

# **HOSPITAL MANAGEMENT SYSTEM**

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# HOSPITAL MANAGEMENT SYSTEM



# Project report

## Chapter 1: Introduction

### □ Introduction:

Health of citizen is the wealth of Nation. Hospital Management database System is a computer base software system automate the hospital management system. It is designed to improve the quality and management in areas of clinical process analysis.

The Project Hospital Management Database System include the registration of patients, Doctors, Nurses, Receptionists and Rooms storing their detail into System by using database. The software has facility to give the unique id to Patient, Doctor, Nurse, Receptionist and room and store their details.

Hospital Management Database System have User Friendly interface. This system also has the Queries option.

- **Problem: Storage time accuracy efficiency**

1. This system is manual
- .2. The information is very difficult to retrieve for example to find the patient history.
3. Manually data entry has a chance of inaccuracy.
4. Manual data entry is inefficient
5. Wastage of time

- **Solution**

1. It will be the Computer base system
2. Data entry becomes more efficient
3. Reduction Of errors
4. No Wastage of time

# Chapter 2: Data Requirement

- **Entity Classes**

In this project there are 5 entity classes. The detail is as under

**1. DOCTOR**

Doctor class stores the data of doctors who diagnose the patients.

**2. NURSE**

Nurse class stores the data of nurses who treat the patients.

**3. PATIENT**

Patient class stores the data of patient who take appointment from Reception.

**4. RECEPTIONIST**

Receptionist class stores the data of receptionist who interact with patient.

**5. ROOM**

Room class stores the record which patients are admitted.

- **Attribute**

**1. DOCTOR:** Doctor class have 4 attributes

I. Dr ID

II. Dr\_Name

III. Dr\_Specialization

IV. Dr\_Gender

**2. NURSE:** Nurse class have 4 attributes

1. N\_Name

11. N Id

III. N\_Add (Address)

IV. N\_Email

**3. PATIENT:** Patient class have 7 attributes

I. PID

II. P\_Name

III. P\_Gender (Address)

IV. P\_Entry Date

V. P\_Exit Date

VI. N\_ID

VII R\_ID

**4. RECEPTIONIST:** Receptionist class have 4 attributes

1. RID

II. R\_Name

III. R\_Gender

IV. R\_Add (Addrss)

**5. ROOM:** Room class have 4 attributes

- I. R Number
- II. R\_Serial
- III. R\_Entry Date
- IV. R\_Exit Date

• **Business Rule**

1. One receptionist deal many patients and one patient interact with only one receptionist.
2. One doctor diagnoses only one patient and one patient can only have one doctor checked up at a time.
3. One can admitted in many rooms and one room can have many patients.
4. One nurse treat the many patient and one patient treated by only one nurse.

