PROJECT

DATABASE

Spring– 2018

Submitted To

Sir Najeeb-ur-Rahman

Submitted By

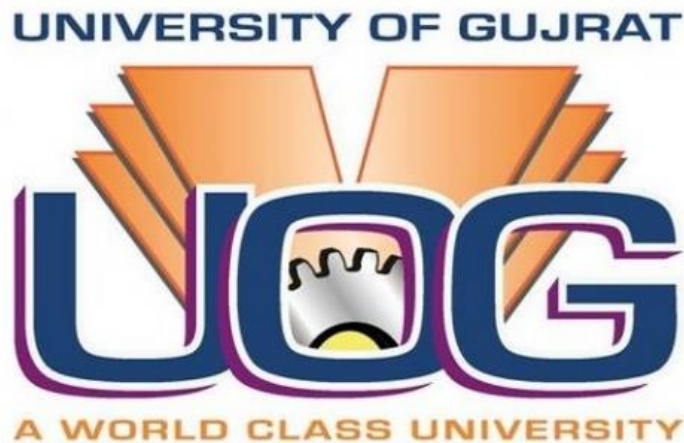**Muhammad Waleed (16201519-105)**
Ghufran Khanzada (16201519-149)

Umair Hashmi (16201519-158)

Section: B

Due Date

Tuesday, June 5, 2018

Department of Computer Science
Faculty of Computing and Information Technology
University of Gujrat, Hafiz Hayat Campus

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Group Introduction

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Group Name

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Code Fish

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Group Members

.	Muhammad Waleed	(16201519-105)
.	Ghufran Khan	(16201519-149)
.	Umair Hashmi	(16201519-158)

Our Mission

Seeking a challenging position in the field of technology so as to utilize our skills for organization and individual growth.

Old Projects

- Employees Management System
- Tic-Tac Game
- Library Management System

Project Title

ZAINAB MEMORIAL HOSPITAL - MIS

Description of the Project

Hospital are the essential part of our lives, providing best medical facilities to people suffering from various ailments, which may be due to change in climatic conditions, increased work-load, emotional trauma stress etc.

It is necessary for the hospitals to keep track of its day-to-day activities & records of its patients, doctors, nurses, ward boys and other staff personals that keep the hospital running smoothly & successfully. But keeping track of all the activities and their records on paper is very cumbersome and error prone.

