

Medical Center Management System Database

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Functional Requirements Report for Medical Center Management System Database

1. Introduction

This report describes the functional requirements of a Clinic Management System. The system focuses on managing patients, doctors, appointments, services, and maintenance to make clinic operations faster and more organized.

2. Project Scope

The system will cover core clinic operations such as managing patients, doctors, appointments, medical records, and services & payments. These features will help improve efficiency, reduce errors, and support better healthcare service delivery in the clinic.

3. Functional Requirements:

3.1 Patient Management:

- This part stores basic information about patients, like Patient_ID, Name, Gender, Phone, Adress, Email, Medical_history, phone number, Blood_type, and Marital_status.
- We can determine which blood types you can donate or receive blood from, based on the blood transfusionTable, for cases that may require tests and blood transfusions.

3.2 Staff Management:

This part stores information about the clinic staff such as Staff_ID , Name, Gender, Birth_Date, Phone, Email, Specialization(for doctors), Hire_Date.,Gender

Not all the staff are doctors we have employee's working on the medical center

- Each doctor has a consultation fee.
- Any other employee has a salary.
- Each employee belongs to a specific department.
- Each doctor belongs to a specific department.

3.3 Equipment Management:

This part stores information about the clinic's equipment, like Equipment_ID, Name, Model, price,maintenance interval

- Some Equipment's provides services
- Each Equipment has a maintenance interval

3.4 Departments:

This part stores information about the different departments in the clinic, like Department_ID, name

- Each department has a phone number

3.5 Appointment:

- The system allows the patient to book an appointment with a specific doctor. Once the booking is confirmed, the system automatically stores all relevant appointment details, including patient information, assigned doctor, visit date, payment method
- The system supports multiple payment methods, allowing the patient to pay either online (via credit card or electronic payment) or in person at the clinic(cash).
- During the booking process, the system allows the patient to request extra services if needed, with additional fees applied.
- The system allows individuals to request medical services, such as X-rays, ultrasound, or laboratory tests, without requiring a doctor's consultation.

3.6 Medical_history:

-We can know the medical history of patient by knowing the diseases he has.

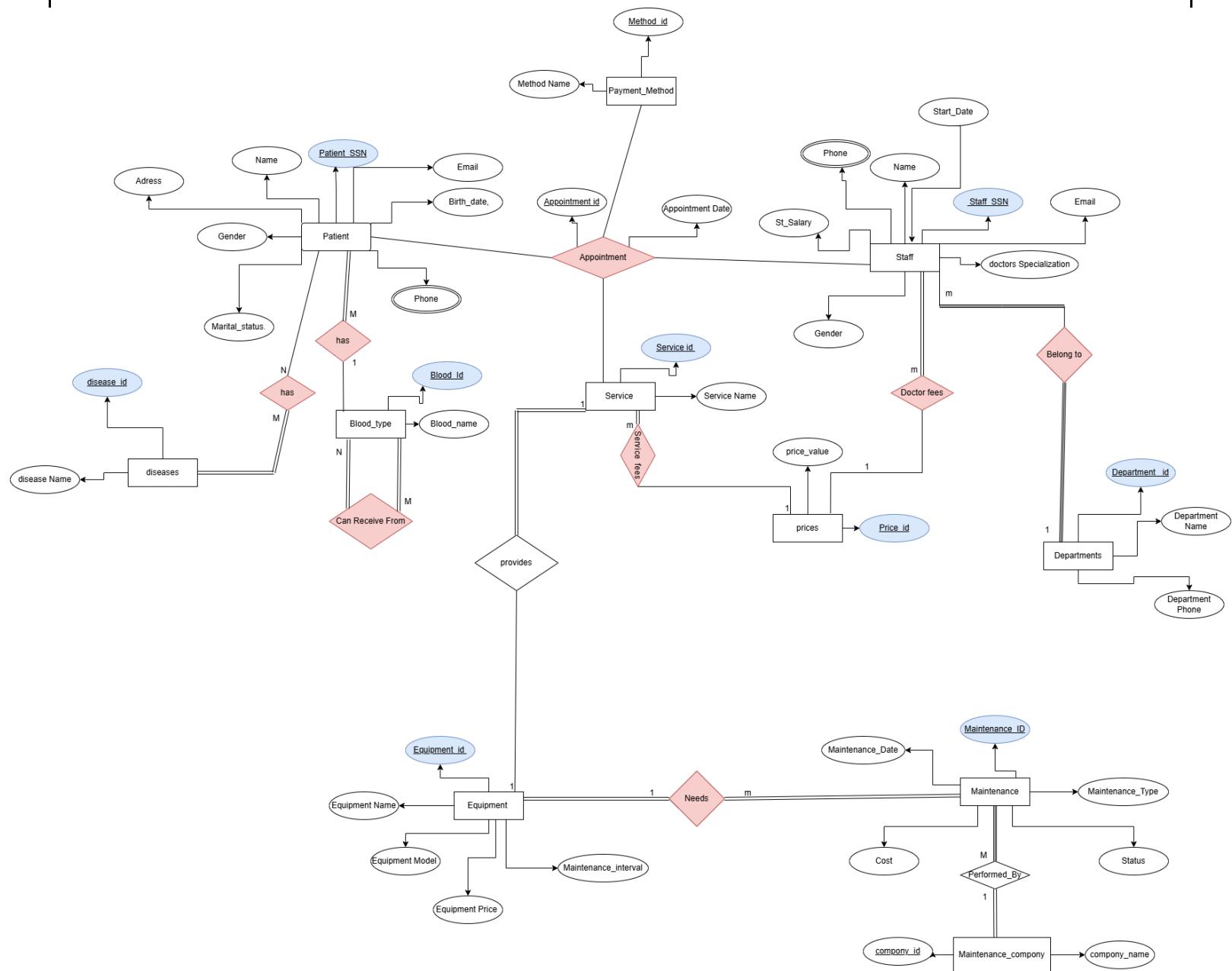
- The patient may have one disease or more .
- Some patients may haven't any disease .