- **Types And Degree Of Relationship**

There are following relations

## 1. VISIT



**Type of Relationship:** One-To-Many (1:M)

**Degree of Relationship:** Binary



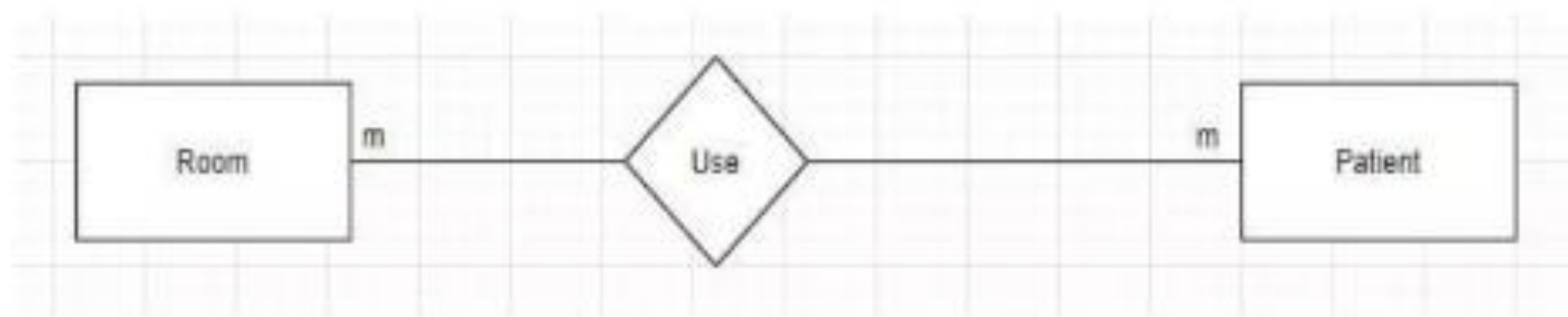
## 2. DIAGNOSE



**Type of Relationship:** One-To-One (1:1)

**Degree of Relationship:** Binary

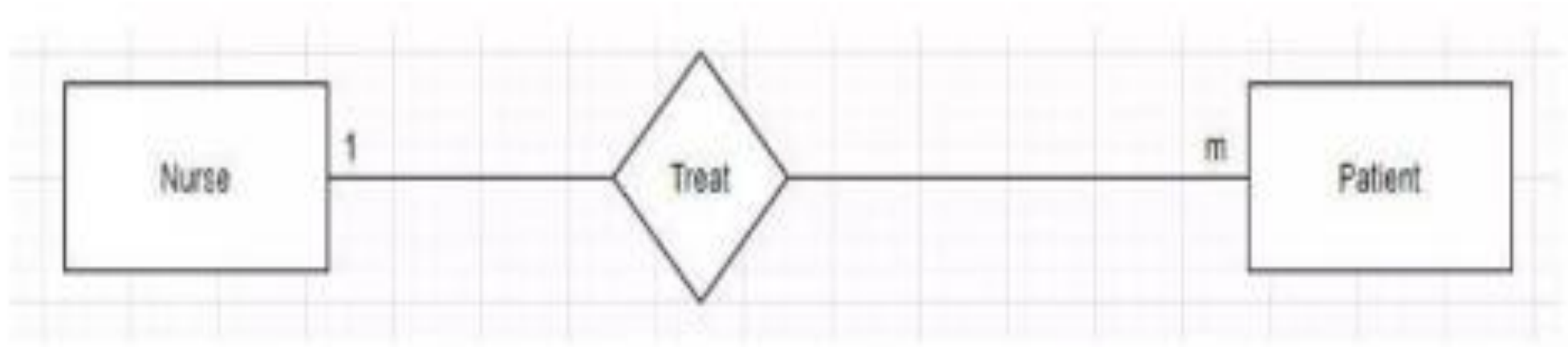
### 3. USE



**Type of Relationship:** Many-To-Many (M:N)

**Degree of Relationship:** Binary

## 4. TREAT

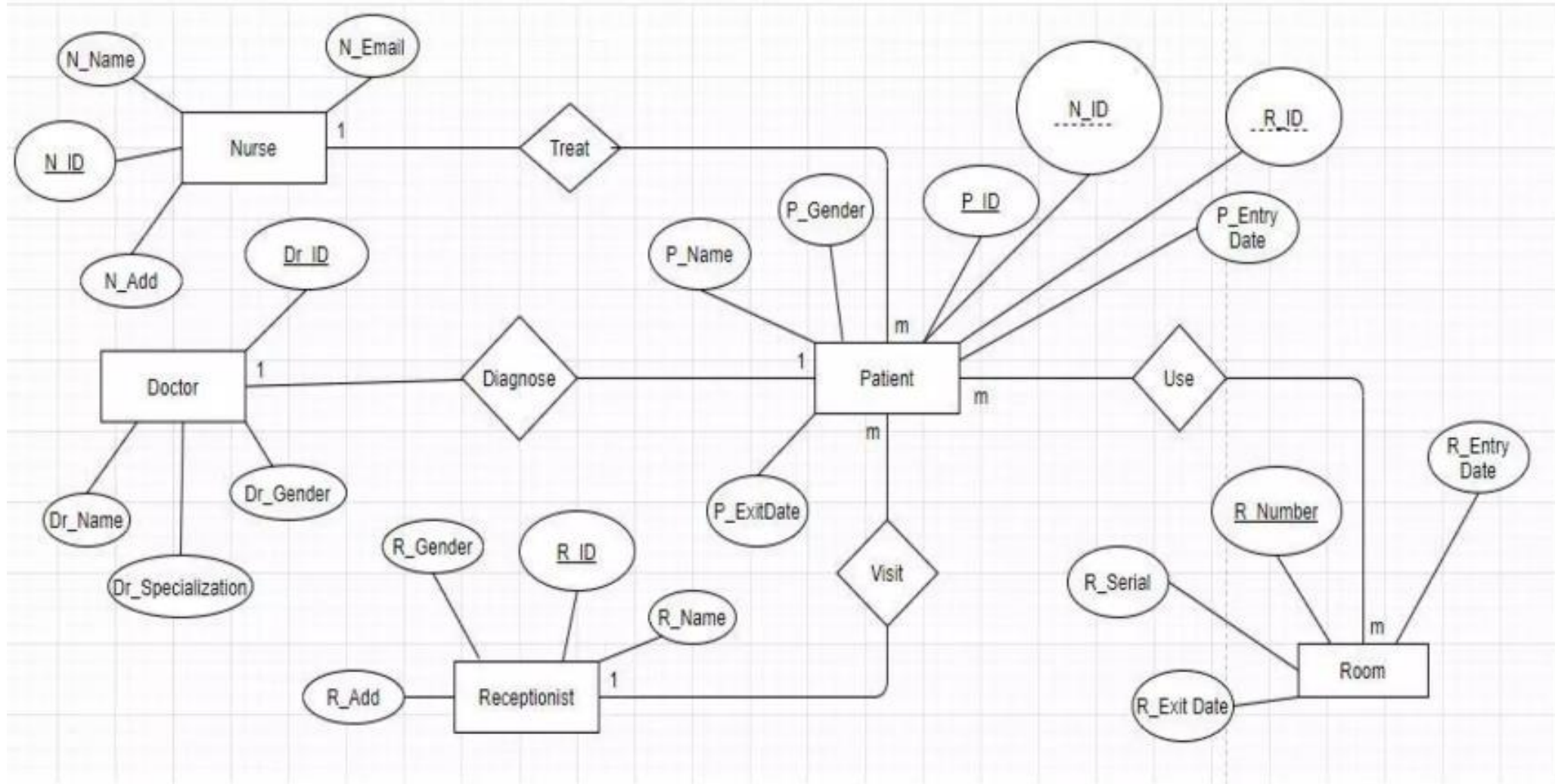


**Type of Relationship:** One-To-Many (1:M)

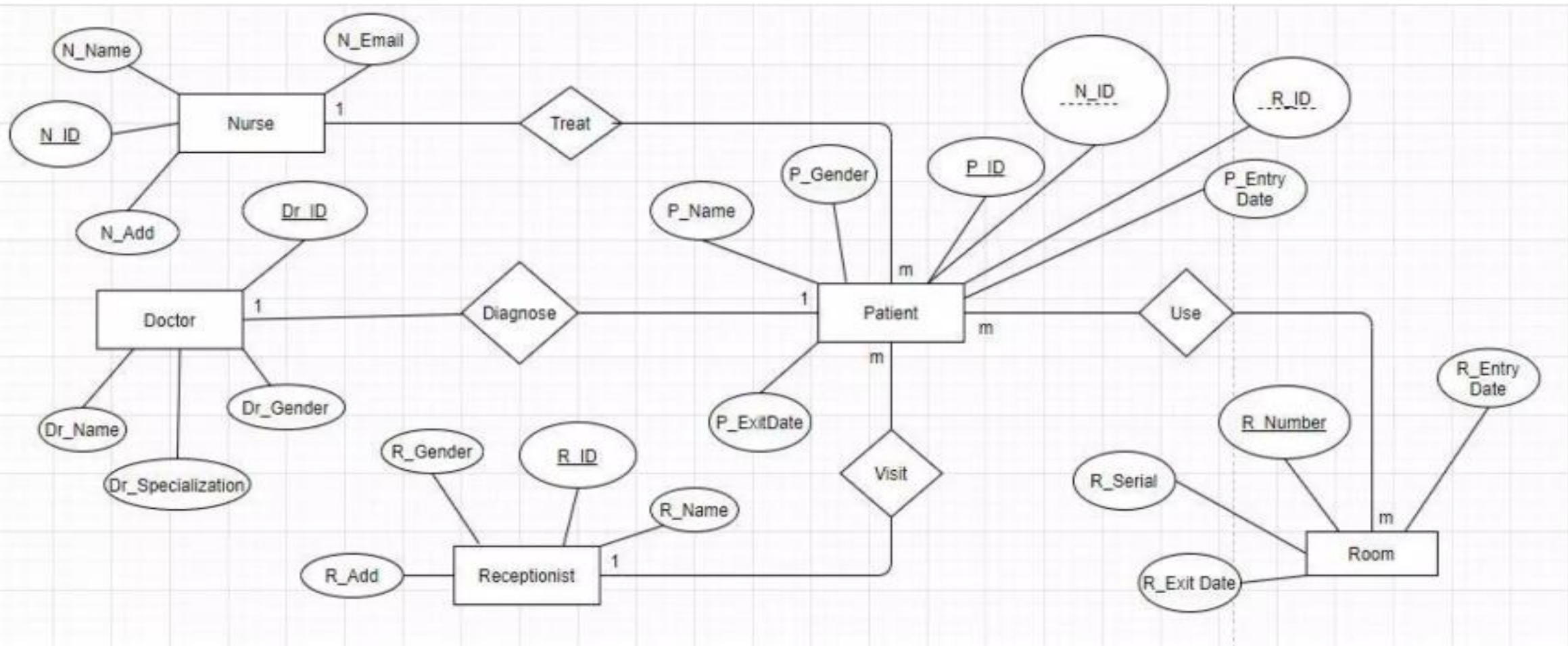
**Degree of Relationship:** Binary

# Chapter 3: Data Modeling

- ERD



# • EERD



# Chapter 4: Logical Data Model

- Represent Entity Classes

Following are the entity classes and there tables

### 1. DOCTOR: (Dr ID, Dr\_Name, Dr\_Specialization, Dr\_Gender)

[illegible]