Thus keeping the working of the manual system as the basis of our project. We have developed an automated version of the manual system, named as **Zainab Memorial Hospital**.
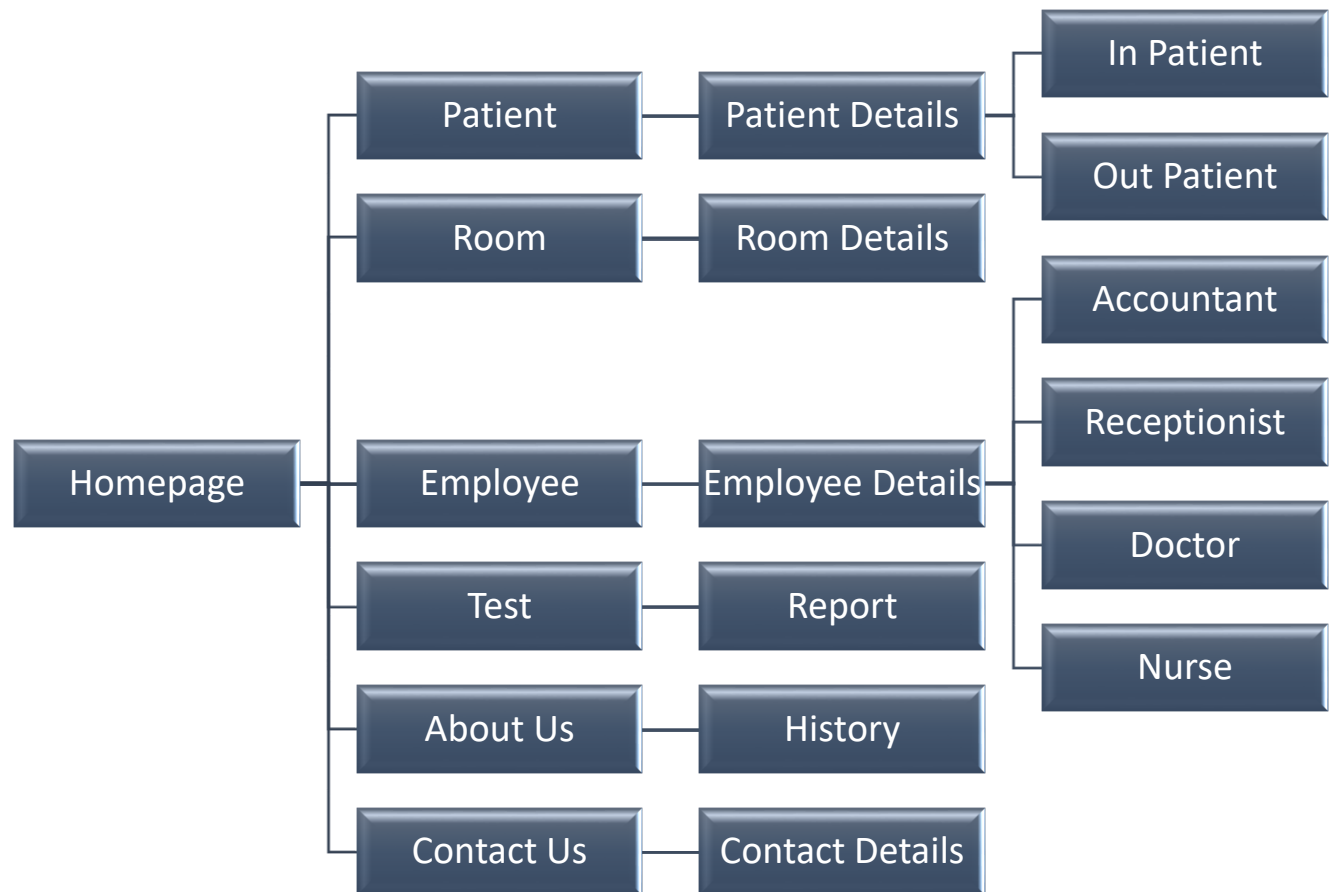
The main aim of our project is to provide a paper-less hospital up to 90%. It also aims at providing low-cost reliable automation of the existing systems. The system also provides excellent security of data at every level of user-system interaction and also provides robust & reliable storage and backup facilities.

Data Requirements

Hospital Management System is aimed to maintain the day-to-day state of patient admission/discharge, list of doctors, report generation, etc. When we visited Zainab Memorial Hospital and asked them for the requirements then they tell us the primary requirements of their hospital which are:

- To computerize all details regarding patient and hospital
- To schedule patient appointments with doctors making it convenient for both
- To schedule specialized and emergency services to ensure complete and effective utilization
- To generate and handle pathology test reports
- To maintain patient records and vitals

