Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY

Near Jnana Bharathi Campus, Bengaluru-560 056.

(An Autonomous Institution, Aided by Government of Karnataka)

DATABASE APPLICATION PROJECT REPORT

ON

"HOSPITAL MANAGEMENT SYSTEM"

Submitted By

S NARASIMHA   **SHUBH PRABHAT PANDEY**

1DA16CS174   **1DA16CS180**

**Under the Guidance
Of
Mrs. Shanmugapriya
P Asst. Prof, Dept of
CSE
Dr. AIT**

Department of Computer Science & Engineering

2019-20

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY

Near Jnana Bharathi Campus, Bengaluru-560 056.

(An Autonomous Institution, Aided by Government of Karnataka)

CERTIFICATE

This is to certify that the project work entitled "**HOSPITAL MANAGEMENT SYSTEM**" submitted in the partial fulfillment of the requirement of the 5th semester DBA laboratory curriculum during the year 2019-20 is a result of bonafied work carried out by

S NARASIMHA   SHUBH PRABHAT PANDEY

1DA16CS174   1DA16CS180

Signature of the guide:

_____

Mrs. Shanmugapriya P

 Asst. Prof., Dept of CSE

  Dr. AIT

   Internal Examiner _____

   External Examiner _____

                        Dr. Siddaraju

                        PROF &HOD

                  Department of CSE, Dr.AIT

ACKNOWLEDGEMENT

The satisfaction that accompanies to this project would be incomplete without the mention of the people who made it possible without whose constant guidance and encouragement have made our efforts go in vain.

We consider ourselves privileged to express our gratitude and respect towards all those who guide us through the project **"HOSPITAL MANAGEMENT SYSTEM"**

We would like to express our gratitude **to Dr. NanjundaSwamy, Principal, Dr. AIT** for providing us the congenial environment to work in.

We would like to express our profuse gratitude to **Dr. Siddaraju, HOD, Dept. of Computer Science & Engineering, Dr. AIT**, for giving us the support, encouragement and providing us the required lab facilities that was necessary for the completion of the project.

As a token of gratitude, we would like to acknowledge our sincere gratefulness to the internal guides **Mrs. Shanmugapriya P Asst. Professor, Dept. Of CSE, Dr.AIT** for her unlimited support and encouragement provided throughout the process.

We also express our gratitude and sincere thanks to all the teaching and non-teaching staff of **Computer Science & Engineering Department.**

Finally, yet importantly, we would like to express our heartfelt thanks to our beloved Parents for their blessings and our Friends for their help and wishes for the successful completion of this project report.

S NARASIMHA

SHUBH PRABHAT PANDEY

ABSTRACT

The project Hospital Management system includes registration of patient, storing their details into the system and also computerized billing in the pharmacy and labs. The software has the facility to give a unique id for every patient and stores the details of every patient and doctors 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 the id.

The Hospital Management system can be accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is user-friendly. The data are well protected and making the data processing very fast.

CONTENTS

CHAPTER 1

INTRODUCTION

The main aim of the entire activity is to automate the process of day to day activities of Hospital Management like maintaining department details, doctors, bills and room allotment during the treated of the patient.

The limited time and resources have been restricted us to incorporate, in this project, only main activities that are performed in Hospital Management but utmost care has been taken to make the system efficient and user friendly.

"**THE HOSPITAL MANAGEMENT**" has been designed to computerize the following function performed by the system.

- Maintaining patient details

- Maintaining doctor's information

- Manage the Departmental details of hospital

- Generate the bills for patients

- Manage the Departmental details of hospital

- View all the rooms available

- Search the Doctor according to their ID

- Assigning the room to the patients

This project intends to introduce more user friendliness in the various activities such as record updating maintaining and searching.

CHAPTER 2

SYSTEM REQUIREMENT SPECIFICATION

The hardware and software components of computer system that are required to install and use software efficiently are specified in the SRS. The minimum system requirements need to be met for the program to run all times on the system.

