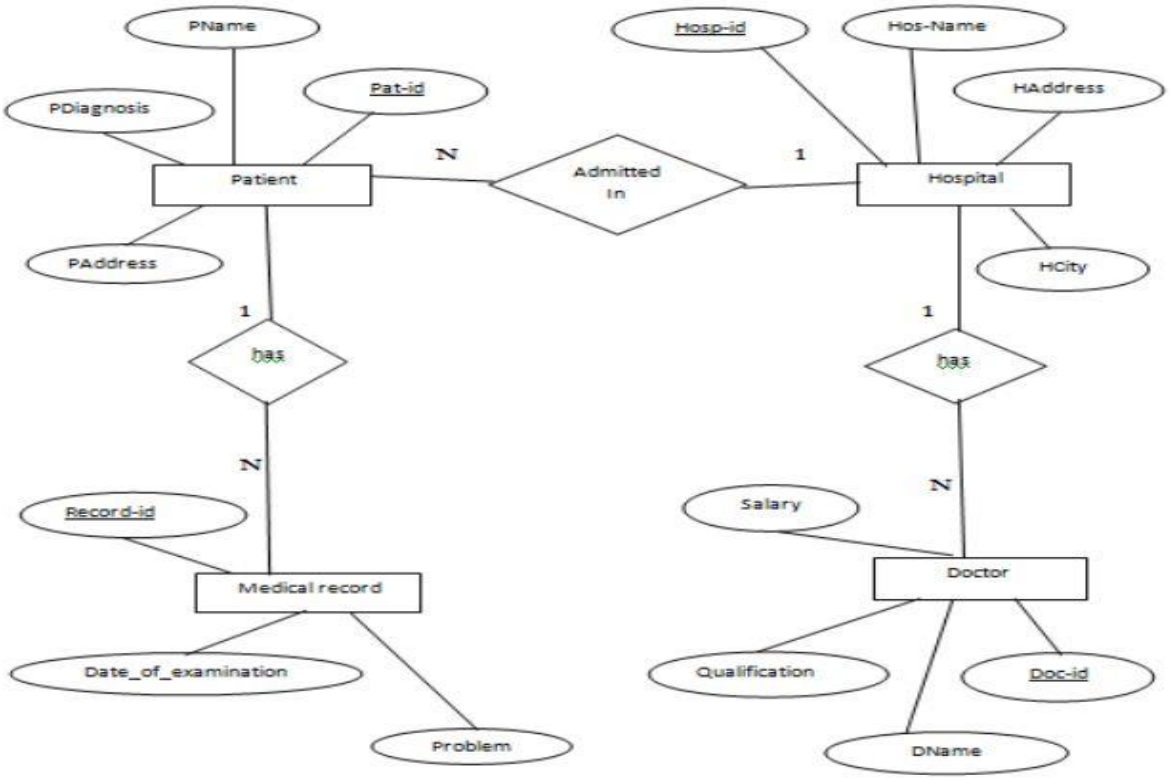
3) Department:
-> has a unique dept_id.
-> has a dept_name.
-> has a dept_head.

4) Test:
-> has a unique test_id.
-> has a test_name.
-> has a test_cost
->has a test _date.
->has a patient_id

5) Bill:
-> has a unique payment_id.
-> has a date and day.
->has a cost.
-> has a total.
->has a patient_id.

ER DIAGRAM


emp Id
emp address
emp name
Employee
emp dept Id
emp type
emp salary
has
dept Id
dept name
Department
dept head
nas
Patient Id
Patient name
Patient no.
Patient Disease
Patient address
Patient
test Id
test name
Test
test cost
test date
Pay
Bill
Patient Id
Payment Id
total
cost
date and day


PName
PDiagnosis
Pat-id
Patient
PAddress
N
Admitted In
1
Hosp-id
Hos-Name
HAddress
Hospital
HCity
1
has
N
Record-id
Medical record
Date_of_examination
Problem
1
has
N
Salary
Doctor
Qualification
Doc-id
DName

CREATION OF TABLES

SQL> create table patient1(patient_id number not null,patient_name VARCHAR2(30) not null,phone_no VARCHAR2(30) not null,address VARCHAR2(30) not null,disease varchar(30) not null);
Table created

SQL>create table patient1(patient_id number not null,patient_name VARCHAR2(30) not null,phone_no VARCHAR2(30) not null,address VARCHAR2(30) not null,disease varchar(30) not null);
Table created.