3.7 Maintenance:

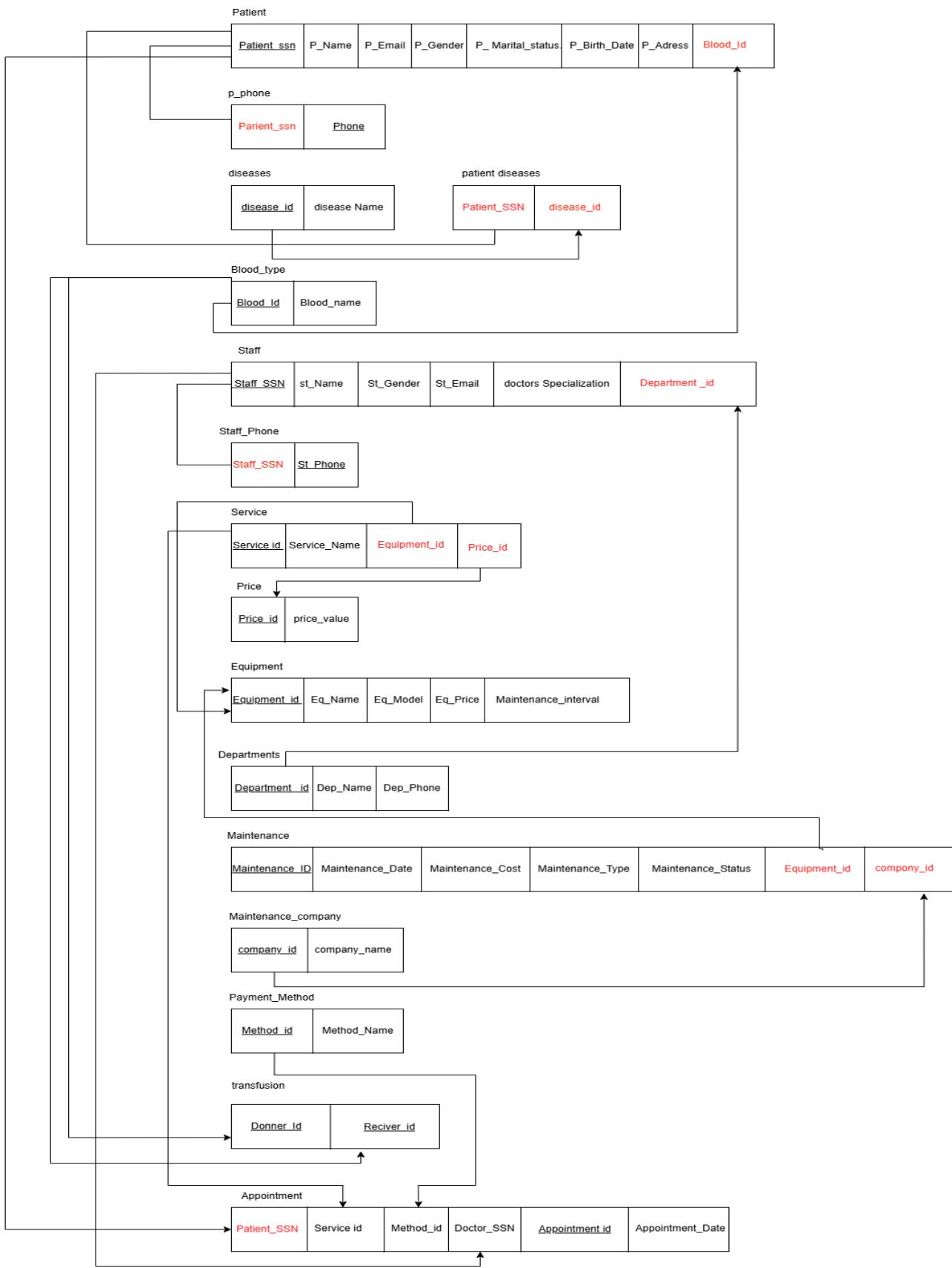
- Each equipment undergoes maintenance, which is performed by a

