CLINIC
MANGEMENT SYSTEM

PREPARED BY

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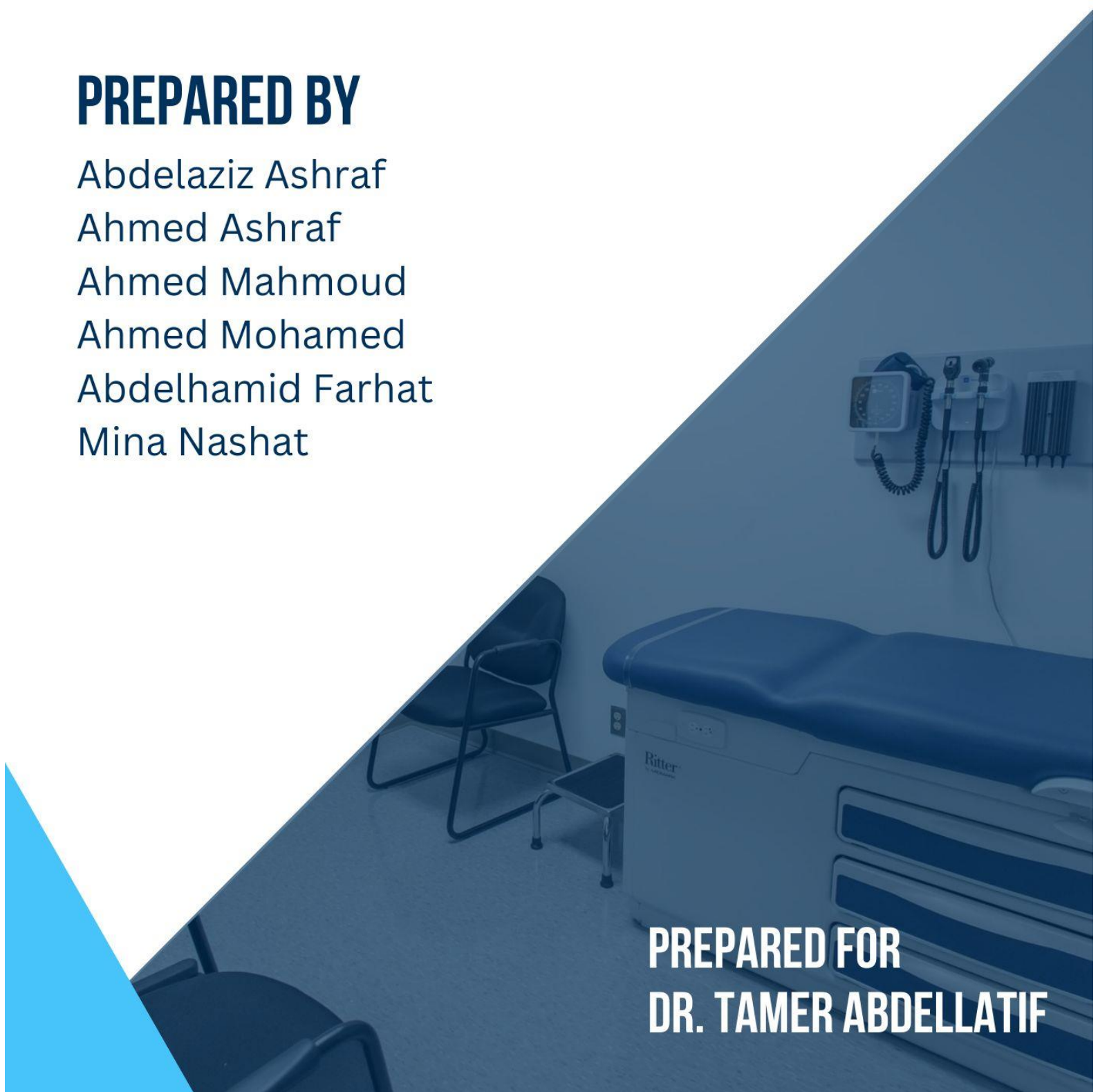

PREPARED FOR
DR. TAMER ABDELLATIF

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II

Table of abbreviations

Abbreviation	Stands For
P	Patients
PA	Paramedics

A	Appointments
P	Procedures
I	Insurance
MS	Medical supplies
S	Suppliers
B	Bills
R	Rooms
MS	Medical_Waste
D	Doctors
E	Equipment
MI	Medical_investigations

Introduction:

Dr Ashraf Shabib's clinic is a surgery clinic located in Qena governorate in the city of Qus. It is a clinic that specializes in surgical operations, and it is operated and managed by its owner Dr Ashraf Mohamed Shabib. The goal of the system is to create a tool for managing the workflow of The owner. There was a need for a database that would keep track of patients, appointments, procedures, medication, etc. After contacting the business owner and discussing what will be needed in this database, we began conducting our first actions in the project and that takes us to chapter one.

Fig1. clinic skitch [1]

1 .1 Database analysis

1. Patients:

- P Name
- P gender
- P id
- P Date of birth
- P age
- P Address
- P Phone number
- P Insurance
- P Allergies
- P Medical history

2. Paramedics:

- PA Id
- PA Name
- PA phone
- PA address
- PA e-mail
- PA SSN
- PA Gender
- PA Salary
- PA Role
- PA experience
- PA skills
- PA Shift
- PA qualification

3. Appointments:

- A Patient id
- A patient name
- A NO.
- A type
- A time
- A Follow update.

4. Procedures:

- P CPT
- P Patient name
- P equipment
- P number
- P cost
- P date and time
- P paramedics name
- P medical supplies
- P Duration
- P room

5. Insurance:

- I Provider name
- I Policy number
- I patient name
- I patient SSN
- I discount.

6. Medical_Supplies

- MS id
- MS name
- MS total amount
- MS consumption
- MS available
- MS expiry date.

7. Suppliers

- S name
- S phone
- S email
- S address

8. Bills

- B Patient ID
- B patient name
- B Service date
- B Total amount

9. Rooms

- R capacity
- R number
- R type
- R contents
- R floor

10. Medical_Waste

- MW company name
- MW phone number
- MW date

11. Doctors

- D Id
- D Name
- D phone
- D address
- D e-mail
- D Salary
- D experience
- D Shift

12. Equipment

- E type
- E amount
- E serial number
- E last maintenance date
- E sterilization

13. Medical_Investigations

- MI patient name
- MI Diagnosis
- MI Needs a procedure.
- MI medications
- MI medical lab analysis
- MI medical Radiology