3.1 Hardware Requirements

The hardware requirement specifies the necessary hardware which provides us the platform to implement our programs.

- 2.2 GHz processor (Intel i5 or i7)

- 2 GB RAM (system memory)

- 20 GB of hard-drive space

- VGA capable of 1024x768 screen resolution.

- Necessary computer peripherals such as keyboard etc.

3.2 Software Requirements

The software requirement specifies the pre-installed software needed to run the code being implemented in this project.

- Windows Operating System

- Oracle 10g database

3.3 Functional Requirements

- Department login

- Updating the patient database

- Display patient details and bills of the patient

- Doctor's and patient interaction

- Feedback

3.4 Non-functional Requirements

- Unique Dr id and patient id should be provided for each doctor and patient respectively.

- Bill number should be unique to each patient.

CHAPTER 3

SYSTEM DESIGN

ER Diagram

An entity-relationship model (ER model) is a data model for describing the data or information aspects of a business domain or its process requirements, in an abstract way that lends itself to ultimately being implemented in a database such as a relational database. The main components of ER models are entities (things) and the relationships that can exist among them. Entity-relationship modelling was developed by Peter Chen and published in a 1976 paper. The ER diagram is drawn to have a better understanding of the whole scenario, it is used to conceptualize the phenomena, actions and interactions between various entities and to arrive at the specific requirements in a comprehensive manner.

An entity-relationship model is the result of using a systematic process to describe and define a subject area of business data. The data is represented as components (entities) that are linked with each other by relationships that express the dependencies and requirements between them, such as: one building may be divided into zero or more apartments, but one apartment can only be located in one building. Entities may have various properties (attributes) that characterize them. Diagrams created to represent these entities, attributes, and relationships graphically are called entity relationship diagrams. An ER model is typically implemented as a database. In the case of a relational database, which stores data in tables, every row of each table represents one instance of an entity. Some data fields in these tables point to indexes in other tables, such pointers are the physical implementation of the relationships the three-schema approach to software engineering uses three levels of ER models that may be developed.

A relationship captures how entities are related to one another. Relationships can be thought of as verbs, linking two or more nouns. Examples: An owns relationship between a company and a computer, a supervised relationship between an employee and a department, a performs relationship between an artist and a song relationship between a mathematician.

Schema Diagram

A database schema is the skeleton structure that represents the logical view of the entire database. It defines how the data is organized and how the relations among them are associated. It formulates all the constraints that are to be applied on the data.

A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams. It's the database designers who design the schema to help programmers understand the database and make it useful.

A database schema can be divided broadly into two categories -

- **Physical Database Schema**- This schema pertains to the actual storage of data sand its form of storage like files, indices, etc. It defines how the data will be stored in a secondary storage.

- **Logical Database Schema** - This schema defines all the logical constraints that need to be applied on the data stored. It defines tables, views, and integrity constraints.

Database schema is the skeleton of database. It is designed when the database doesn't exist at all. Once the database is operational, it is very difficult to make any changes to it. A database schema does not contain any data or information.

- ## Database SCHEMA for the HOSPITAL MANAGEMENT

Department Table

DNO	DEPTNAME	DHEAD

Doctors Table

FNAME	MNAME	LNAME	DR_ID	AGE	GENDER	SALARY

Patient Table

FNAME	MNAME	LNAME	PID	DNO	AGE	GENDER	DR_INCHARGE

Room Table

RNO	PID	ROOMTYPE	CAPACITY

Bill Table

BNO	PID	PHARMACY	DRCHARGES	ROOMCHARGE

CHAPTER 4

IMPLEMENTATION

TABLE CREATION

DEPARTMENT

CREATE TABLE DEPARTMENT (

DNO INT PRIMARY KEY,

DNAME VARCHAR(15),

DHEAD INT);