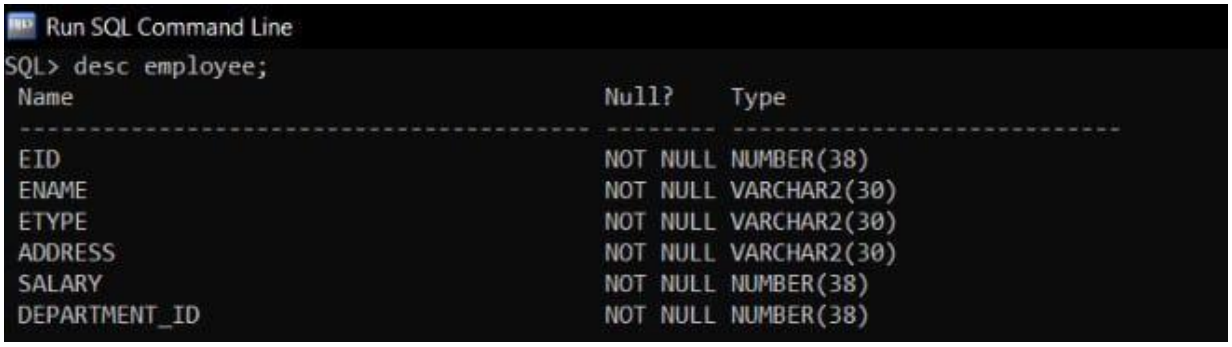
SQL> create table department(department_id number not null,dep_name VARCHAR2(50) not null,dep_name VARCHAR2(30) not null);
Table created.

SQL>create table aroma_table(item_id number,item_name char(15),item_cost number);
Table created.

SQL>create table papadams_table(item_id number,item_name char(15),item_cost number);
Table created.

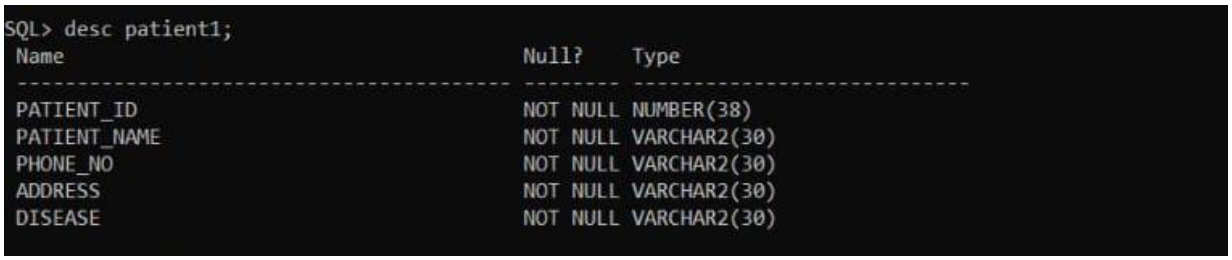
DESCRIBING TABLES

SQL> desc employee_table;



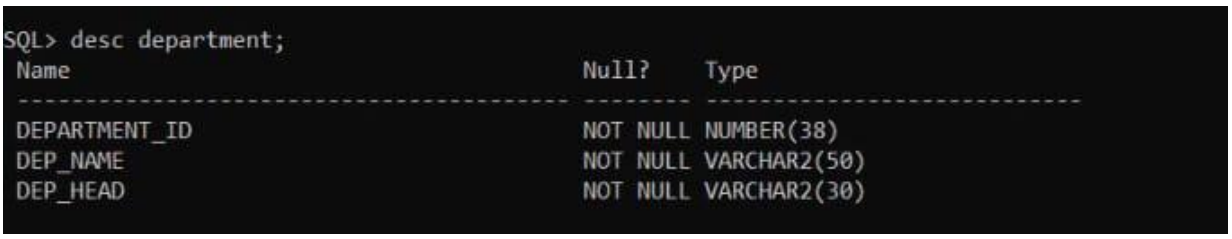
```
Run SQL Command Line
SQL> desc employee;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EID                                       NOT NULL NUMBER(38)
 ENAME                                     NOT NULL VARCHAR2(30)
 ETYPE                                     NOT NULL VARCHAR2(30)
 ADDRESS                                   NOT NULL VARCHAR2(30)
 SALARY                                    NOT NULL NUMBER(38)
 DEPARTMENT_ID                             NOT NULL NUMBER(38)
```