1.2. Electronic copy of

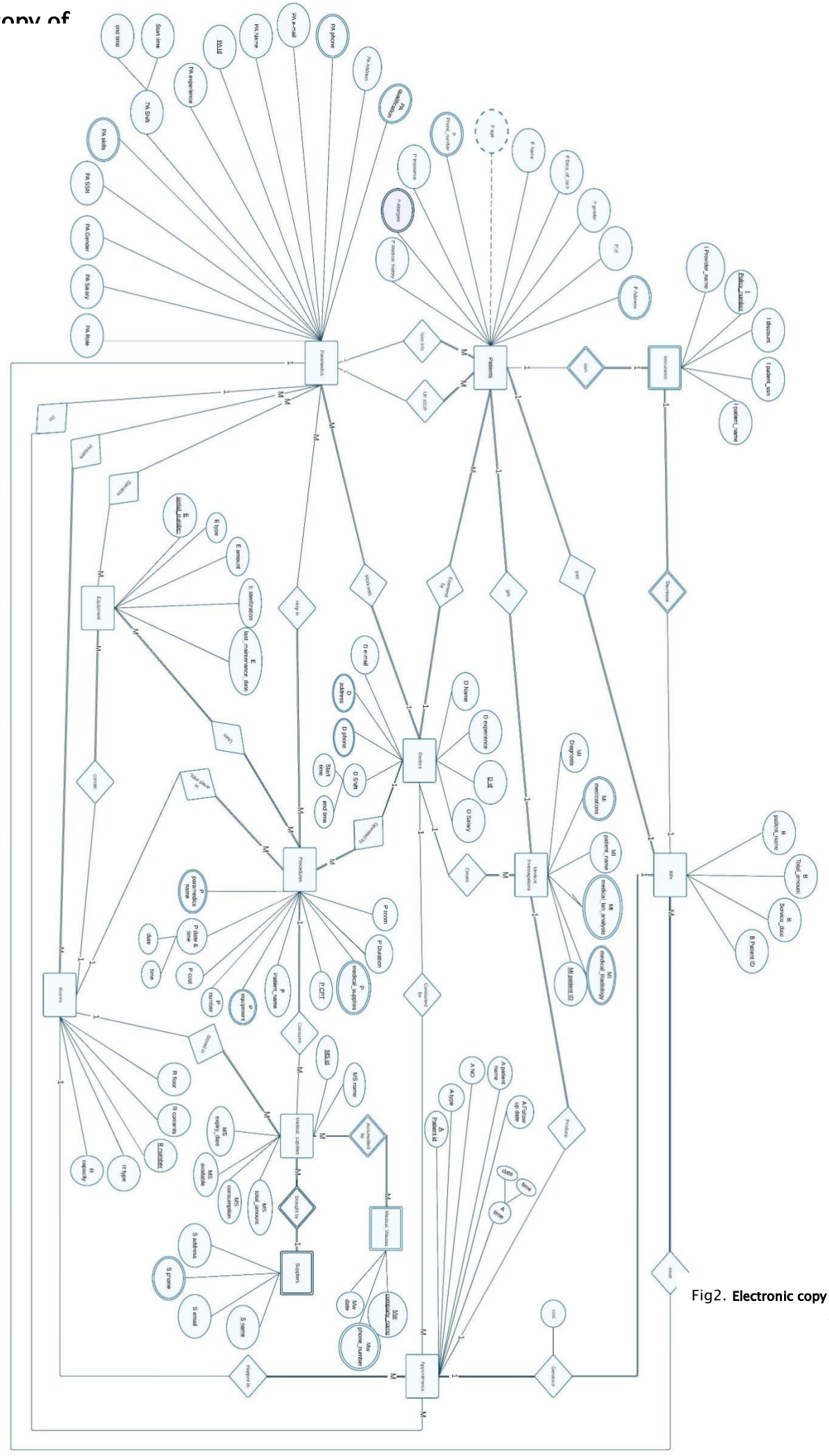
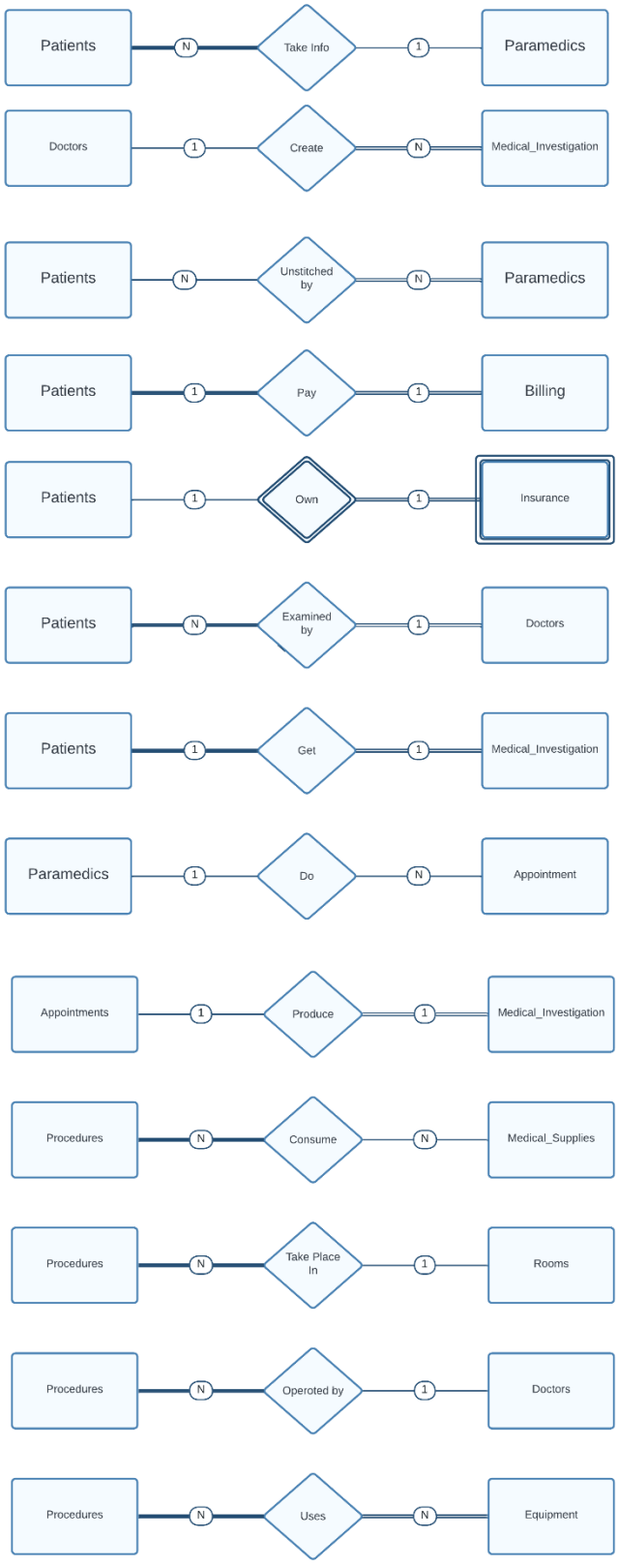