DOCTORS

CREATE TABLE DOCTORS (

FNAME VARCHAR(15) NOT NULL,

MNAME VARCHAR(15),

LNAME VARCHAR(15), DR_ID

INT PRIMARY KEY,

DNO INT FOREIGN KEY(DNO) REFERENCES DEPARTMENT(DNO), AGE

NUMBER(3) NOT NULL,

GENDER VARCHAR(2) NOT NULL,

SALARY NUMBER(7));

PATIENT

```
CREATE TABLE PATIENT (

    FNAME VARCHAR(15) NOT NULL,

    MNAME VARCHAR(15),

    LNAME VARCHAR(15), PID

    INT PRIMARY KEY,

    DNO INT, FOREIGN KEY(DNO) REFERENCES DEPARTMENT(DNO), AGE

    NUMBER(3) NOT NULL,

    GENDER VARCHAR(2) NOT NULL,

    DR_INCHARGE        INT,FOREIGN        KEY(DR_INCHARGE)        REFERENCES
DOCTORS(DR_ID)

);
```

ROOM

```
CREATE TABLE ROOM (

    RNO NUMBER(3) NOT NULL,

    PID INT,FOREIGN KEY(PID) REFERENCES PATIENT(PID) ON DELETE CASCADE, ROOMTYPE

    VARCHAR(4) CHECK(ROOMTYPE IN ('1S','2S','GW')),

    CAPACITY INT, PRIMARY

    KEY(RNO,PID)
```

);

BILL

CREATE TABLE BILL (

BNO NUMBER(4) PRIMARY KEY,

PID INT,FOREIGN KEY(PID) REFERENCES PATIENT(PID) ON DELETE CASCADE, DR_CHARGES

NUMBER,

PHARMACY NUMBER,

ROOMCHARGES NUMBER

);

INSERTING VALUES

DEPARTMENT

INSERT INTO DEPARTMENT VALUES(1, 'ORTHOPEDIC', 1);

INSERT INTO DEPARTMENT VALUES(2, 'GYNOCOLOGY', 2);

INSERT INTO DEPARTMENT VALUES(3, 'NEUROLOGY', 3);

INSERT INTO DEPARTMENT VALUES(4, 'DERMATOLOGY', 6);

INSERT INTO DEPARTMENT VALUES(5, 'CARDIOLOGY', 7);

SELECT * FROM DEPARTMENT;

DOCTORS

INSERT INTO DOCTORS VALUES('RAJATH','M','',1,1,30,'M',150000);

INSERT INTO DOCTORS VALUES('RAHUL','K','KUMAR',2,2,46,'M',120000);

INSERT INTO DOCTORS VALUES('SUKUMAR','L','PATIL',3,3,25,'M',190000);

INSERT INTO DOCTORS VALUES('ANISH','M','VARMA',4,2,40,'M',250000);

INSERT INTO DOCTORS VALUES('KARTHIK','N','SHARMA',5,1,35,'M',175000);

INSERT INTO DOCTORS VALUES('SANJAY','S','',7,5,42,'M',160000);

INSERT INTO DOCTORS VALUES('RAMESH','KUMAR','',8,5,41,'M',155000);

INSERT INTO DOCTORS VALUES('SANJANA','S','',9,4,39,'F',145000);

INSERT INTO DOCTORS VALUES('ANANYA','A','',10,3,38,'F',165000);

PATIENT

INSERT INTO PATIENT VALUES('SRI, 'JNANESH', ' ', 1, 1, 35, 'M', 1);
INSERT INTO PATIENT VALUES('VARUN, 'VARANASI', ' ', 2, 3, 20, 'M', 3);
INSERT INTO PATIENT VALUES('LOKESH, 'RAHUL', ' ', 3, 3, 27, 'M', 3);
INSERT INTO PATIENT VALUES('MAHENDRA, 'S', 'DHONI ', 4, 1, 29, 'M', 1);
INSERT INTO PATIENT VALUES('SINDHU, 'P', 'V ', 5, 2, 30, 'F', 2);
INSERT INTO PATIENT VALUES('A, 'AARON', ' ', 6, 4, 37, 'M', 6);
INSERT INTO PATIENT VALUES('AJAY, 'KUMAR', ' ', 7, 5, 60, 'M', 7);
INSERT INTO PATIENT VALUES('AVINASH, 'D', 'H ', 8, 3, 50, 'M', 3);
INSERT INTO PATIENT VALUES('RAHUL, 'J', ' ', 9, 1, 43, 'M', 1);
INSERT INTO PATIENT VALUES('VARUN', 'V', ' ', 10, 5, 40, 'M', 7);