SQL> desc patient_table;



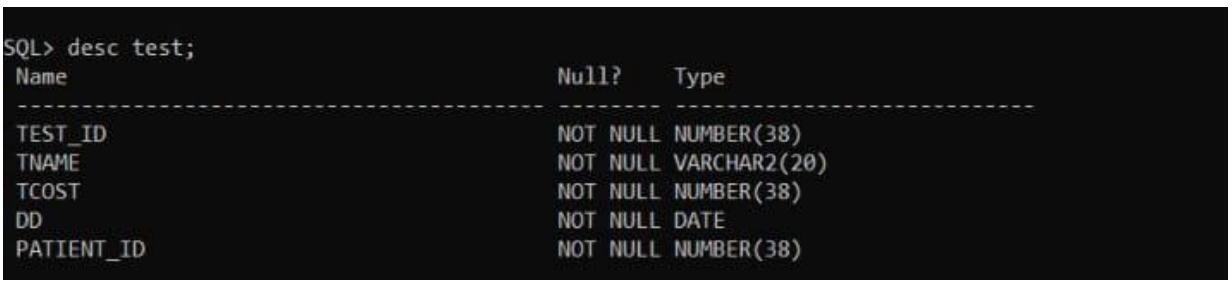
```
SQL> desc patient1;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PATIENT_ID                                NOT NULL NUMBER(38)
 PATIENT_NAME                              NOT NULL VARCHAR2(30)
 PHONE_NO                                  NOT NULL VARCHAR2(30)
 ADDRESS                                   NOT NULL VARCHAR2(30)
 DISEASE                                   NOT NULL VARCHAR2(30)
```

SQL> desc department_table;



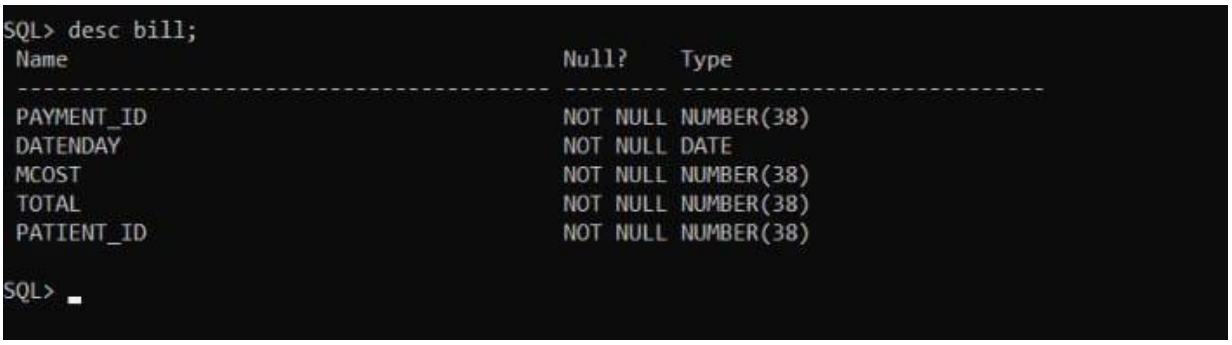
```
SQL> desc department;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPARTMENT_ID                             NOT NULL NUMBER(38)
 DEP_NAME                                  NOT NULL VARCHAR2(50)
 DEP_HEAD                                  NOT NULL VARCHAR2(30)
```