Fig2. **Electronic copy of**

1.3 Relationships



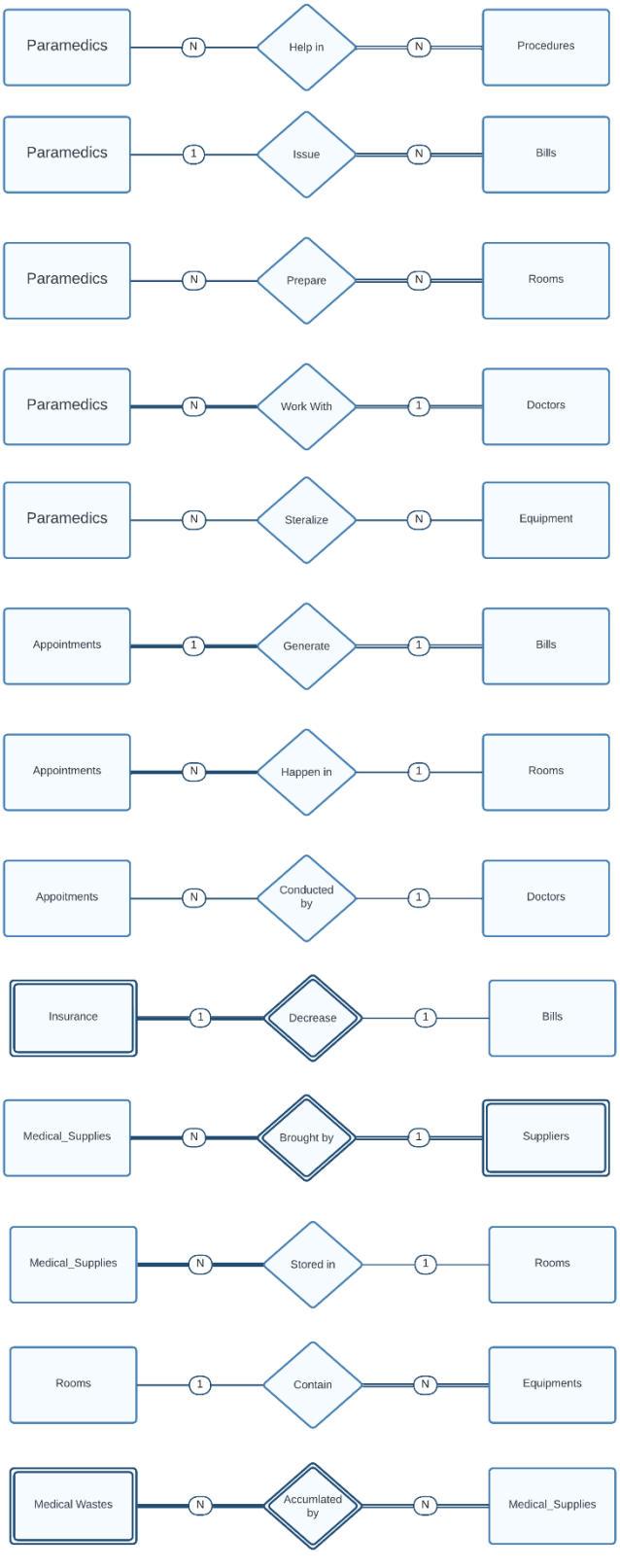


Fig3. **relationships** [3]

1.4 Physical copy of ERD

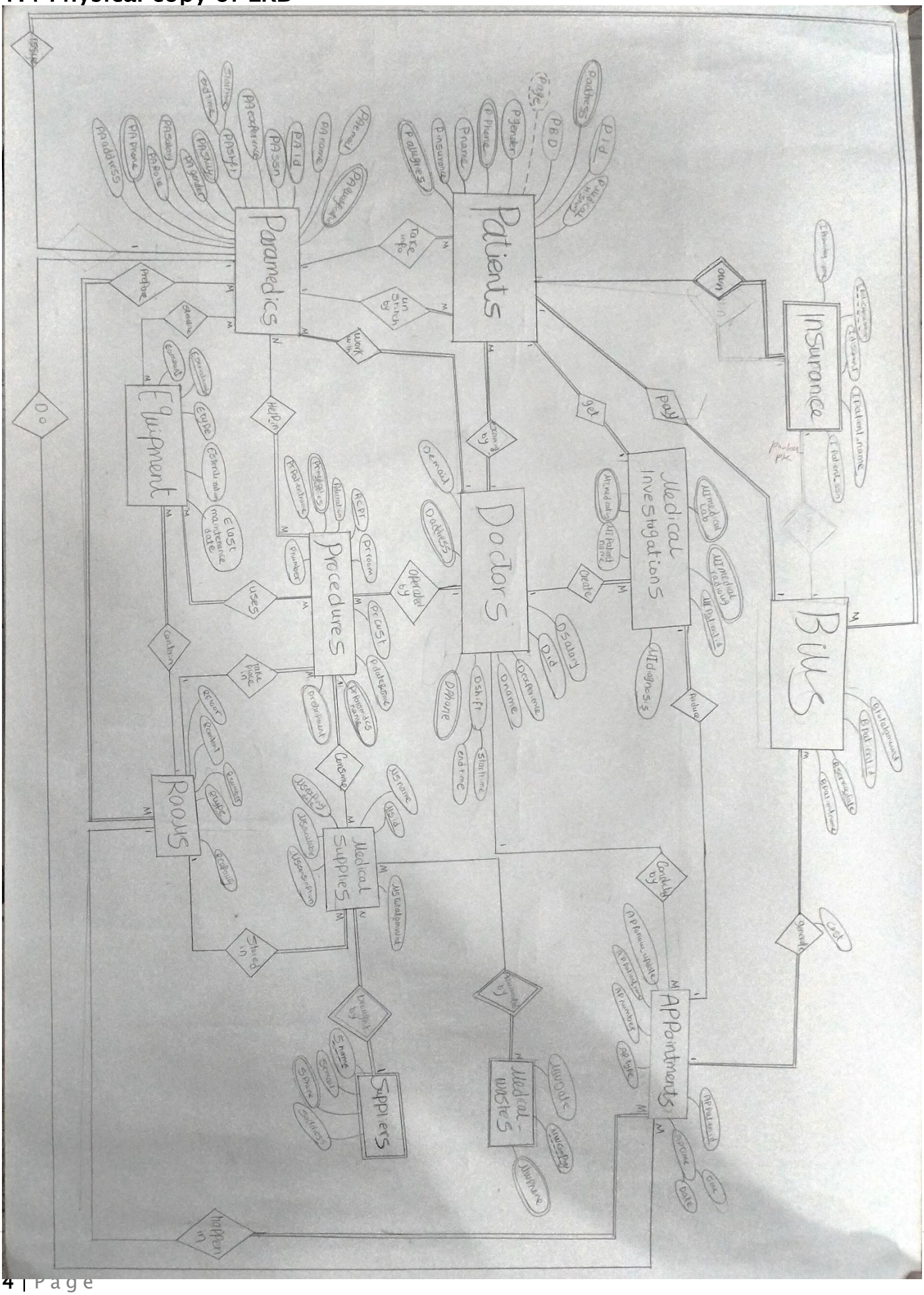


Fig4. Physical copy of ERD

2.1 Summary on what's to come.

6

In this phase we are going to express what we analyzed in the previous phase in what is called a mapping form and apply to it the fundamental rules of database. This phase is called the pre implementation phase as it is the last step we take before we start coding the project on the interpreter, this step is vital as it helps avoid making mistakes and gives us better understanding of the system as a whole.

We provided in the upcoming pages an electronic copy of the relational schema as well as a picture of the physical copy at hand to help more with grasping the essence of the work.