Apart from these, lot many facilities are offered by hospital management system ranging from patient management, medical services management to administration and billing management.

```
                                                                    ┌─────────────────┐
                                                                    │   In Patient    │
                                                   ┌────────────────┤                 │
                                  ┌──────────┐     ┌──────────────┐ └─────────────────┘
                                  │ Patient  │─────│Patient Details│
                                  └──────────┘     └──────────────┘ ┌─────────────────┐
                                                                    │   Out Patient   │
                                  ┌──────────┐     ┌──────────────┐ └─────────────────┘
                                  │   Room   │─────│ Room Details │
                                  └──────────┘     └──────────────┘

                                                                    ┌─────────────────┐
                                                                    │   Accountant    │
                                                                    └─────────────────┘

                                                                    ┌─────────────────┐
                                                                    │  Receptionist   │
     ┌──────────┐                 ┌──────────┐     ┌──────────────┐ └─────────────────┘
     │ Homepage │─────────────────│ Employee │─────│Employee Details│
     └──────────┘                 └──────────┘     └──────────────┘ ┌─────────────────┐
                                                                    │     Doctor      │
                                  ┌──────────┐     ┌──────────────┐ └─────────────────┘
                                  │   Test   │─────│    Report    │
                                  └──────────┘     └──────────────┘ ┌─────────────────┐
                                                                    │      Nurse      │
                                                                    └─────────────────┘
                                  ┌──────────┐     ┌──────────────┐
                                  │ About Us │─────│   History    │
                                  └──────────┘     └──────────────┘

                                  ┌──────────┐     ┌──────────────┐
                                  │Contact Us│─────│Contact Details│
                                  └──────────┘     └──────────────┘
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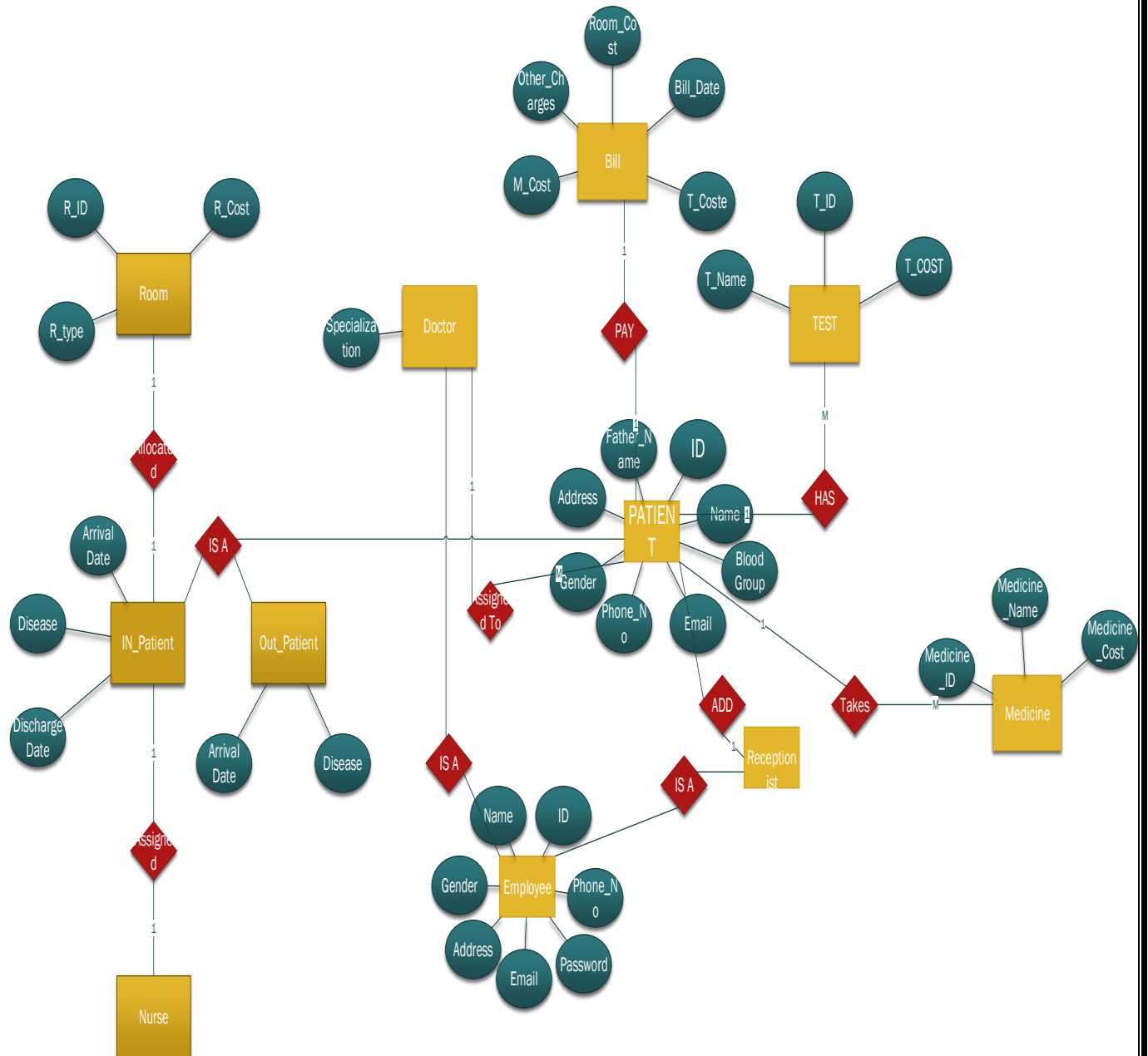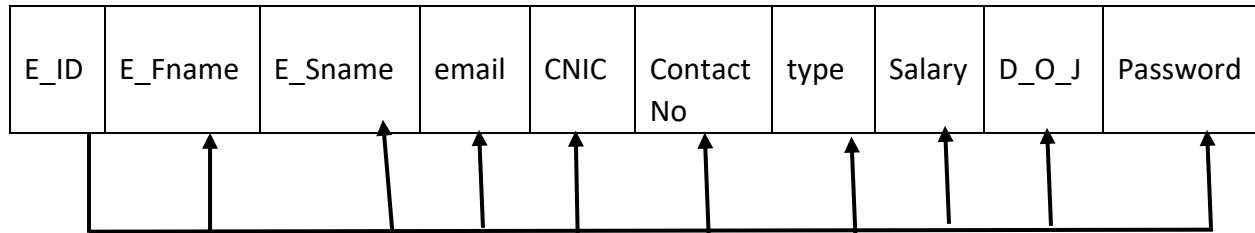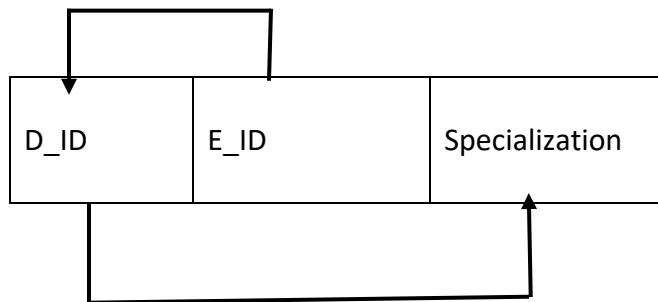
Relational Schema