SQL>desc test_table;



```
SQL> desc test;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 TEST_ID                                   NOT NULL NUMBER(38)
 TNAME                                     NOT NULL VARCHAR2(20)
 TCOST                                     NOT NULL NUMBER(38)
 DD                                        NOT NULL DATE
 PATIENT_ID                                NOT NULL NUMBER(38)
```

SQl>desc bill_table;



INSERTING VALUES INTO TABLES

- **INSERTING INTO EMPLOYEE TABLE**

```
SQL> insert into employee values(1001, 'Dr. Akhila','Doctor','Delhi');
1 row created.

SQL> insert into employee values(1002,'Dr. Raju','Doctor','Pune');
1 row created.

SQL> insert into employee values(1003,'Saroja','Nurse','Goa');
 1 row created.

SQL> insert into employee values(1004,'Guna','Nurse','Thulu');
 1 row created.

SQL> insert into employee values(1005,'Ravi','Nurse','Bihar');
1 row created.
```

- **INSERTING INTO PATIENT TABLE**

```
SQL> insert into patient1 values(201,'Suma',987398741,'Delhi');
1 row created.

SQL> insert into patient1 values(202,'Rani',989847234,'Pune');
1 row created.

SQL> insert into patient1 values(203,'Mena',987649879,'Goa');
1 row created.

SQL> insert into patient1 values(204,'Renu',913247890,'Patna');
1 row created.

SQL> insert into patient1 values(205,'Ramu',9678657444,'Hyd');
1 row created.
```

- **INSERTING INTO DEPARTMENT TABLE**

SQL>insert into department values(111,'Pediatric','Dr.Vishnu');
1 row inserted.

SQL> insert into department values(122,'Orthopedic','Dr.Raju');
1 row inserted.

SQL> insert into department values(145,'Gynecology','Dr.Shiva');
1 row inserted.

SQL> insert into department values(156,'Cardiology','Dr.UmaRani');
1 row inserted.

SQL> insert into department values(178,'Neurology','Dr.Renu');
1 row inserted.

- **INSERTING INTO TEST TABLE**

SQL>insert into test values(301,'Allergies',98,18-SEP-22,201);
1 row inserted.

SQL>insert into test values(302,'Stomach_Aches',100,16-AUG-23,202);
1 row inserted.

SQL>insert into test values(303,'Diarrhea',100,13-AUG-21,203);
1 row inserted.

SQL>insert into test values(304,'Corona',100,18-SEP-21,204);
1 row inserted.

SQL>insert into test values(305,'Chickenpox',100,19-AUG-21,205);
1 row inserted.

- **INSERTING INTO BILL TABLE**

SQL>insert into bill values(401,'18-sep-21',204,1000,201);
1 row inserted.

SQL> insert into bill values(402,'19-aug-22',890,1500,202);
1 row inserted.

SQL> insert into bill values(403,'29-jul-21',800,3500,203);
1 row inserted.

SQL> insert into bill values(404,'21-aug-22',390,4000,204);
1 row inserted.

SQL> insert into bill values(405,'20-sep-21',399,4900,205);
1 row inserted.

SELECT COMMAND

SQL> select * from employee_table;

Select Run SQL Command Line

```
QL> select * from employee;

      EID ENAME                          ETYPE                          ADDRESS                          SALARY DEPARTMENT_ID
--------- ------------------------------ ------------------------------ ------------------------------ ---------- -------------
     1001 Dr.Akhila                      Doctor                         Delhi                            100000           101
     1002 Dr.Raju                        Doctor                         Pune                             200000           102
     1003 Saroja                         Nurse                          Goa                               10000           101
     1004 Guna                           Nurse                          Thulu                             20000           105
     1005 Ravi                           Nurse                          Bihar                             25000           103
```

SQL>select* from patient_table;

```
QL> select * from patient1;

ATIENT_ID PATIENT_NAME                   PHONE_NO                       ADDRESS                        DISEASE
--------- ------------------------------ ------------------------------ ------------------------------ ------------------------------
      201 Suma                           987398741                      Delhi                          Cold_and_Flew
      202 Rani                           989847234                      Pune                           Headache
      203 Mena                           987649879                      Goa                            Fever
      204 Renu                           913247890                      Patna                          Corona
      205 Ramu                           9678657444                     Hyd                            Chickenpox
```