2.2 Electronic copy of the relational schema

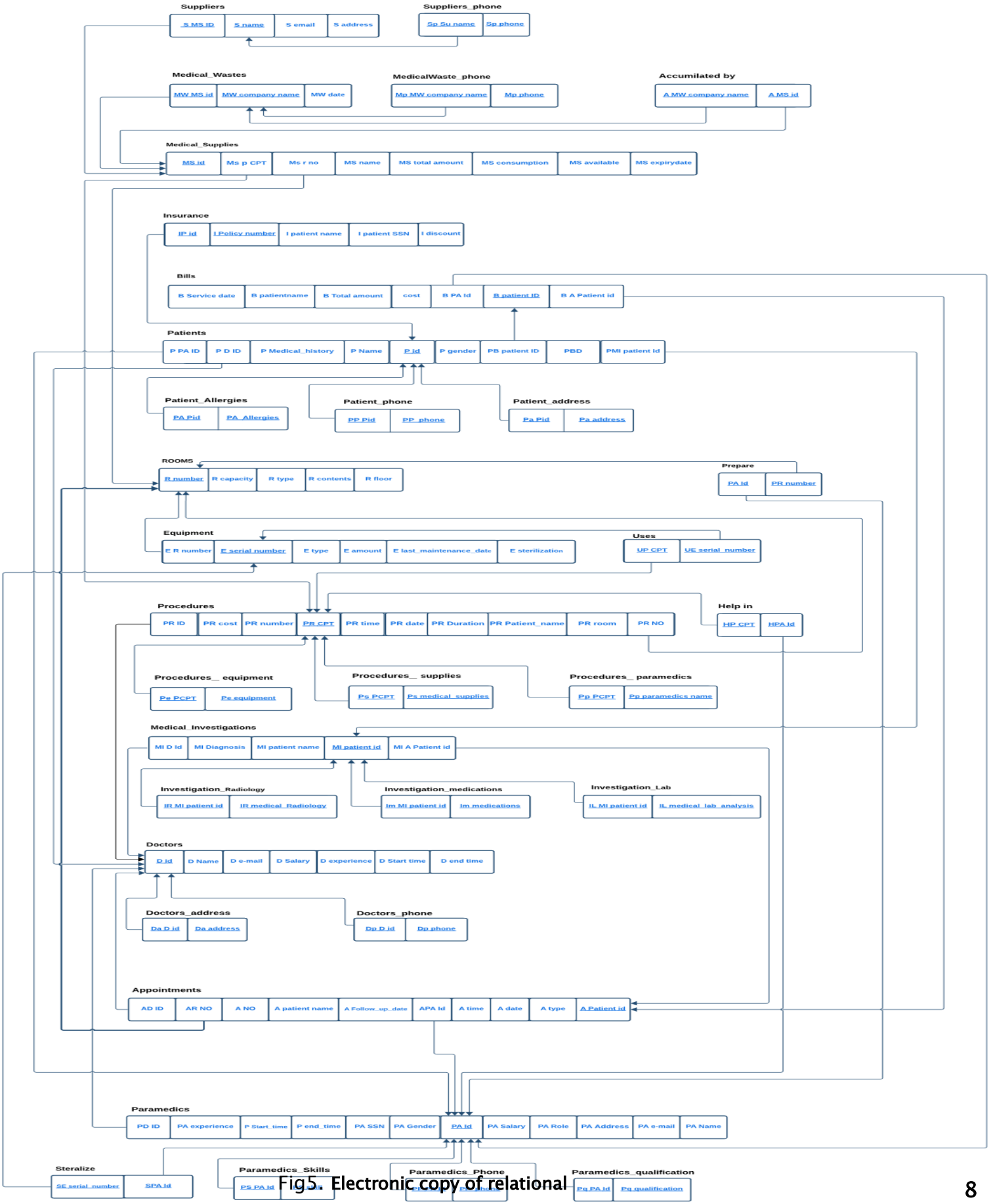


Fig5. Electronic copy of relational

Hint 1- P_age is dreived attributes from PBD

2.3 Physical copy of relational schema

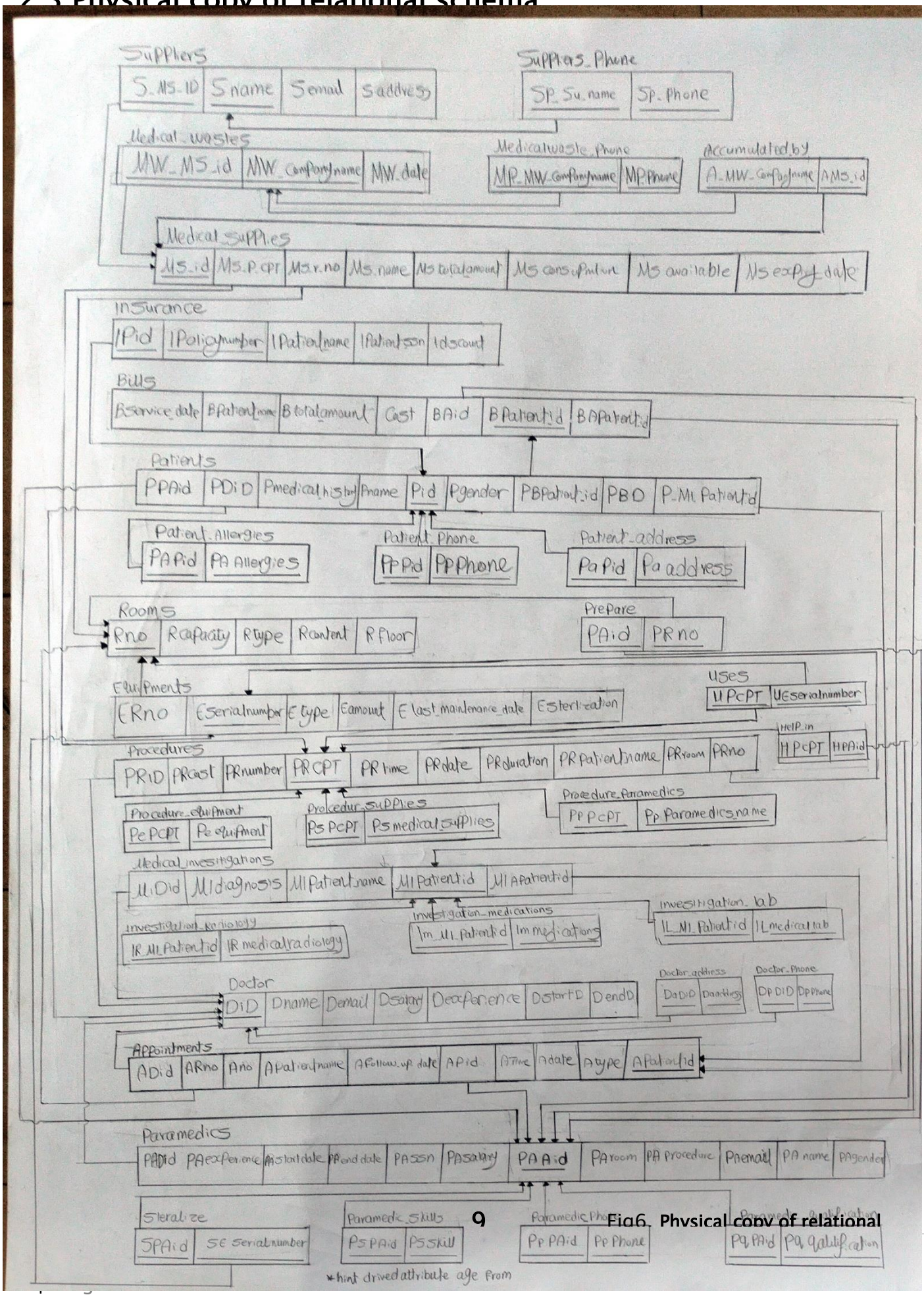


Fig6. Physical copy of relational

3. Table Creation.

```
CREATE TABLE Doctor (
did VARCHAR(30) PRIMARY KEY,
dname VARCHAR(40),
demail VARCHAR(60),
dsalary INT,
dexperience VARCHAR(500),
dstartDate DATE,
dendDate DATE);
```

Results | Messages

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	did	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	dname	varchar	no	40			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
3	demail	varchar	no	60			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
4	dsalary	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
5	dexperience	varchar	no	500			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
6	dstartDate	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
7	dendDate	date	no	3	10	0	yes	(n/a)	(n/a)	NULL