Employee's

PK	**E_ID**
	Password
	E_Fname
	E_Sname
	E_email
	E_CNIC
	E_Address
	E_Sex
	E_CNo
	type
	E_sal
	D_O_J

Patient_details

PK	**Patient_id**
	Name
	Gender
	Father's name
	Address
	Contact_No
	D_O_A
	Disease
FK	**Room_No**
	Age
	Status

Room

PK	**Room_No**
	total_days
	Room_type
	Cost_per_bed
FK	Patient_id
FK	Nurse_id
	status

Nurse

FK	**E_ID**
FK	**P_ID**
	N_Name
FK	**Room_No**

doctor_Reprt

PK	**id**
FK	**E_ID**
FK	**P_ID**
	date
	month
	Year

Medication

PK	**ID**
FK	**P_ID**
	Status
	Symptons
	Test
	Test_result
FK	**M_ID**
	Doctor_type
	Doctor_Price
	tests_price
	medical_price
	date
	Month
	Year

Medicine

PK	**M_ID**
	Name
	Price

Conceptual Design (Entity Relationship Diagram)
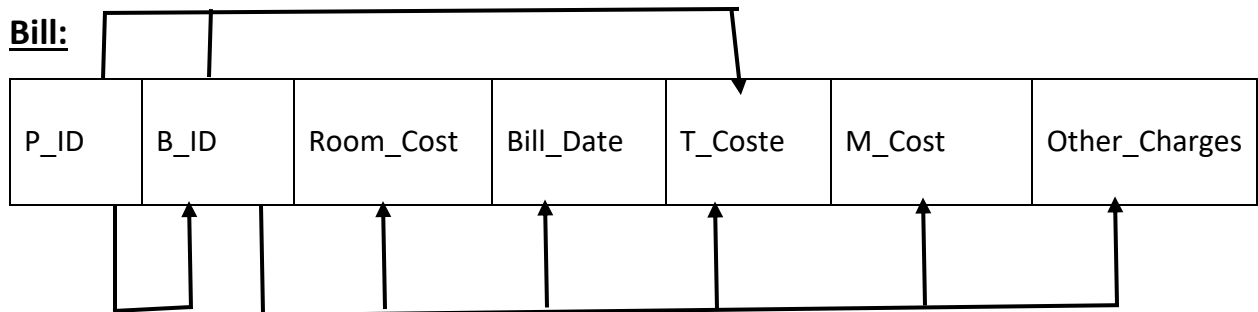
Functional Dependencies

Employee:
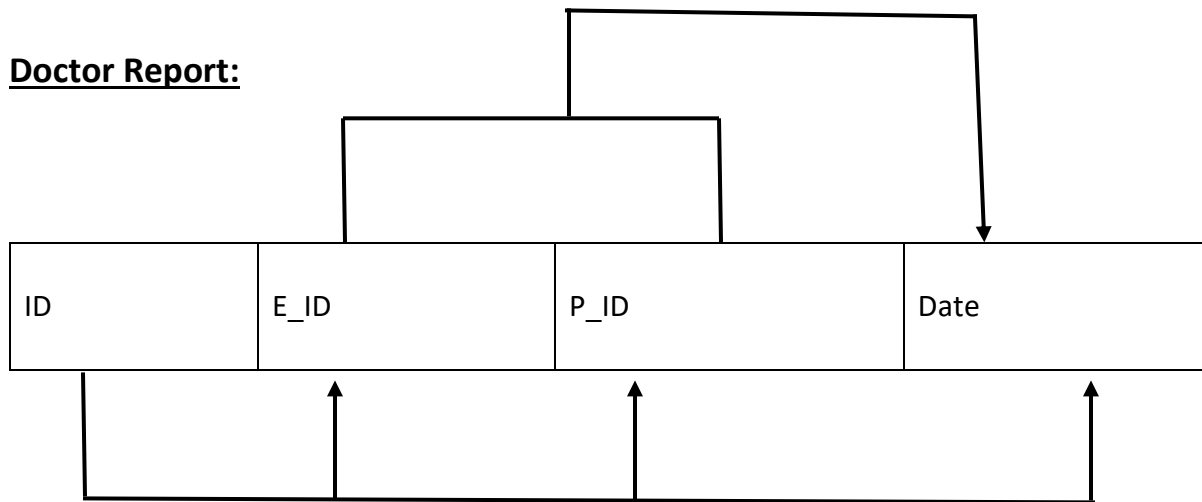
E_ID	E_Fname	E_Sname	email	CNIC	Contact No	type	Salary	D_O_J	Password

Doctor:

D_ID	E_ID	Specialization

Patient:

P_ID	D_ID	Name	Gender	Address	Contact_No	Disease	R_No	Age

Bill:

P_ID	B_ID	Room_Cost	Bill_Date	T_Coste	M_Cost	Other_Charges

Doctor Report:

ID	E_ID	P_ID	Date

Test:

P_ID	T_ID	T_Name	T_Cost

Medicine:

M_ID	P_ID	M_Name	M_Cost

Room:

R_ID	P_ID	R_type	R_Cost
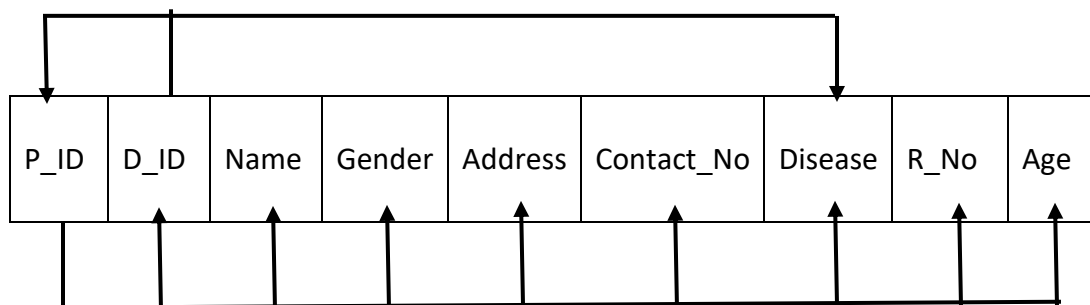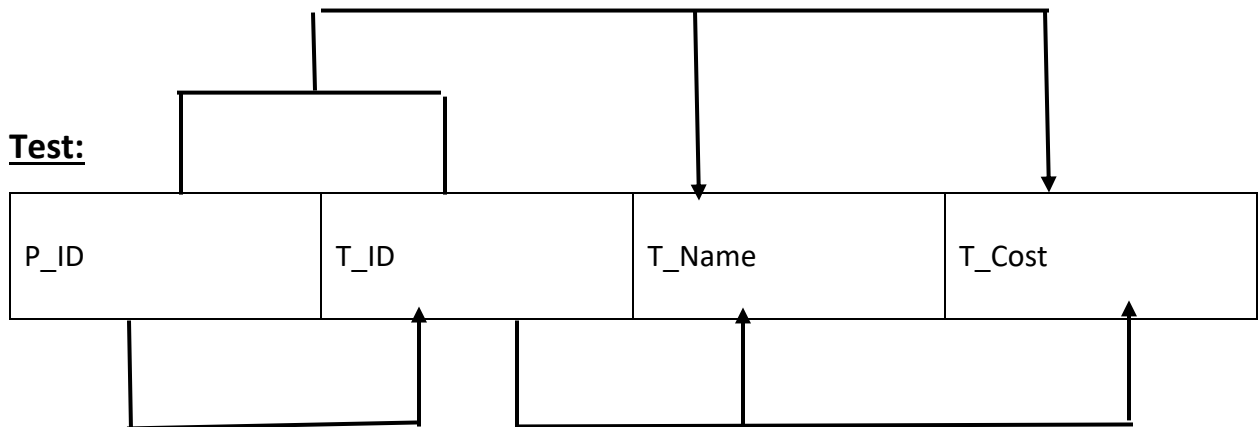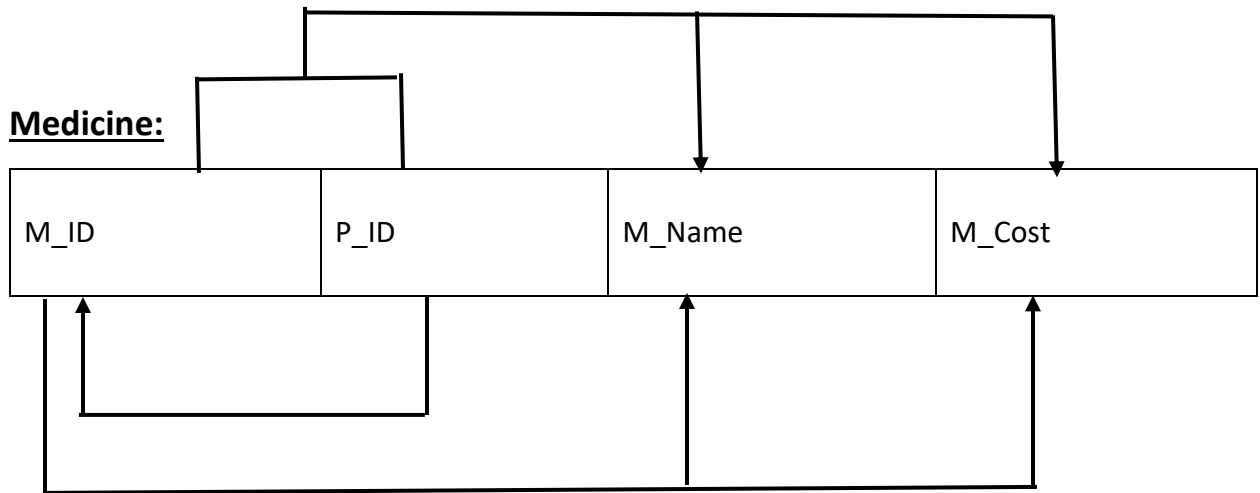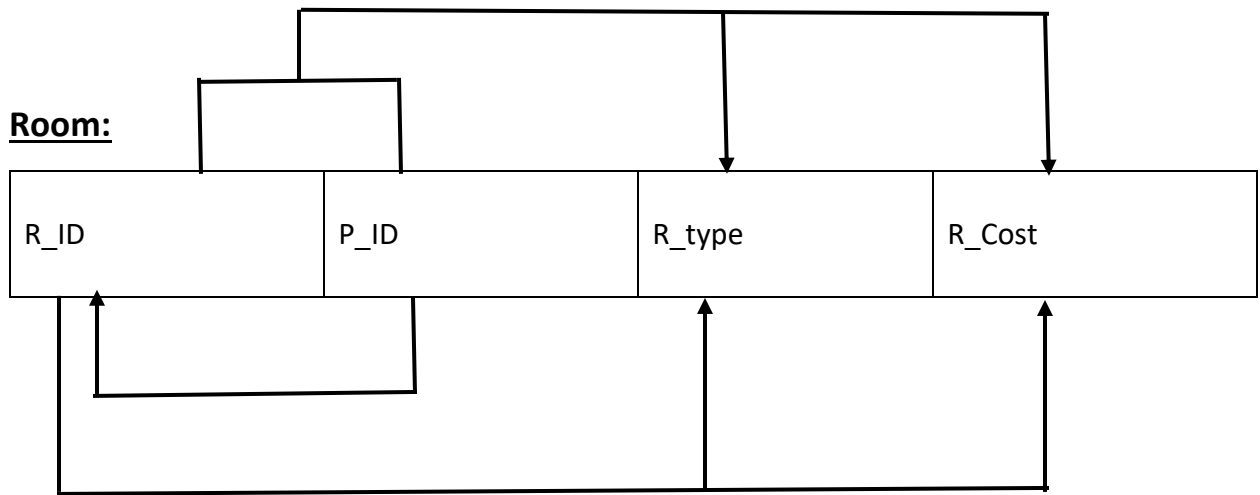
Normalization

Table 1: Patient:

P_ID	D_ID	Name	Gender	Address	Contact_No	Disease	R_No	Age

First Normal Form

You now need to declare **P_ID** and **Disease** together to uniquely identify each row.

So the new key is **P_ID** and **Disease**.

Second Normal Form

Patient:

P_ID	Name	Gender	Address	Contact_No	R_No	Age

Disease:

Disease	D_ID

Resultant Table(key=P_ID+Disease)

P_ID	Disease	D_ID

Third Normal Form

Patient:

P_ID	Name	Gender	Address	Contact_No	Age

Disease:

Disease	D_ID

Resultant Table(key=P_ID+Disease)

P_ID	Disease	D_ID

Room Info:

P_ID	R_NO

Table:2 Doctor

D_ID	E_ID	Specialization

Table:3 Bill

P_ID	B_ID	Room_Cost	Bill_Date	T_Coste	M_Cost	Other_Charges

Table:4 Employee

E_ID	E_Fname	E_Sname	email	CNIC	Contact No	type	Salary	D_O_J	Password

First Normal Form

Employee-ContactInfo

E-ID	E-Contact	email

Employee:

E_ID	E_Fname	E_Sname	CNIC	type	Salary	D_O_J	Password

Table:4 Doctor Report

ID	E_ID	P_ID	Date

Table:5 Tests

P_ID	T_ID	T_Name	T_Cost

Table:6 Medicine

M_ID	P_ID	M_Name	M_Cost

Table:7 Room

R_ID	P_ID	R_type	R_Cost

Physical Database:

create table employee(

E_ID varchar(10) primary key,

password varchar(40) NOT NULL,

E_Fname varchar(40) NOT NULL,

E_Sname varchar(40) NOT NULL,

E_email varchar(255) NOT NULL,

E_CNIC varchar(255) not null,

E_Address varchar(50) not null,

E_sex varchar(10) NOT NULL,

E_CNO varchar(30) not null,

type varchar(40) NOT NULL,

Esal int not null,

D_O_J date,

) ;