SQL>select * from department_table;

```
QL> select * from department;

EPARTMENT_ID DEP_NAME                                           DEP_HEAD
------------ -------------------------------------------------- ------------------------------
         101 Emergency_Department(ED)                           Shaker
         102 Intensive_care_unit(ICU)                           Padma
         103 Medical-surgical_unit(MSU)                         UmaRani
         104 Obstetrics_and_gynecology_department(OB/GYN)       Shiva
         105 Pediatrics_department(PD)                          Vishnu
```

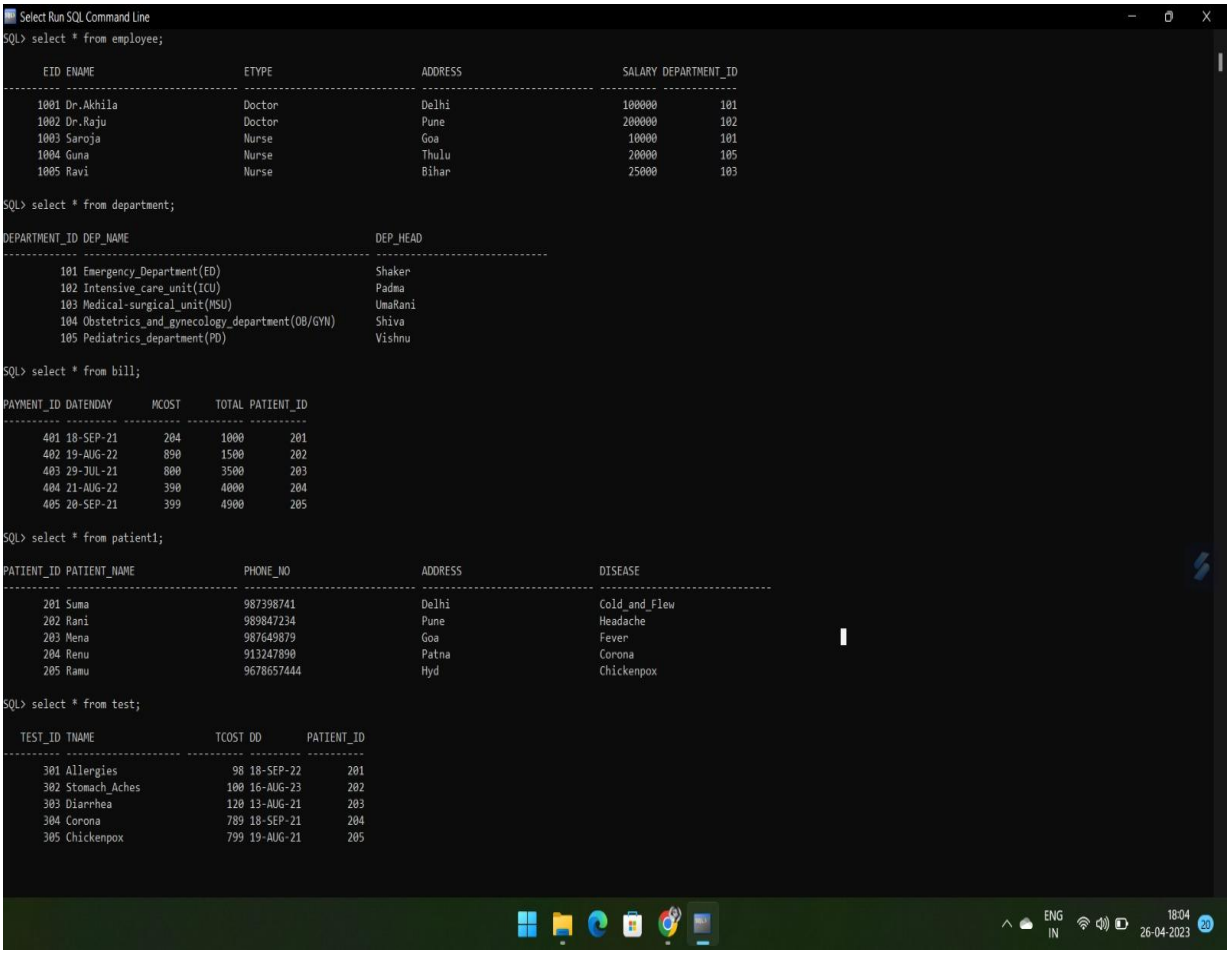
SQL>select * from test_table;

```
QL> select * from test;

   TEST_ID TNAME                    TCOST DD        PATIENT_ID
---------- -------------------- ---------- --------- ----------
       301 Allergies                    98 18-SEP-22        201
       302 Stomach_Aches               100 16-AUG-23        202
       303 Diarrhea                    120 13-AUG-21        203
       304 Corona                      789 18-SEP-21        204
       305 Chickenpox                  799 19-AUG-21        205
```