Fig7. **Table Creation of Doctor entity** [7]

```
CREATE TABLE rooms (
rno VARCHAR(30),
rcapacity INT,
rtype VARCHAR(30) NOT NULL,
rcontent VARCHAR(30) NOT NULL,
rfloor VARCHAR(30),
PRIMARY KEY (rno));
```

Results | Messages

	Name	Owner	Type	Created_datetime
1	rooms	dbo	user table	2023-12-24 01:50:32.427

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	rno	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	rcapacity	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
3	rtype	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
4	rcontent	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
5	rfloor	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

Fig8. **Table Creation of Rooms entity** [8]

```
CREATE TABLE paramedics (
paid VARCHAR(30) PRIMARY KEY,
pdid VARCHAR(30),
pstartdate DATE,
ppaendtdate DATE,
pasalary INT,
passn INT,
paexperiance VARCHAR(500),
paroom INT,
paprocedure VARCHAR(40),
paemail VARCHAR(50),
paame VARCHAR(60),
pagender VARCHAR(6),
FOREIGN KEY (pdid) REFERENCES Doctor (did));
```

Results | Messages

	Name	Owner	Type	Created_datetime
1	paramedics	dbo	user table	2023-12-24 01:50:51.640

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	paid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	pdid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
3	pstartdate	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
4	ppaendtdate	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
5	pasalary	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
6	passn	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
7	paexperiance	varchar	no	500			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
8	paroom	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
9	paprocedure	varchar	no	40			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
10	paemail	varchar	no	50			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
11	paame	varchar	no	60			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
12	pagender	varchar	no	6			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

Fig9. **Table Creation of Paramidcs entity** [9]

```
CREATE TABLE appointments (
adid VARCHAR(30),
arno VARCHAR(30),
apid VARCHAR(30),
ano INT UNIQUE,
apatientname VARCHAR(30) NOT NULL,
afollow_up_date DATE,
atime VARCHAR(20),
adate DATE,
atype VARCHAR(30),
apatientid VARCHAR(30),
    PRIMARY KEY (apatientid),
```

Results | Messages

	Name	Owner	Type	Created_datetime
1	appointments	dbo	user table	2023-12-24 02:05:37.450

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	adid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
2	arno	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
3	apid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
4	ano	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
5	apatientname	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
6	afollow_up_date	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
7	atime	varchar	no	20			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
8	adate	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
9	atype	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
10	apatientid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig10. **Table Creation of appointments entity** [10]

```
FOREIGN KEY (adid) REFERENCES doctor (did),
FOREIGN KEY (arno) REFERENCES rooms (rno),
FOREIGN KEY (apid) REFERENCES paramedics (paid));
```

```
CREATE TABLE Medical_Investigations (
mipatientid VARCHAR(30) PRIMARY KEY,
MI_D_Id VARCHAR(30),
MI_Diagnosis VARCHAR(300),
MI_patient_name VARCHAR(50),
MI_A_Patient_id VARCHAR(30),
FOREIGN KEY (MI_D_Id) REFERENCES doctor (did),
FOREIGN KEY (MI_A_Patient_id) REFERENCES appointments (apatientid));
```

Results Messages

	Name	Owner	Type	Created_datetime
1	Medical_Investigations	dbo	user table	2023-12-24 02:06:01.653

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	mipatientid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	MI_D_Id	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
3	MI_Diagnosis	varchar	no	300			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
4	MI_patient_name	varchar	no	50			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
5	MI_A_Patient_id	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

```
CREATE TABLE bills (
bPatientid VARCHAR(30),
bapatientid VARCHAR(30),
bpatient_name VARCHAR(30) NOT NULL,
bservice_date DATE,
btotal_amount DECIMAL(8, 2),
cost DECIMAL(8, 2),
baaid VARCHAR(30),
PRIMARY KEY (bPatientid),
FOREIGN KEY (baaid) REFERENCES paramedics (paid),
FOREIGN KEY (bPatientid) REFERENCES appointments (aPatientid));
```

Results Messages

	Name	Owner	Type	Created_datetime
1	bills	dbo	user table	2023-12-24 02:13:13.193

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	bPatientid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	bapatientid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
3	bpatient_name	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
4	bservice_date	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
5	btotal_amount	decimal	no	5	8	2	yes	(n/a)	(n/a)	NULL
6	cost	decimal	no	5	8	2	yes	(n/a)	(n/a)	NULL
7	baaid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

Fig12. **Table Creation of bills entity** [12]

```
CREATE TABLE patients (
Pid VARCHAR(30) PRIMARY KEY,
Pmedical_history VARCHAR(100) NOT NULL,
Pname VARCHAR(15) NOT NULL,
Pgender CHAR NOT NULL,
PBD DATE NOT NULL,
pbpatientid VARCHAR(30),
pmipatientid VARCHAR(30),
ppaid VARCHAR(30),
pdid VARCHAR(30),
```

Results Messages

1	patients	dbo	user table	2023-12-24 02:13:34.707

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	Pid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	Pmedical_history	varchar	no	100			no	no	no	SQL_Latin1_General_CP1_CI_AS
3	Pname	varchar	no	15			no	no	no	SQL_Latin1_General_CP1_CI_AS
4	Pgender	char	no	1			no	no	no	SQL_Latin1_General_CP1_CI_AS
5	PBD	date	no	3	10	0	no	(n/a)	(n/a)	NULL
6	pbpatientid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
7	pmipatientid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
8	ppaid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
9	pdid	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

Fig13. **Table Creation of patients entity** [13]

```
FOREIGN KEY (pbpatientid) REFERENCES bills (bpatientid),
FOREIGN KEY (pmipatientid) REFERENCES medical_investigations (mipatientid),
FOREIGN KEY (ppaid) REFERENCES paramedics (paid),
FOREIGN KEY (pdid) REFERENCES doctor(did));
```

```
CREATE TABLE proceduress (
prcpt VARCHAR(30) PRIMARY KEY,
PR_ID VARCHAR(30),
PR_cost FLOAT,
PR_Number INT,
PR_time DATE,
PR_date DATE,
PR_Duration FLOAT,
PR_Patient_name VARCHAR(50),
PR_room INT,
PR_NO VARCHAR(30),
FOREIGN KEY (PR_NO) REFERENCES rooms (rno),
```

Results Messages

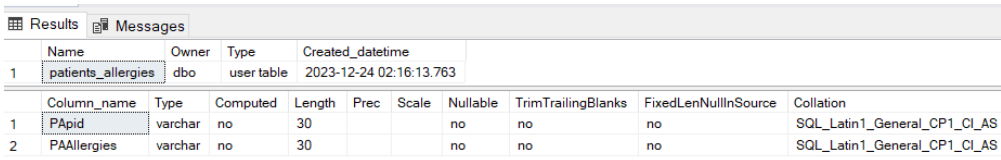
	Name	Owner	Type	Created_datetime
1	proceduress	dbo	user table	2023-12-24 02:16:00.947

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	prcpt	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	PR_ID	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
3	PR_cost	float	no	8	53	NULL	yes	(n/a)	(n/a)	NULL
4	PR_Number	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
5	PR_time	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
6	PR_date	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
7	PR_Duration	float	no	8	53	NULL	yes	(n/a)	(n/a)	NULL
8	PR_Patient_name	varchar	no	50			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
9	PR_room	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
10	PR_NO	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