specific maintenance company. We can know more information about the maintenance by the maintenance id,date,status(done or pending),the maintenance type,And how much did it cost us?

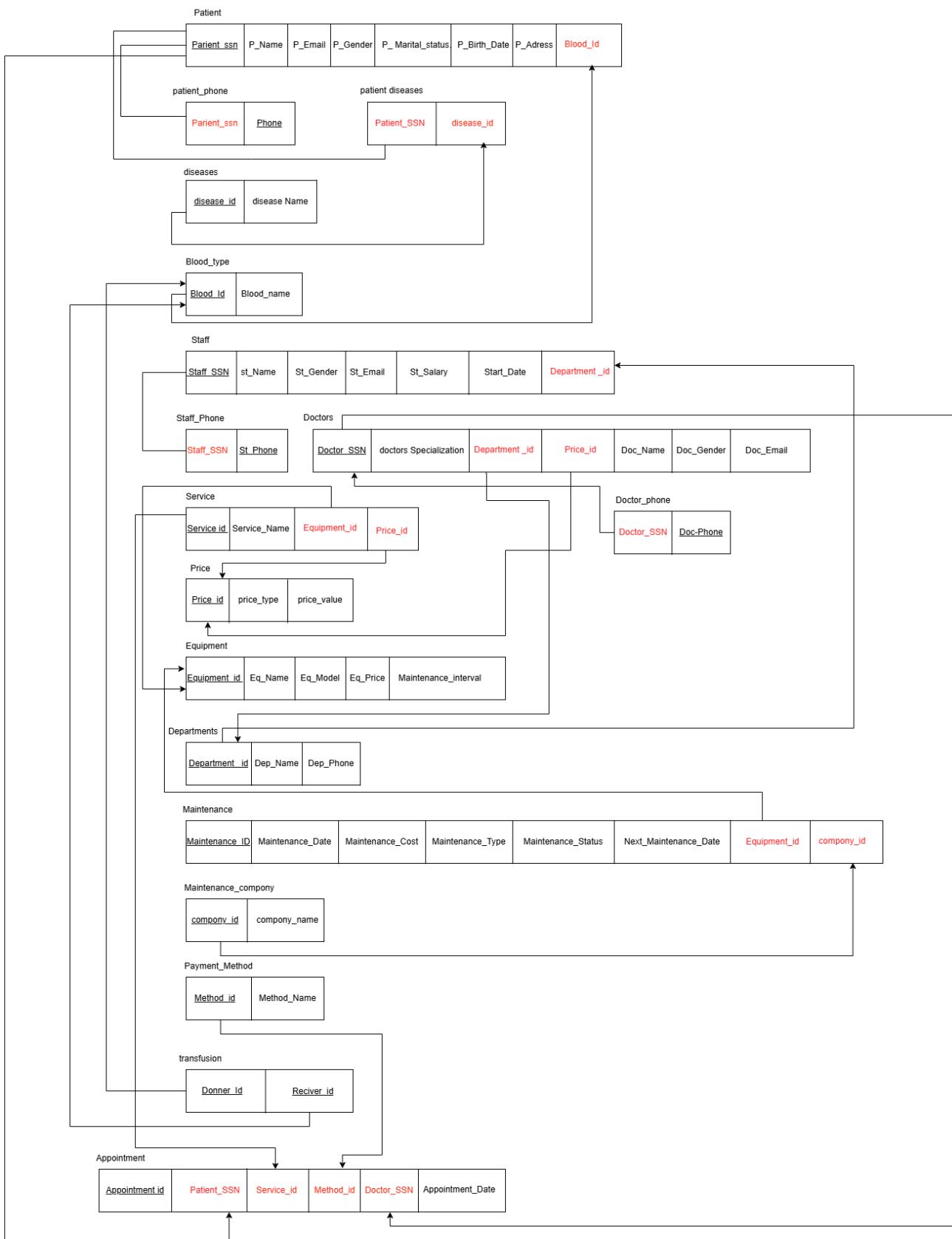
ERD:



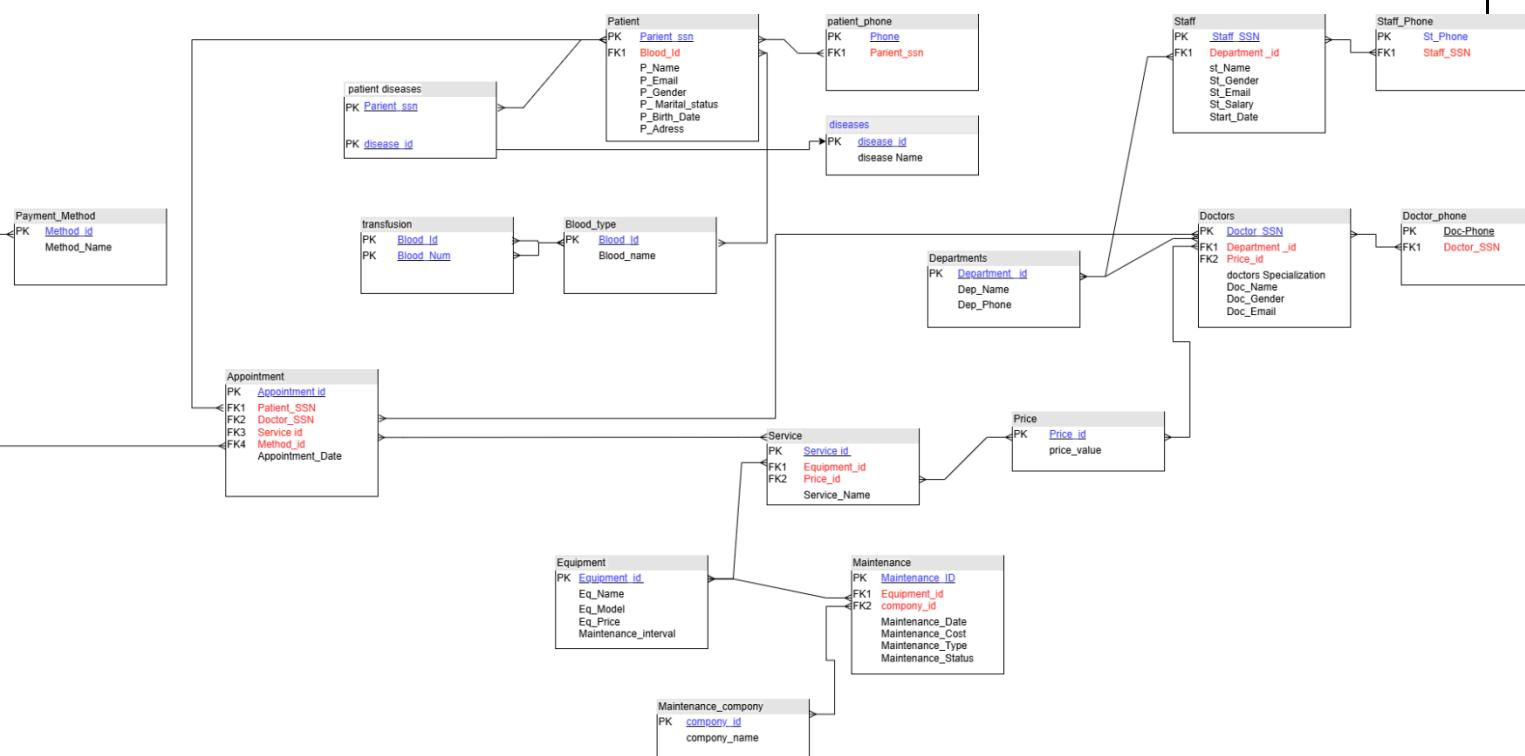
MAPPING AND 1F NORMALIZATION:



2NF & 3NF NORMALIZATION:



SCHEMA:



SQLQuery1.sql - DESKTOP-1PG4F9M\SQLSERVER01.MedicalCenter (DESKTOP-1PG4F9M\Access (76)) - Microsoft SQL Server Management Studio

```
select*
from Patient
```

100 %

Results Messages

Patient_id	Blood_Id	Patient_Name	Patient_Email	Patient_Gender	Patient_Marital_Status	Patient_Birth_Date	Patient_Adress
1	001160216	Jeanne Hood	dallen@example.com	M	Divorced	2010-04-12	"01212 Johnson Circles, Lake Kristen, RI 51495"
2	001769807	Chey Clark	krystalwelch@example.net	M	Single	1945-10-25	"15953 Kelly Brook, Port Madison, CA 88027"
3	00272546	Jean Saunders	cynthiamuelle@example.net	F	Divorced	1952-09-14	"Unit 0496 Box 5218, DPO AP 78033"
4	003883696	Kathleen Riley	amanda88@example.net	F	Single	1953-08-26	"260 John Loft Apt. 190, Smithtown, CA 90260"
5	004142924	Angela Dunn	jamescarlson@example.com	F	Divorced	1984-06-12	"41972 Smith Oval, Port Lindalft, MA 14613"
6	004182423	Maria Hodge	allison24@example.net	M	Divorced	2024-01-26	"6666 Christina Causeway Apt. 923, Timothytown, FL..."
7	004628562	Alees Thomas	carolynwang@example.com	M	Divorced	1984-02-03	"80393 Khan Trace Suite 626, West Dawn, ME 76742"
8	006570905	Veronica Pittman	nguyengenoge@example.com	M	Married	1987-04-26	"279 Ryan Grove, West Ashley, ME 24089"
9	007076717	Dorothy Ingram	melinda35@example.net	M	Divorced	1993-08-31	"02890 Nathan Fork Apt. 793, South Kurtstad, IN 51..."
10	007098290	Jeremy Martinez	zvincent@example.org	F	Single	2002-02-15	"USCGC Sullivan FPO AP 24633"
11	007361789	Brian Reeves	diane66@example.org	F	Single	1937-03-02	"99832 Christopher Hollow, Lowfort, CO 55286"
12	007807883	David Ray	taylorjenifer@example.com	M	Married	1959-06-18	"32526 Rhodes Square Apt. 614, South Michaelview,..."
13	008502863	Jake Hurley	oones@example.org	F	Single	1950-05-02	"3541 Carroll Mall Apt. 250, South Krishnaburgh, M..."

Query executed successfully.

SQLQuery1.sql - DESKTOP-1PG4F9M\SQLSERVER01.MedicalCenter (DESKTOP-1PG4F9M\Access (76)) - Microsoft SQL Server Management Studio

```
select St_Name, d.Dep_Name
from Staff s
join Departments d
on s.Department_id=d.Department_id
```

100 %

Results Messages

St_Name	Dep_Name
Angelica Cummings	ENT
Cathy Lawson	General Surgery
Zoe Russo	Pediatrics
Kevin Webb	ENT
Ricky Bradley	Dermatology
Mario Rogers	Radiology
Anna Torres	Neurology
Ms. Margaret Jennings MD	Orthopedics
Laura Cabera	Emergency
Carolyn Krause	Emergency
Stephen Young	Radiology
Victoria Taylor	Ophthalmology
Daniel McGrath	Ophthalmology

Query executed successfully.

SQLQuery1.sql - DESKTOP-1PG4F9M\SQLSERVER01.MedicalCenter (DESKTOP-1PG4F9M\Access (76)) - Microsoft SQL Server Management Studio

```
select Patient_Name,a.Doctor_SSN,a.Appointment_Date,a.Service_id
from Appointment a
join Patient p
on a.Patient_SSN=p.Patient_ssn
```

100 %

Results Messages

Patient_Name	Doctor_SSN	Appointment_Date	Service_id
Dorothy Ingram	534322357	2025-01-13	15
Dorothy Ingram	076894567	2025-07-24	45
David Ray	304306168	2025-07-26	41
Sally Stewart	182542746	2025-09-19	13
Tonya Davis	731804044	2025-10-26	42
Bryce Forber	869443032	2025-08-19	20
Shannon Hoffman	188362650	2025-08-03	5
Taylor Munoz	060903265	2025-12-07	28
Taylor Munoz	281704198	2024-12-25	14
Teresa Grant	296687038	2025-08-23	1
Heather Morton	068877958	2025-06-03	40
Jill Mata	182542746	2025-08-15	44
Tonya Richardson	861304034	2025-06-21	19

Query executed successfully.