**2. NURSE:** (N ID, N\_NAME, N\_ADD, N\_EMAIL ID )

[illegible]

**3. PATIENT:** (P ID, P\_NAME, P\_GENDER, P\_ENTRY DATE, P\_EXIT DATE)

[illegible]



**4. RECEPTIONIST:** (R\_ID, R\_NAME, R\_GENDER, R\_ADDRESS)

[illegible]

**5. ROOM:** (R\_ID, R\_SERIAL, R\_ENTRY DATE, R\_EXIT DATE)

[illegible]

- **Represent Relationship**

Following are the relations in this system

## 1. VISIT



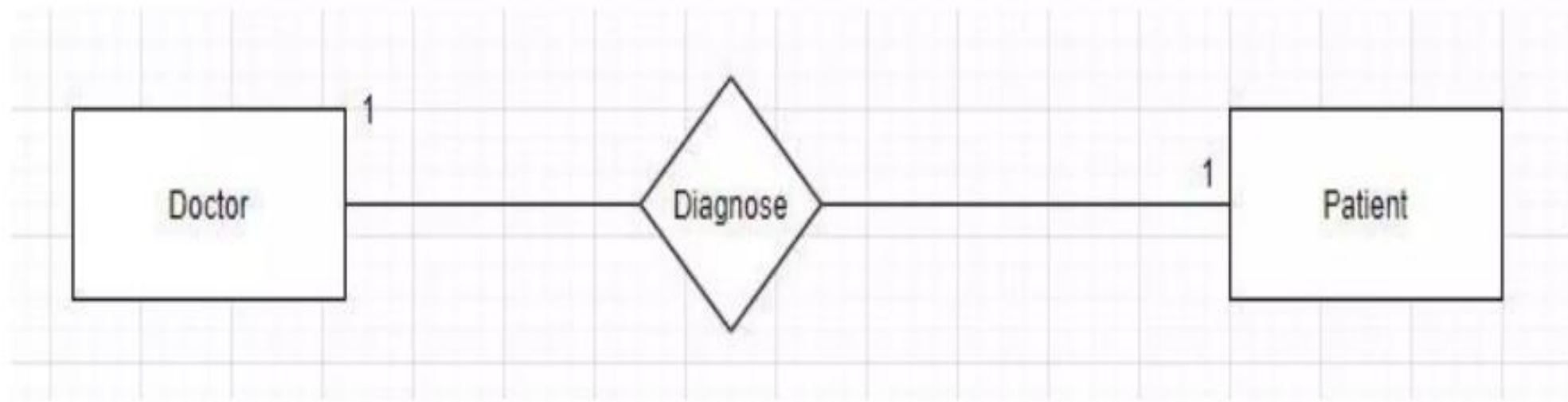
**Type of Relationship:** One-To-Many (1:M)

**Degree of Relationship:** Binary

**Solution:** Solution of this relationship is that take the primary key of RECEPTIONIST table in PATIENT table as foreign key.



## 2. DIAGNOSE



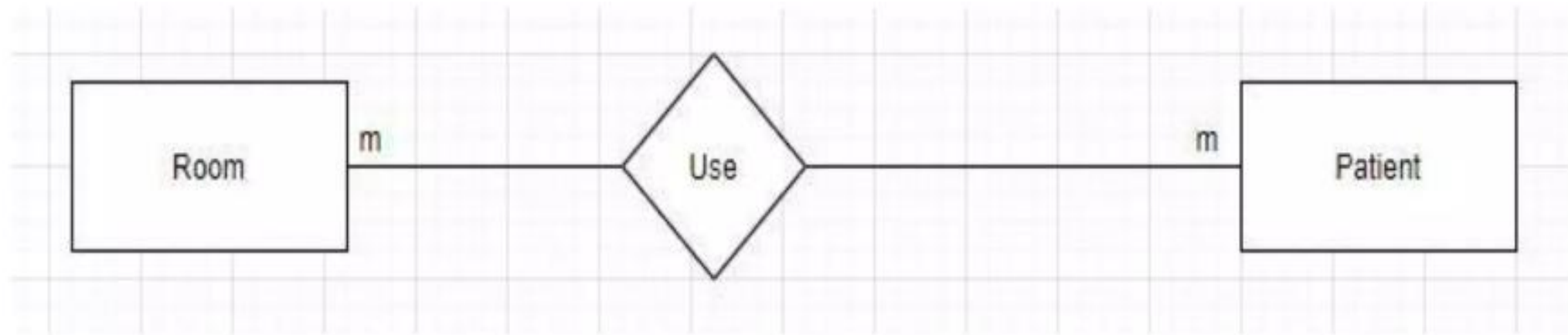
**Type of Relationship:** One-To-One (1:1)

**Degree of Relationship:** Binary

**Solution:** Solution of this relationship is that take the primary key of DOCTOR table in PATIENT table as foreign key or vice versa.