SELECT * FROM PATIENT;

ROOM

INSERT INTO ROOM VALUES (101, 1, '1S', 1);

INSERT INTO ROOM VALUES (102, 2, '2S', 2);

INSERT INTO ROOM VALUES (103, 3, '1S', 1);

INSERT INTO ROOM VALUES (101, 4, 'GW', 5);

INSERT INTO ROOM VALUES (101, 5, 'GW', 5);

INSERT INTO ROOM VALUES (105, 6, '1S', 1);

INSERT INTO ROOM VALUES (101, 7, 'GW', 5);

INSERT INTO ROOM VALUES (102, 8, '2S', 2);

SELECT * FROM ROOM;

BILL

INSERT INTO BILL VALUES (501, 1, 4000, 2000, 800);

INSERT INTO BILL VALUES (502, 2, 5000, 6000, 700);

INSERT INTO BILL VALUES (503, 3, 8000, 7000, 900);

INSERT INTO BILL VALUES (504, 4, 9000, 4000, 900);

INSERT INTO BILL VALUES (505, 5, 1000, 5000, 600);

INSERT INTO BILL VALUES (506, 6, 7000, 8000, 800);

INSERT INTO BILL VALUES(507, 7, 7000, 8000, 1000);

INSERT INTO BILL VALUES(508, 8, 7300, 8300, 700);

INSERT INTO BILL VALUES(509, 9, 9000, 8000, 800);

INSERT INTO BILL VALUES(510, 10, 8000, 8000, 1000);

SELECT * FROM BILL;

DESCRIPTION OF TABLE

DEPARTMENT

EDIT	DNO	DNAME	DHEAD
	1	ORTHOPEDIC	1
	2	GYNOCOLOGY	2
	3	NEUROLOGY	3
	4	DERMATOGY	6
	5	CARDIOLOGY	7
		row(s) 1 - 5 of 5	

DOCTORS

EDIT	FNAME	MNAME	LNAME	DR_ID	DNO	AGE	GENDER	SALARY
	RAJATH	M	-	1	1	30	M	150000
	RAHUL	K	KUMAR	2	2	46	M	120000
	SUKUMAR	L	PATIL	3	3	25	M	190000
	ANISH	M	VARMA	4	2	40	M	250000
	KATHIK	N	SHARMA	5	1	35	M	100000
	RAHUL	-	SHARMA	6	4	40	M	175000
	SANJAY	S	-	7	5	42	M	160000
	RAMESH	-	KUMAR	8	5	41	M	155000
	SANJANA	S	-	9	4	39	F	145000
	ANANYA	A	-	10	3	38	F	165000
							row(s) 1 - 10 of 10	

PATIENT

EDIT	FNAME	MNAME	LNAME	PID	DNO	AGE	GENDER	DR_INCHARGE
📝	SRI	JNANESH	-	1	1	35	M	1
📝	VARUN	VARANASI	-	2	3	20	M	3
📝	LOKESH	-	RAHUL	3	3	27	M	3
📝	MAHENDRA	S	DHONI	4	1	29	M	1
📝	SINDU	P	V	5	2	30	F	2
📝	A	AARON	-	6	4	37	M	6
📝	AJAY	-	KUMAR	7	5	60	M	7
📝	AVINASH	D	H	8	3	50	M	3
📝	RAHUL	J	-	9	1	43	M	1
📝	VARUN	V	-	10	5	40	M	7
								row(s) 1 - 10 of 10