```sql
INSERT INTO
employee(E_ID,password,E_Fname,E_Sname,E_email,E_CNIC,E_Address,E_sex
,E_CNO,type,Esal,D_O_J)
 VALUES('A1', '105', 'waleed', 'cheema',
'waleedcheema@gmail.com','3410471562815','Gujranwala','Male','03435982548','
Admin','10000','');


CREATE TABLE patient (

P_ID int primary key identity(1,1),

fname varchar(100) NOT NULL,

sname varchar(100) NOT NULL,

email varchar(255) NOT NULL,

address varchar(255) NOT NULL,

phone varchar(25) NOT NULL,

sex varchar(10) NOT NULL,

bloodgroup varchar(5) NOT NULL,

birthyear int NOT NULL

D_O_A date,

) ;



CREATE TABLE doctorreport (

id int NOT NULL identity(1,1),

E_ID Varchar(10) Foreign Key references employee(E_ID) not null,

P_ID int  Foreign Key references patient(P_ID) not null,

date int NOT NULL,
```

```sql
month int NOT NULL,

year int NOT NULL

) ;


CREATE TABLE medication (

id int primary key NOT NULL identity(1,1),

P_ID int  Foreign Key references patient(P_ID) not null,

status varchar(50) NOT NULL,

symptoms varchar(max) NOT NULL,

tests varchar(max) ,

test_results varchar(max) ,

medical varchar(max) NOT NULL,

doctor_type varchar(20) NOT NULL,

doctor_price int NOT NULL,

test_price int ,

medical_price int NOT NULL,

date int NOT NULL,

month int NOT NULL,

year int NOT NULL

) ;


CREATE TABLE medicine (

id int primary key identity(1,1),

medicine_name varchar(100) NOT NULL,

price int NOT NULL

) ;
```

```
create table nurse(

E_ID Varchar(10) Foreign Key references employee(E_ID) not null,

P_ID int  Foreign Key references patient(P_ID) not null,

N_name varchar(50) not null,

);


create table rooms(

R_ID varchar(10) not null,

R_No int not null,

R_type varchar(25) not null,

E_ID Varchar(10) Foreign Key references employee(E_ID) not null,

P_ID int  Foreign Key references patient(P_ID) not null,

R_cost int not null,

);
```