Fig14. **Table Creation of proceduress entity** [14]

```
FOREIGN KEY (PR_ID) REFERENCES Doctor (did));
```

```
CREATE TABLE patients_allergies (
PApid VARCHAR(30),
PAAllergies VARCHAR(30),
PRIMARY KEY (PApid, PAAllergies),
FOREIGN KEY (PApid) REFERENCES patients (Pid));
```

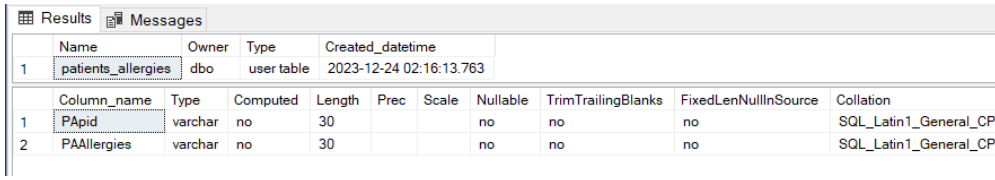


	Name	Owner	Type	Created_datetime
1	patients_allergies	dbo	user table	2023-12-24 02:16:13.763

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	PApid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	PAAllergies	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig15 . Table Creation of patients_allergies entity [15]

```
CREATE TABLE patients_phone (
Pppid VARCHAR(30),
Ppphone VARCHAR(30),
PRIMARY KEY (Pppid, Ppphone),
FOREIGN KEY (Pppid) REFERENCES patients (Pid));
```

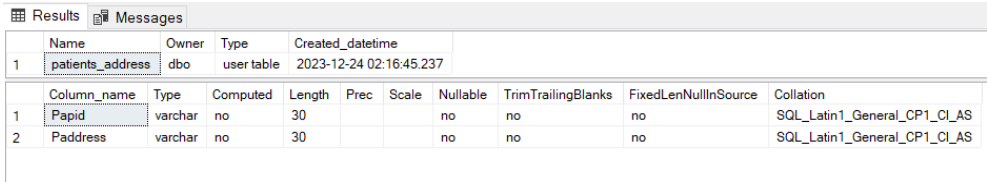


	Name	Owner	Type	Created_datetime
1	patients_allergies	dbo	user table	2023-12-24 02:16:13.763

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	PApid	varchar	no	30			no	no	no	SQL_Latin1_General_CP
2	PAAllergies	varchar	no	30			no	no	no	SQL_Latin1_General_CP

Fig16. Table Creation of patients_phone [16]

```
CREATE TABLE patients_address (
Papid VARCHAR(30),
Paddress VARCHAR(30),
PRIMARY KEY (Papid, Paddress),
FOREIGN KEY (Papid) REFERENCES patients (Pid));
```

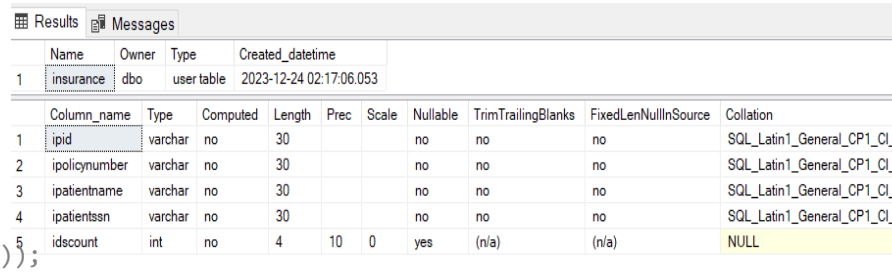


	Name	Owner	Type	Created_datetime
1	patients_address	dbo	user table	2023-12-24 02:16:45.237

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	Papid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	Paddress	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig17. Table Creation of patients_address entity [17]

```
CREATE TABLE insurance (
ipid VARCHAR(30),
ipolicynumber VARCHAR(30),
ipatientname VARCHAR(30) NOT NULL,
ipatientssn VARCHAR(30) NOT NULL UNIQUE,
idscount INT,
PRIMARY KEY (ipid, ipolicynumber),
FOREIGN KEY (ipid) REFERENCES patients (Pid));
```

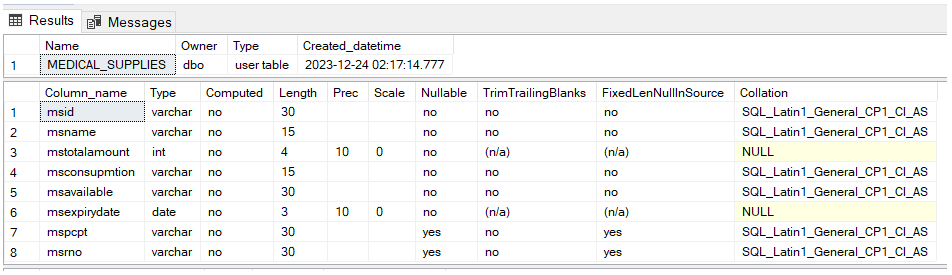


	Name	Owner	Type	Created_datetime
1	insurance	dbo	user table	2023-12-24 02:17:06.053

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	ipid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI
2	ipolicynumber	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI
3	ipatientname	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI
4	ipatientssn	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI
5	idscount	int	no	4	10	0	yes	(n/a)	(n/a)	NULL

Fig18. Table Creation of insurance entity [18]

```
CREATE TABLE MEDICAL_SUPPLIES (
msid VARCHAR(30) PRIMARY KEY,
msname VARCHAR(15) NOT NULL,
mstotalamount INT NOT NULL,
msconsupmtion VARCHAR(15) NOT NULL,
msavailable VARCHAR(30) NOT NULL,
msexpirydate DATE NOT NULL,
mspcpt VARCHAR(30),
msrno VARCHAR(30),
FOREIGN KEY (mspcpt) REFERENCES proceduress (prcpt),
```



	Name	Owner	Type	Created_datetime
1	MEDICAL_SUPPLIES	dbo	user table	2023-12-24 02:17:14.777

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	msid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	msname	varchar	no	15			no	no	no	SQL_Latin1_General_CP1_CI_AS
3	mstotalamount	int	no	4	10	0	no	(n/a)	(n/a)	NULL
4	msconsupmtion	varchar	no	15			no	no	no	SQL_Latin1_General_CP1_CI_AS
5	msavailable	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
6	msexpirydate	date	no	3	10	0	no	(n/a)	(n/a)	NULL
7	mspcpt	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS
8	msrno	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_AS

Fig19. Table Creation of MEDICAL_SUPPLIES entity [19]

```
FOREIGN KEY (msrno) REFERENCES rooms (rno));
```

```
CREATE TABLE medical_wastes (
mwcompanyname VARCHAR(30),
mw_date DATE,
mw_ms_id VARCHAR(30),
```

Results Messages

	Name	Owner	Type	Created_datetime
1	medical_wastes	dbo	user table	2023-12-24 02:17:21.657

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	mwcompanyname	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_A
2	mw_date	date	no	3	10	0	yes	(n/a)	(n/a)	NULL
3	mw_ms_id	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_A

```
PRIMARY KEY ( mwcompanyname , mw_ms_id ),
```

Fig20. **Table Creation of medical_wastes entity** [20]

```
FOREIGN KEY (mw_ms_id) REFERENCES Medical_Supplies (msid));
```

```
CREATE TABLE medicalwaste_phone(

mp_mwcompanyname VARCHAR(30),
mp_phone VARCHAR(30),
```