ROOM

EDIT	RNO	PID	ROOMTYPE	CAPACITY
📝	101	1	1S	1
📝	102	2	2S	2
📝	103	3	1S	1
📝	101	4	GW	5
📝	101	5	GW	5
📝	105	6	1S	1
📝	101	7	GW	5
📝	102	8	2S	2
📝	107	9	1S	1
📝	109	10	1S	1
			row(s) 1 - 10 of 10	

BILL

EDIT	BNO	PID	DR_CHARGES	PHARMACY	ROOMCHARGES
	501	1	4000	2000	800
	502	2	5000	6000	700
	503	3	8000	7000	900
	504	4	9000	4000	900
	505	5	1000	5000	600
	506	6	7000	8000	800
	507	7	7000	8000	1000
	508	8	7300	8300	700
	509	9	9000	8000	800
	510	10	8000	8000	1000
					row(s) 1 - 10 of 10

CHAPTER 5

SNAPSHOT

1. Display the patients details along with their bill who are assigned room no 101

    SELECT U.BNO,P.FNAME,U.DR_CHARGES,U.PHARMACY,U.ROOMCHARGES FROM

    (SELECT * FROM BILL

    WHERE PID IN(SELECT PID FROM ROOM WHERE RNO=101)) U , PATIENT P WHERE

    P.PID=U.PID;

OUTPUT:

BNO	FNAME	DR_CHARGES	PHARMACY	ROOMCHARGES
501	SRI	4000	2000	800
504	MAHENDRA	9000	4000	900
505	SINDU	1000	5000	600
507	AJAY	7000	8000	1000

2. Display the maximum salary of doctor in the hospital.

    SELECT D.FNAME,D.MNAME,D.LNAME, D.SALARY FROM

    DOCTORS D

    WHERE SALARY IN(SELECT MAX(SALARY) FROM DOCTORS); OUTPUT:

FNAME	MNAME	LNAME	SALARY
ANISH	M	VARMA	250000

3. List the patients and along with doctor incharge treated in orthopaedic department.

SELECT P.FNAME,D.FNAME FROM (SELECT P.FNAME,DR_INCHARGE FROM

PATIENT P WHERE DNO=1) P,DOCTORS D

WHERE D.DR_ID=P.DR_INCHARGE;

OUTPUT:

FNAME	FNAME
RAHUL	RAJATH
MAHENDRA	RAJATH
SRI	RAJATH

4. List the doctors in gynecology along with their salary and their id

SELECT S.FNAME,S.MNAME,S.LNAME,S.DR_ID,S.SALARY FROM

DOCTORS S,DEPARTMENT D

WHERE S.DNO=2 AND D.DNO=2;

OUTPUT:

FNAME	MNAME	LNAME	DR_ID	SALARY
RAHUL	K	KUMAR	2	120000
ANISH	M	VARMA	4	250000

5. List the patients belonging to department cardiology.

SELECT P.PID,P.FNAME,P.MNAME,P.LNAME FROM PATIENT P, DEPARTMENT D WHERE DNO=3;

PID	FNAME	MNAME	LNAME
2	VARUN	VARANASI	-
3	LOKESH	-	RAHUL
8	AVINASH	D	H

CONCLUSION

Hospital Management is for computerizing the working in a hospital. It is a great improvement over the manual system. The computerization of the system has speed up the process. The hospital managing system was thoroughly checked and tested with dummy data and thus found to be reliable. The system takes the maximum 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 patient details and also with billing facilities.

In conclusion, this project also aims to satisfy each and every user, as user satisfaction is the most important of all.

To wind up, let me welcome all the suggestion and other improvement, which the system needs so that it covers all the needs of the user in any manner possible.

BIBLIOGRAPHY

- Fundamentals Of Database system,5th Edition by Ramezelmasri and ShamkantB.Navathe

- Database System Concepts, 6th Edition by Silberschatz, Korth and Sudarshan

- www.w3schools.com/php

- www.php.net.com/manual

- www.w3schools.com/html

- www.researchgate.net

- www.ecomputernotes.com