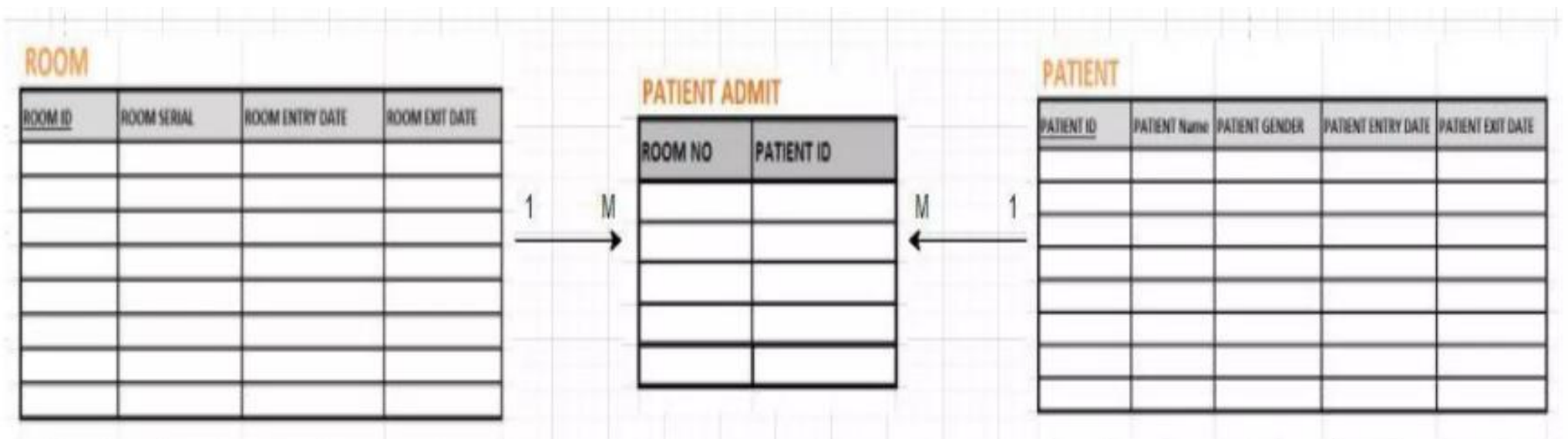
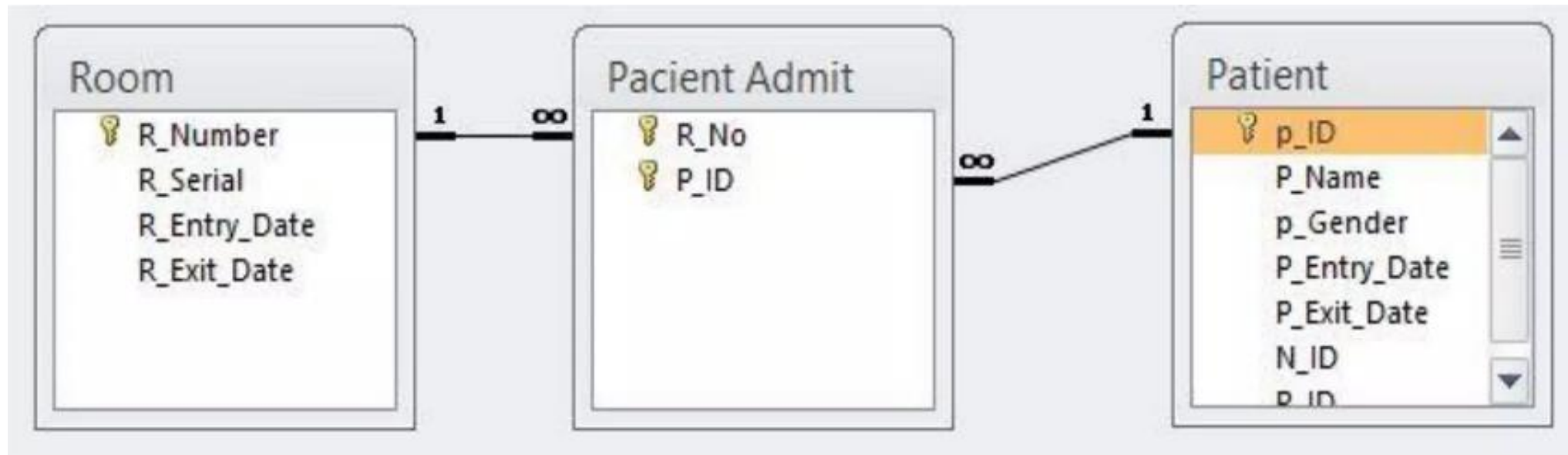
### 3. USE



**Type of Relationship:** Many-To-Many (M:N)

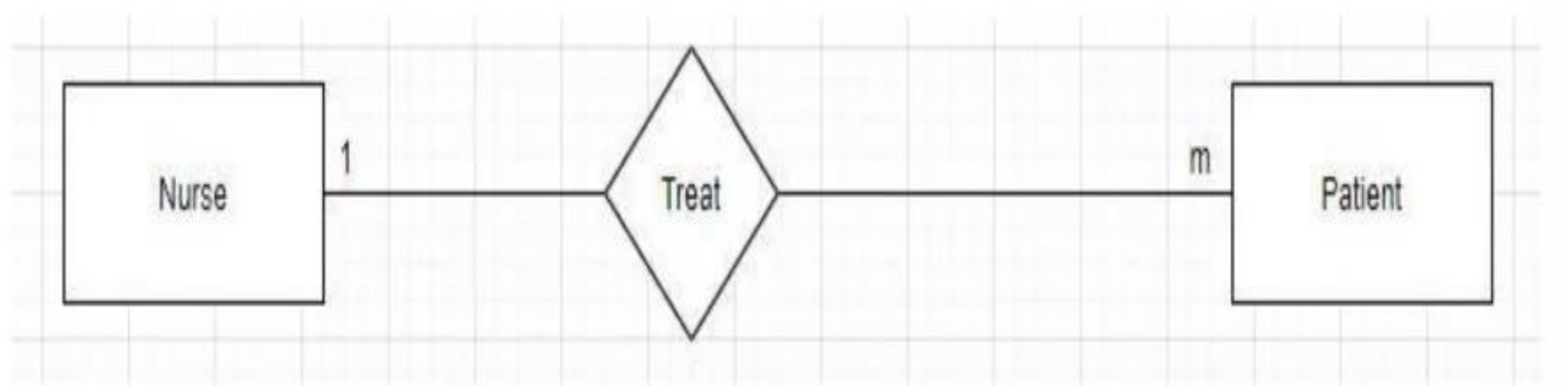
**Degree of Relationship:** Binary

**Solution:** Solution of this relationship is that create the separate table and take the primary keys of both tables (ROOM and PATIENT) in Separate table as composite primary key.





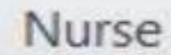
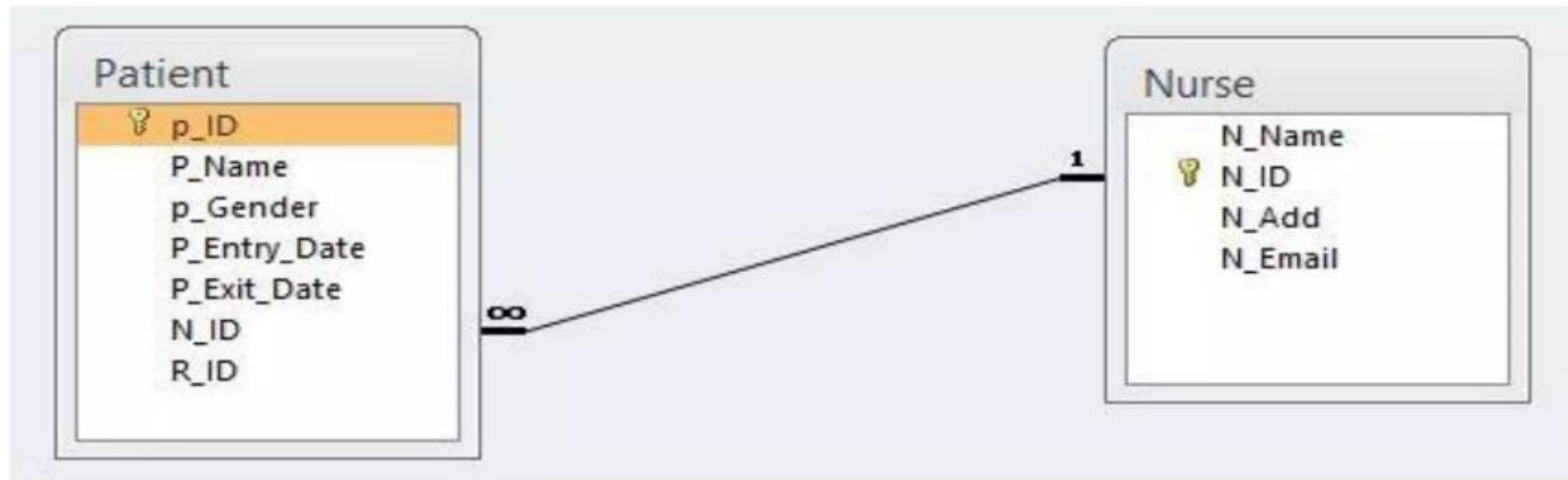
## 4. TREAT