SQL>select * from bill_table;

```
QL> select * from bill;

AYMENT_ID DATENDAY       MCOST      TOTAL PATIENT_ID
---------- --------- ---------- ---------- ----------
       401 18-SEP-21        204       1000        201
       402 19-AUG-22        890       1500        202
       403 29-JUL-21        800       3500        203
       404 21-AUG-22        390       4000        204
       405 20-SEP-21        399       4900        205
```

RESULTS


Select Run SQL Command Line
SQL> select * from employee;
EID ENAME ETYPE ADDRESS SALARY DEPARTMENT_ID
1001 Dr.Akhila Doctor Delhi 100000 101
1002 Dr.Raju Doctor Pune 200000 102
1003 Saroja Nurse Goa 10000 101
1004 Guna Nurse Thulu 20000 105
1005 Ravi Nurse Bihar 25000 103
SQL> select * from department;
DEPARTMENT_ID DEP_NAME DEP_HEAD
101 Emergency_Department(ED) Shaker
102 Intensive_care_unit(ICU) Padma
103 Medical-surgical_unit(MSU) UmaRani
104 Obstetrics_and_gynecology_department(OB/GYN) Shiva
105 Pediatrics_department(PD) Vishnu
SQL> select * from bill;
PAYMENT_ID DATENDAY MCOST TOTAL PATIENT_ID
401 18-SEP-21 204 1000 201
402 19-AUG-22 890 1500 202
403 29-JUL-21 800 3500 203
404 21-AUG-22 390 4000 204
405 20-SEP-21 399 4900 205
SQL> select * from patient1;
PATIENT_ID PATIENT_NAME PHONE_NO ADDRESS DISEASE
201 Suma 987398741 Delhi Cold_and_Flew
202 Rani 989847234 Pune Headache
203 Mena 987649879 Goa Fever
204 Renu 913247890 Patna Corona
205 Ramu 9678657444 Hyd Chickenpox
SQL> select * from test;
TEST_ID TNAME TCOST DD PATIENT_ID
301 Allergies 98 18-SEP-22 201
302 Stomach_Aches 100 16-AUG-23 202
303 Diarrhea 120 13-AUG-21 203
304 Corona 789 18-SEP-21 204
305 Chickenpox 799 19-AUG-21 205
ENG
IN
18:04
26-04-2023

CONCLUSION

- The Project HOSPITAL MANAGEMENT SYSTEM (HMS) is for computerizing the working in a hospital. The software takes care of all the requirements of an average hospital and is capable to provide easy and effective storage of information related to patients that come up to the hospital.
- It generates the reports; provide various tests, check-ups and display patient and doctor details also. It also provides billing facility.
- It automates numerous daily operations and enables smooth interactions of the users.
- Developing the hospital system software is a great opportunity to create the distinct, efficient and fast delivering healthcare model. Implementation of hospital management system project helps to store all the kinds of records, provide coordination and user communication, implement policies, improve day-to-day operations, arrange the supply chain, manage financial and human resources, and market hospital services.
- Many clinics have already experienced its advantages and continue developing new hospital management system project modules.
- After the completion of this course project, we came to get a clear understanding on the concepts of DBMS and usage of them in real-life.