Results Messages

	Name	Owner	Type	Created_datetime
1	medicalwaste_phone	dbo	user table	2023-12-24 02:17:28.550

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	mp_mwcompanyname	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	mp_phone	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

```
PRIMARY KEY (mp_mwcompanyname, mp_phone),
```

Fig21. **Table Creation of medicalwaste_phone entity** [21]

```
FOREIGN KEY (mp_mwcompanyname,mp_phone) REFERENCES medical_wastes (mwcompanyname, mw_ms_id));
```

```
CREATE TABLE accumulated_by (
a_mwcampanyname VARCHAR(30),
ams_id VARCHAR(30),
```

Results Messages

	Name	Owner	Type	Created_datetime
1	accumulated_by	dbo	user table	2023-12-24 02:19:25.550

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	a_mwcampanyname	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	ams_id	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig22. **Table Creation of accumulated_by entity** [22]

```
PRIMARY KEY (a_mwcampanyname, ams_id),
FOREIGN KEY (a_mwcampanyname,ams_id) REFERENCES medical_wastes (mwcompanyname, mw_ms_id),);
```

```
CREATE TABLE prepare (
paid VARCHAR(30),
prno VARCHAR(30),
PRIMARY KEY (paid, prno),
```

Results Messages

	Name	Owner	Type	Created_datetime
1	prepare	dbo	user table	2023-12-24 02:19:39.137

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	paid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	prno	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig23. **Table Creation of prepare entity** [23]

```
FOREIGN KEY (paid) REFERENCES paramedics (paid),
FOREIGN KEY (prno) REFERENCES rooms (rno));
```

```
CREATE TABLE Doctor_Address (
dadid VARCHAR(30),
daaddress VARCHAR(30),
PRIMARY KEY (dadid, daaddress),
```

Results Messages

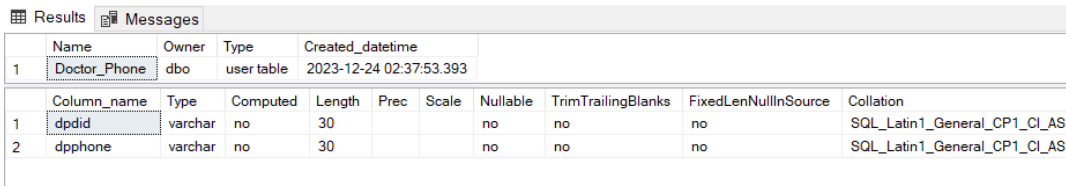
	Name	Owner	Type	Created_datetime
1	Doctor_Address	dbo	user table	2023-12-24 02:19:47.257

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	dadid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	daaddress	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig24. **Table Creation of Doctor_Address entity** [24]

```
FOREIGN KEY (dadid) REFERENCES Doctor (did));
```

```
CREATE TABLE Doctor_Phone (
dpdid VARCHAR(30),
dpphone VARCHAR(30),
PRIMARY KEY (dpdid, dpphone),
FOREIGN KEY (dpdid) REFERENCES Doctor (did));
```

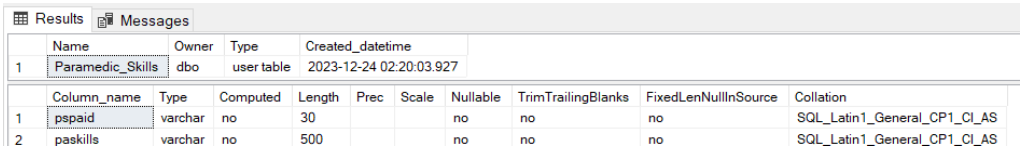


	Name	Owner	Type	Created_datetime
1	Doctor_Phone	dbo	user table	2023-12-24 02:37:53.393

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	dpdid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	dpphone	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig25. **Table Creation of Doctor_Phone entity** [25]

```
CREATE TABLE Paramedic_Skills (
pspaid VARCHAR(30),
paskills VARCHAR(500) NOT NULL,
PRIMARY KEY (paskills, pspaid),
FOREIGN KEY (pspaid) REFERENCES paramedics (paid));
```

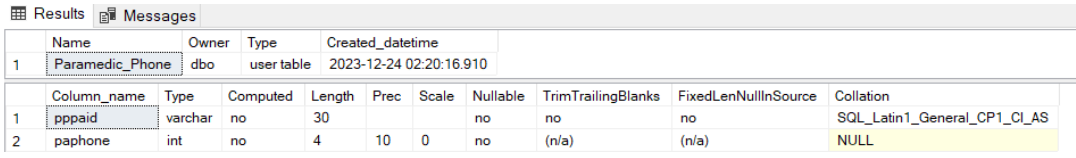


	Name	Owner	Type	Created_datetime
1	Paramedic_Skills	dbo	user table	2023-12-24 02:20:03.927

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	pspaid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	paskills	varchar	no	500			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig26. **Table Creation of Paramedic_Skills entity** [26]

```
CREATE TABLE Paramedic_Phone (
pppaid VARCHAR(30),
paphone INT NOT NULL,
PRIMARY KEY (pppaid, paphone),
FOREIGN KEY (pppaid) REFERENCES paramedics (paid));
```

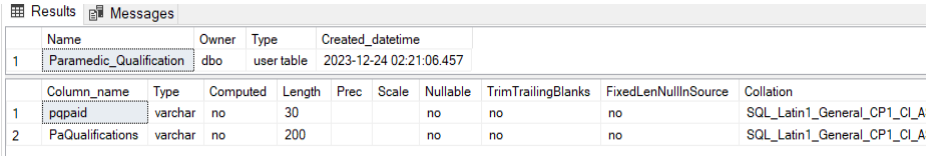


	Name	Owner	Type	Created_datetime
1	Paramedic_Phone	dbo	user table	2023-12-24 02:20:16.910

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	pppaid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	paphone	int	no	4	10	0	no	(n/a)	(n/a)	NULL

Fig27. **Table Creation of Paramedic_Phone entity** [27]

```
CREATE TABLE Paramedic_Qualification (
pqpaid VARCHAR(30),
PaQualifications VARCHAR(200) NOT NULL,
PRIMARY KEY (PaQualifications, pqpaid),
FOREIGN KEY (pqpaid) REFERENCES paramedics (paid));
```

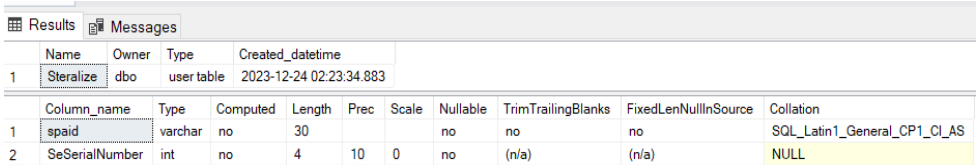


	Name	Owner	Type	Created_datetime
1	Paramedic_Qualification	dbo	user table	2023-12-24 02:21:06.457

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	pqpaid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_A
2	PaQualifications	varchar	no	200			no	no	no	SQL_Latin1_General_CP1_CI_A

Fig28. **Table Creation of Paramedic_Qualification entity** [28]

```
CREATE TABLE Steralize (
spaid VARCHAR(30),
SeSerialNumber INT NOT NULL,
PRIMARY KEY (spaid, SeSerialNumber),
FOREIGN KEY (spaid) REFERENCES paramedics (paid));
```