**Type of Relationship:** One-To-Many (1:M)

**Degree of Relationship:** Binary

**Solution:** Solution of this relationship is that take the primary key of NURSE table in PATIENT table as foreign key.



**NURSE**

[illegible]

# 1.Normalization

There are following tables for normalization

## 1. DOCTOR

DOCTOR				
	DOCTOR ID ▾	DOCTOR NAME ▾	DOCTOR SPECIALIZATION ▾	DOCTOR GENDER ▾
+	111	Dr.Imran	MBBS	Male
+	222	Dr.Muazzam Fawad	Medical Specialist	Male
+	333	Dr.Ayesha	Cardiologist	Female
+	444	Dr.Areeba	Neurologist	Female
+	555	Dr.Hafeez	Eye Specialist	Male

**1. First Normal Form (1NF):** DOCTOR table has no repeating group so this table is in 1NF.

**II. Second Normal Form (2NF):** There is no partial dependency because DOCTOR table has no composite primary key. So this table is already in 2NF.

**III. Third Normal Form (3NF):** There is no transitive dependency so this table is in 3NF.

## 2. NURSE

NURSE				
	NURSE NAME ▾	NURSE ID ▾	NURSE ADDRESS ▾	NURSE EMAIL ID ▾
+	Ulfat	111	ISB	Ulfat123@gmail.com
+	Nazia BiBi	222	RWP	nazia123@gmail.com
+	Ayesha	333	ISB	ayesha123@gmail.com
+	Rida	444	ISB	rida123@gmail.com
+	Shazia Aslam	555	RWP	shazia123@gmail.com

**I. First Normal Form (1NF):** NURSE table has no repeating group so this table is in 1NF.

**II. Second Normal Form (2NF):** There is no partial dependency because NURSE table has no composite primary key. So this table is already in 2NF.

**III. Third Normal Form (3NF):** There is no transitive dependency so this table is in 3NF.

### 3. PATIENT

PATIENT							
	PATIENT ID ▾	PATIENT NAME ▾	PATIENT GENDER ▾	PATIENT ENTRY DATE ▾	PATIENT EXIT DATE ▾	NURSE ID ▾	RESEPTIONIST ID ▾
+	111	Aslam	Male	1/1/2021	1/2/2021	555	222
+	222	Hamad	Male	1/5/2021	1/8/2021	111	444
+	333	Khuram	Male	1/3/2021	1/6/2021	222	444
+	444	M Aslam	Male	1/9/2021	1/10/2021	333	555
+	555	Manahil	Female	1/7/2021	1/8/2021	444	111

**I. First Normal Form (1NF):** PATIENT table has no repeating group so this table is in 1NF.

**II. Second Normal Form (2NF):** There is no partial dependency because PATIENT table has no composite primary key. So this table is already in 2NF.

**III. Third Normal Form (3NF):** There is no transitive dependency so this table is in 3NF.



## 4. RECEPTIONIST

RECEPTIONIST				
	RECEPTIONIST NAME ▾	RECEPTIONIST ID ▾	RECEPTIONIST GENDER ▾	RECEPTIONIST ADDRESS ▾
+	Ulfat	111	Female	ISB
+	Aryan	222	Male	RWP
+	Arham	333	Male	RWP
+	Aleena	444	Female	ISB
+	Hafeez	555	Male	ISB

**1. First Normal Form (1NF):** RECEPTIONIST table has no repeating group so this table is in 1NF.

**II. Second Normal Form (2NF):** There is no partial dependency because RECEPTIONIST table has no composite primary key. So this table is already in 2NF.

**III. Third Normal Form (3NF):** There is no transitive dependency so this table is in 3NF.

## 5. ROOM

ROOM					
	ROOM NO ▾	SERIAL ▾	ROOM ENTRY DATE ▾	ROOM EXIT DATE ▾	
+	101	111	1/1/2021	1/4/2021	
+	102	222	1/3/2021	1/4/2021	
+	103	333	1/9/2021	1/12/2021	
+	104	444	1/5/2021	1/8/2021	
+	105	555	1/7/2021	1/10/2021	

- I. First Normal Form (1NF):** ROOM table has no repeating group so this table is in 1NF.
- II. Second Normal Form (2NF):** There is no partial dependency because ROOM table has no composite primary key. So this table is already in 2NF.
- III. Third Normal Form (3NF):** There is no transitive dependency so this table is in 3NF.

**All Access Objects**

Search...

**Tables**

- DOCTOR
- NURSE
- PATIENT
- PATIENT ADMIT
- RECEPTIONIST
- ROOM

**Queries**

- Dynamic\_Doctor\_Gender
- Dynamic\_Doctor\_ID
- Dynamic\_Doctor\_name
- Dynamic\_Doctor\_Special...
- Dynamic\_Nurse\_Address
- Dynamic\_Nurse\_Email
- Dynamic\_Nurse\_ID
- Dynamic\_Nurse\_Name
- Dynamic\_Patient\_Entry\_...
- Dynamic\_Patient\_Exit\_D...
- Dynamic\_Patient\_Gender
- Dynamic\_Patient\_ID
- Dynamic\_Patient\_Name
- Dynamic\_Receptionist\_A...

**RECEPTIONIST**

Field Name	Data Type	Description
R_Name	Text	
R_ID	Number	
R_Gender	Text	
R_Add	Text	

**Field Properties**

**General**

Field Size	50
Format	
Input Mask	
Caption	RECEPTIONIST NAME
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	No
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None
Smart Tags	

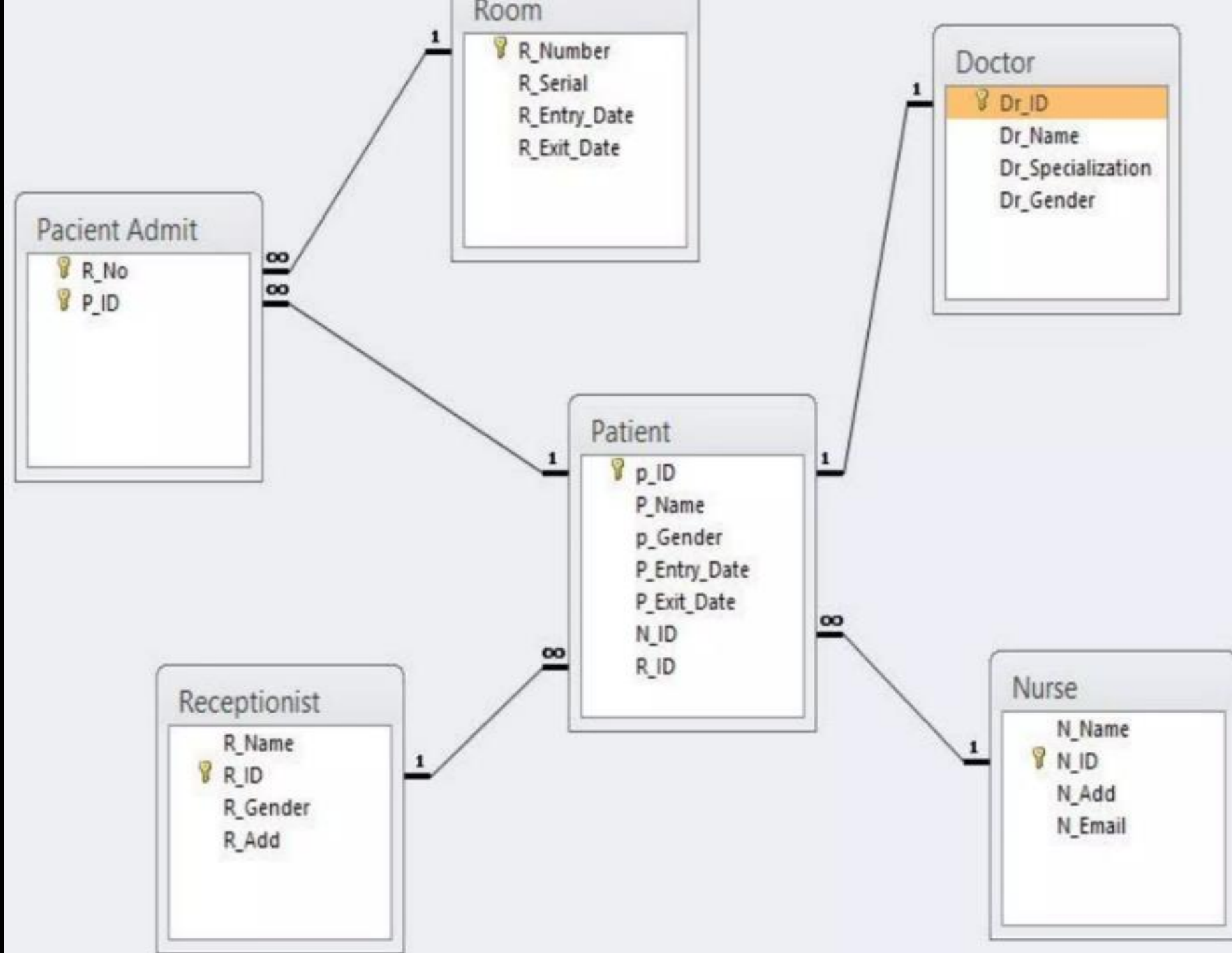
# Chapter 5: Implement ation

## • Creation Of Tables

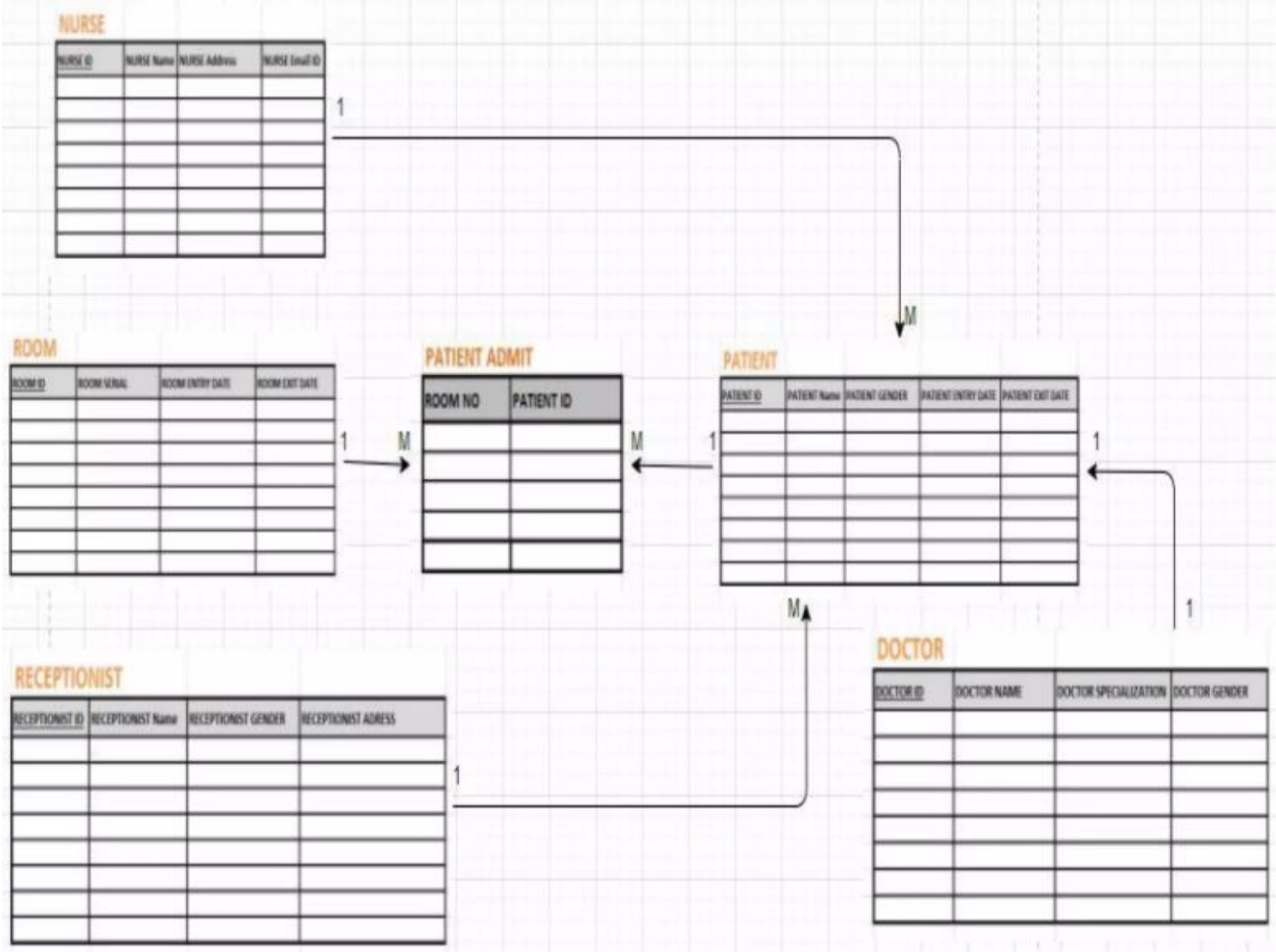
There are 5 tables  
created in MS  
Access

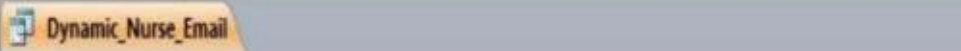


# RELATIONSHIP (ACCESS)



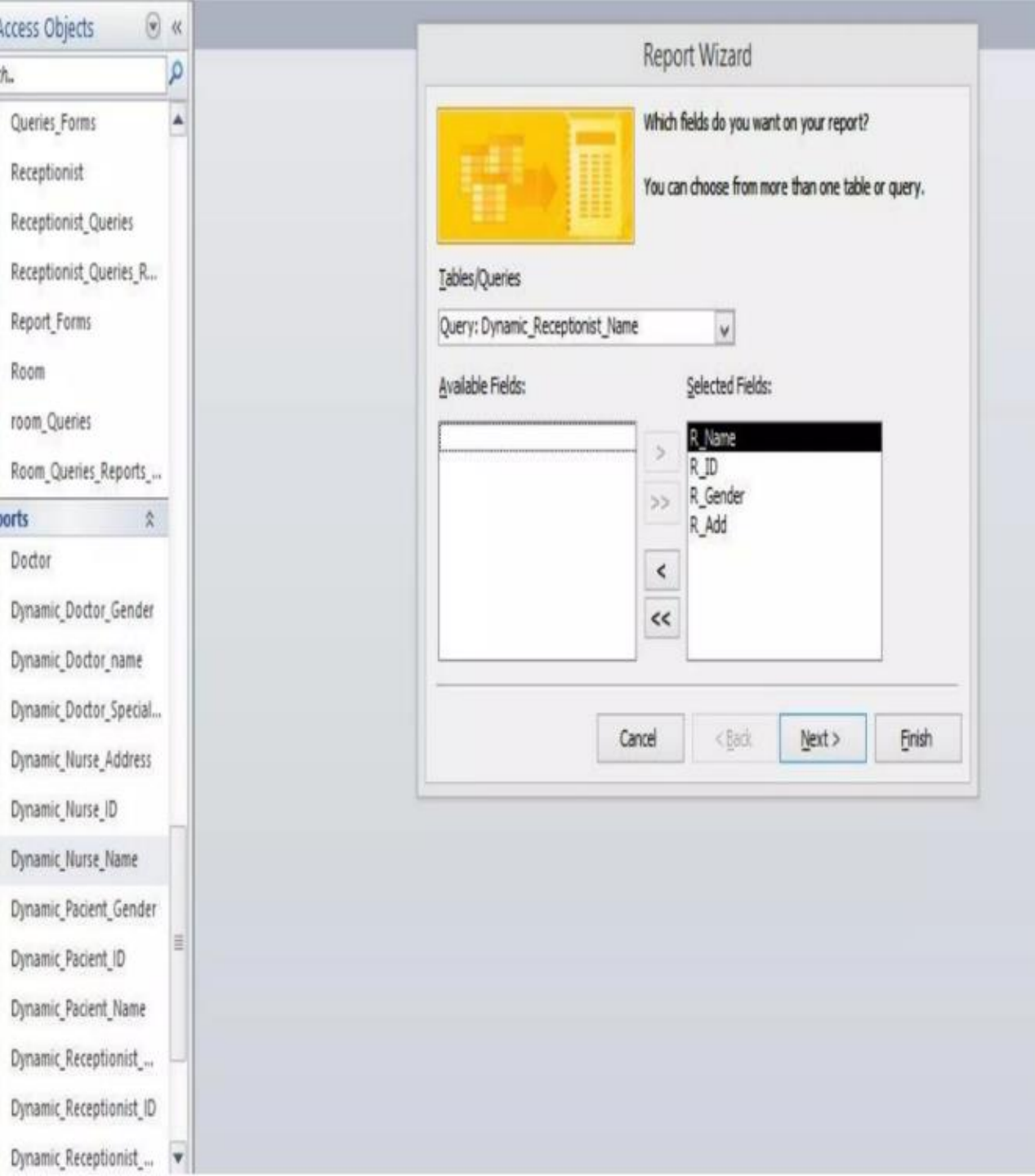
# LOGICAL DATA MODEL



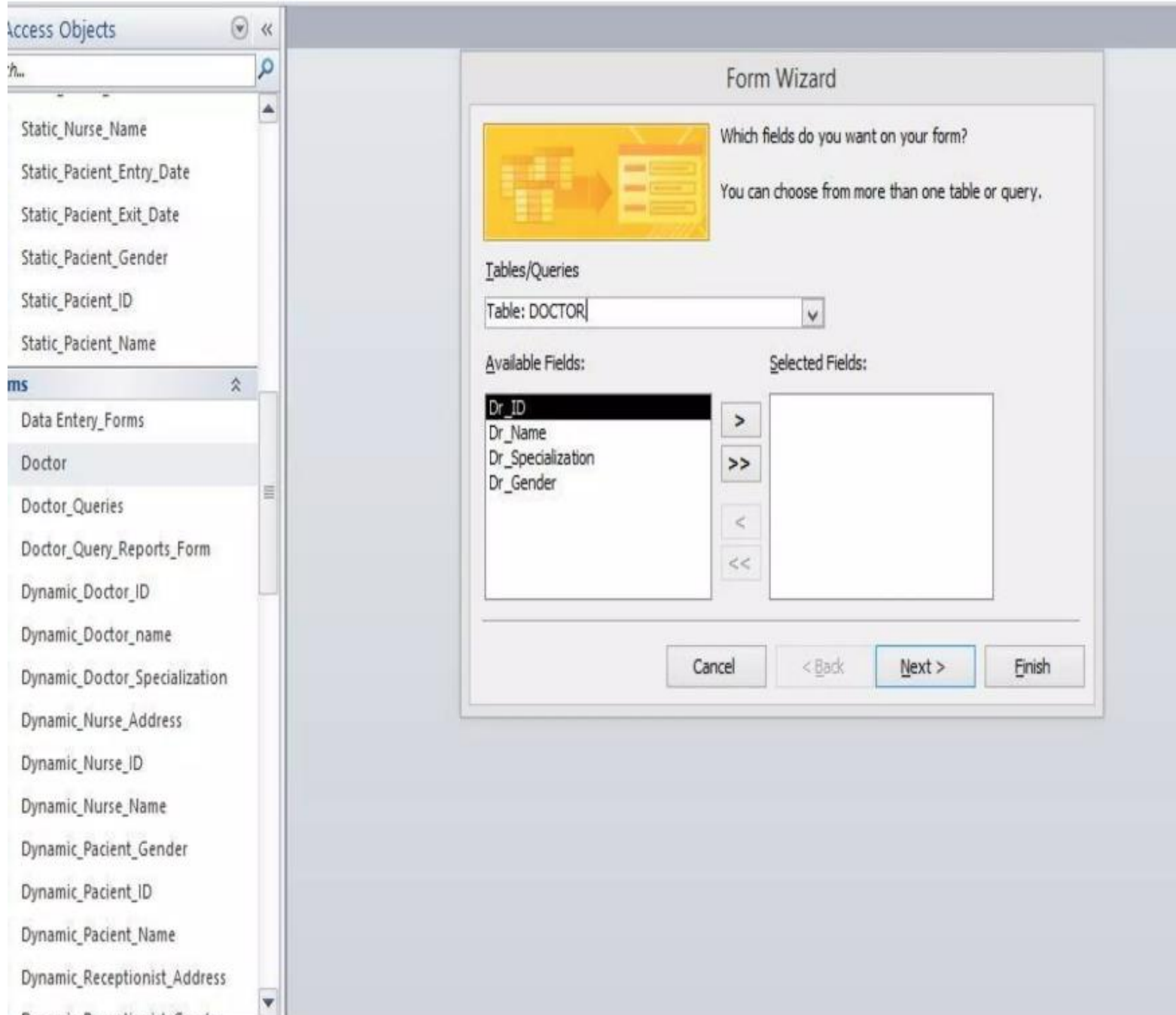


# 21 Queries were created in MS Access

# 21 Queries were created in MS Access



- **Creation Reports**  
20 Reports were created in MS Access



## • Creation Of Forms

The following 35 form were created while main menu form has following options.

1. Data entry
2. Queries
3. Reports

# Appendix

- User Manual

## MAIN MENU and Entry Data

First of all open the HMDS (Hospital Management Database System) then HMDS will show the MAIN MENU plate form that given bellow. Then press the button of Entry Data

After press the button of Data Entry you can see the buttons of Doctor Form, Nurse Form, Patient Form, Receptionist form and Room Form.

**MAIN MENU**



Press the buttons **Doctor Form**, **Nurse Form**, **Patient Form**, **Receptionist form** and **Room Form**, you can see the forms respectively that are givens bellow.

Main MenuData Entry\_Forms

Close

Forms

Doctor Form

Nurse Form

Patient Form

Receptionist Form


Room Form




Record: 141 of 1No FilterSearch



Main MenuData Entry FormsDoctor



# Doctor

Print

Close

Doctor ID

Doctor Name


Dr.Imran

Doctor Specialization

MBBS

Doctor Gender

Male



First

Previous

Next


Last

Delete


Add Record

Record: 1 of 5No FilterSearch

Main MenuData Entry FormsNurse



# Nurse

Print

Close

Nurse Name

Ufat

Nurse ID


111

Nurse Address

ISB

Nurse Email ID

Ulfat123@gmail.com



First

Previous

Next

Last


Delete

Add Record


Record: 1 of 5No FilterSearch



Main MenuData Entry\_FormsPatient



# Patient



Close

Patient ID

Patient Name

Aslam

Patient Gender

Male

Patient Entry Date

1/1/2021

Patient Exit Date


1/2/2021

N\_ID

555

R\_ID

222



First

Previous

Next


Last

Delete


Add Record

Record: 141 of 5No FilterSearch

Main MenuData Entry\_FormsReceptionist



# Receptionist



Close

Receptionist Name

Jifan

Receptionist ID


111

Receptionist Gender

Female

Receptionist address

ISB



First

Previous

Next

Last

Delete

Record: 141 of 5No FilterSearch



## Room



Close

Room No	<input type="text" value="101"/>
Serial	<input type="text" value="111"/>
Room Entry Date	<input type="text" value="1/1/2021"/>
Room Exit Date	<input type="text" value="1/4/2021"/>



First	Previous	Next	Last	Delete	Add Record

Go to Main Menu and press the button Queries. It will show the Queries Buttons of **Doctor Queries**, **Nurse Queries**, **Patient Queries**, **Receptionist Queries** and **Room Queries**



Press the buttons **Doctor Queries**, **Nurse Queries**, **Patient Queries**, **Receptionist Queries** and **Room Queries**, you can see the related Queries Button respectively that are given below.



Close

## Nurse Queries

Nurse\_Querie  
(Name)

Nurse\_Querie  
(ID)

Nurse\_Querie  
(Address)



Close

## Patient Queries

Patient\_Querie  
(Name)

Patient\_Querie  
(ID)

Patient\_Querie  
(Gender)



Close

# Receptionist Queries

Receptionist\_Query  
(Name)

Receptionist\_Query  
(Gender)

Receptionist\_Query  
(Address)



Close

# Room Queries

Room\_Query  
(No)

Room\_Query  
(Serial)

Room\_Query  
(Entry Date)







Go to Main Menu and press the button **Reports**. It will show the Report Buttons of **Doctor Report**, **Doctor Queries Report**, **Nurse Report**, **Nurse Queries Report**, **Patient Report**, **Patient Queries Report**, **Receptionist Report**, **Receptionist Queries Report**, **Room Report** and **Room Queries Report**





## Doctors Report

Doctor ID	Doctor Name	Doctor Specialization	Doctor Gender
555	Dr.Hafeez	Eye Specialist	Male
222	Dr.Muazzam Fawad	Medical Specialist	Male
333	Dr.Ayesha	Cardiologist	Female
444	Dr.Areeba	Neurologist	Female
111	Dr.Imran	MBBS	Male

Press The Buttons **Doctor Report**, **Nurse Report**, **Patient Report**, **Receptionist Report**, **Room Report** and you can see the related Report Form respectively that are givens bellow.



## Nurses Report

Nurse Name	Nurse ID	Nurse Address	Nurse Email ID
	111	ISB	Ulfat123@gmail.com
Ayesha	333	ISB	ayesha123@gmail.com
Nazia BiBi	222	RWP	nazia123@gmail.com
Rida	444	ISB	rida123@gmail.com
Shazia Aslam	555	RWP	shazia123@gmail.com



## Patients\_Report

N_ID	Patient ID	Patient Name	Patient Gender	Patient Entry Date	Patient Exit Date	R_ID
111	222	Hamad	Male	1/5/2021	1/8/2021	444
222	333	Khuram	Male	1/3/2021	1/6/2021	444
333	444	M Aslam	Male	1/9/2021	1/10/2021	555
444	555	Manahil	Female	1/7/2021	1/8/2021	111
555	111	Aslam	Male	1/1/2021	1/2/2021	222



## Receptionists\_Report

Receptionist Name	Receptionist ID	Receptionist Gender	Receptionist address
Ulfat	111	Female	ISB
Hafeez	555	Male	ISB
Arham	333	Male	RWP
Aleena	444	Female	ISB
Aryan	222	Male	RWP



## Rooms\_Report

Room No	Serial	Room Entry Date	Room Exit Date	
101	111	1/1/2021	1/4/2021	
104	444	1/5/2021	1/8/2021	
103	333	1/9/2021	1/12/2021	
105	555	1/7/2021	1/10/2021	
102	222	1/3/2021	1/4/2021	

## Doctor Queries\_Report

Doctor\_Report  
(Name)

Doctor\_Report  
(Gender)

Doctor\_Report  
(Specialization)



Press the buttons **Doctor Queries Report**, **Nurse Queries Report**, **Patient Queries Report**, **Receptionist Queries Report**, **Room Queries Report** and you can see the related **Query Report** Buttons respectively that are givens bellow.



## Nurse Queries\_Report

[Close](#)

Nurse\_Report  
(Name)

Nurse\_Report  
(ID)

Nurse\_Report  
(Address)



## Pacient Queries\_Report

[Close](#)

Patient\_Report  
(Name)

Patient\_Report  
(ID)

Patient\_Report  
(Gender)





Close

## Receptionist Queries Report

Receptionist\_Report  
(Name)

Receptionist\_Report  
(ID)

Receptionist\_Report  
(Gender)



Close

## Room Queries Report

Room\_Report  
(No)

Room\_Report  
(Serial)

Room\_Report  
(Entry Date)



**THE END**