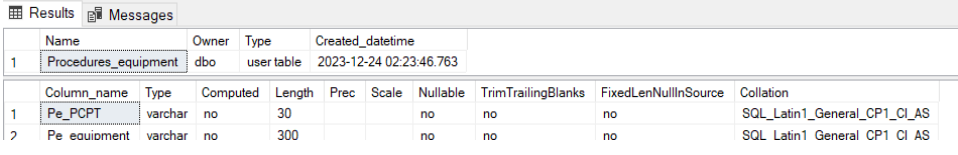


	Name	Owner	Type	Created_datetime
1	Steralize	dbo	user table	2023-12-24 02:23:34.883

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	spaid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	SeSerialNumber	int	no	4	10	0	no	(n/a)	(n/a)	NULL

Fig29. **Table Creation of Steralize entity** [29]

```
CREATE TABLE Procedures_equipment (
Pe_PCPT VARCHAR(30),
Pe_equipment VARCHAR(300),
PRIMARY KEY (Pe_PCPT, Pe_equipment),
FOREIGN KEY (Pe_PCPT) REFERENCES proceduress (prcpt));
```



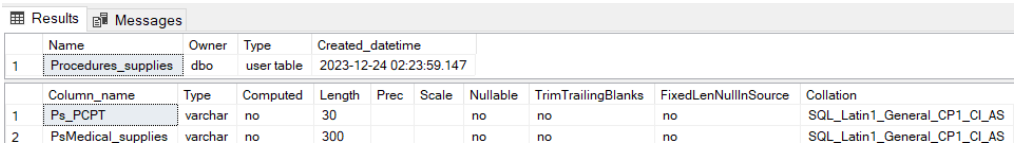
	Name	Owner	Type	Created_datetime
1	Procedures_equipment	dbo	user table	2023-12-24 02:23:46.763

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	Pe_PCPT	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	Pe_equipment	varchar	no	300			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig30. **Table Creation of Procedures_equipment entity** [30]

```
CREATE TABLE Procedures_supplies (

Ps_PCPT VARCHAR(30),
PsMedical_supplies VARCHAR(300),
```



	Name	Owner	Type	Created_datetime
1	Procedures_supplies	dbo	user table	2023-12-24 02:23:59.147

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	Ps_PCPT	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	PsMedical_supplies	varchar	no	300			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig31. **Table Creation of Procedures_supplies entity** [31]

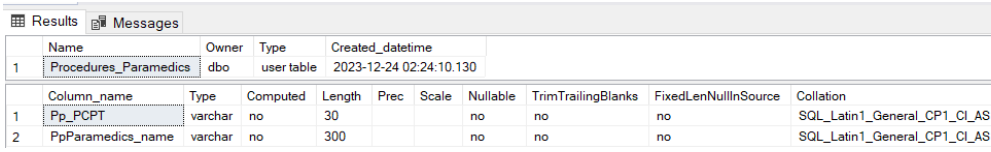
```
PRIMARY KEY (Ps_PCPT, PsMedical_supplies),
FOREIGN KEY (Ps_PCPT) REFERENCES proceduress (prcpt));
```

```
CREATE TABLE Procedures_Paramedics (
Pp_PCPT VARCHAR(30),

PpParamedics_name VARCHAR(300),

PRIMARY KEY (Pp_PCPT, PpParamedics_name),

FOREIGN KEY (Pp_PCPT) REFERENCES proceduress (prcpt));
```



	Name	Owner	Type	Created_datetime
1	Procedures_Paramedics	dbo	user table	2023-12-24 02:24:10.130

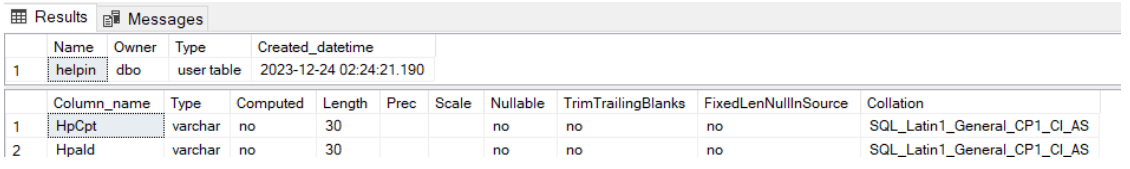
	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	Pp_PCPT	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	PpParamedics_name	varchar	no	300			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig32. **Table Creation of Procedures_Paramedics entity** [32]

```
CREATE TABLE helpin (
HpCpt VARCHAR(30),
HpaId VARCHAR(30),

PRIMARY KEY (HpaId, HpCpt),
 FOREIGN KEY (HpCpt) REFERENCES proceduress (prcpt),

FOREIGN KEY (HpaId) REFERENCES paramedics (paid));
```

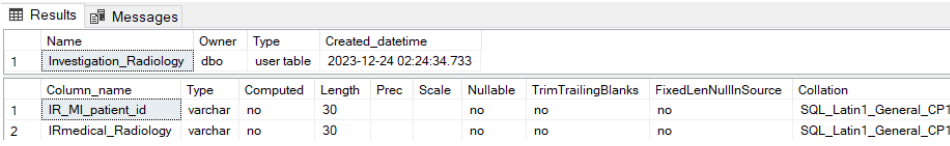


	Name	Owner	Type	Created_datetime
1	helpin	dbo	user table	2023-12-24 02:24:21.190

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	HpCpt	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	Hpald	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig33. **Table Creation of** `helpin` [33]

```
CREATE TABLE Investigation_Radiology (
IR_MI_patient_id VARCHAR(30),
IRmedical_Radiology VARCHAR(30),
```



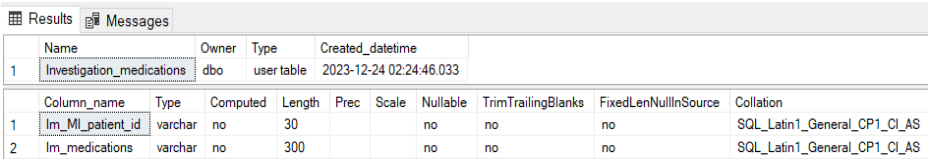
	Name	Owner	Type	Created_datetime
1	Investigation_Radiology	dbo	user table	2023-12-24 02:24:34.733

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	IR_MI_patient_id	varchar	no	30			no	no	no	SQL_Latin1_General_CP1
2	IRmedical_Radiology	varchar	no	30			no	no	no	SQL_Latin1_General_CP1

Fig34. **Table Creation of Investigation_Radiology entity** [34]

```
PRIMARY KEY (IRmedical_Radiology, IR_MI_patient_id),
FOREIGN KEY (IR_MI_patient_id) REFERENCES Medical_Investigations (mipatientid));
```

```
CREATE TABLE Investigation_medications (
Im_MI_patient_id VARCHAR(30),
Im_medications VARCHAR(300),
```



	Name	Owner	Type	Created_datetime
1	Investigation_medications	dbo	user table	2023-12-24 02:24:46.033

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	Im_MI_patient_id	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	Im_medications	varchar	no	300			no	no	no	SQL_Latin1_General_CP1_CI_AS

```
        PRIMARY KEY (Im_medications, Im_MI_patient_id),
FOREIGN KEY (Im_MI_patient_id) REFERENCES Medical_Investigations (mipatientid));
```

Fig35. **Table Creation of Investigation_medications entity** [35]

```
CREATE TABLE Investigation_Lab (
IL_MI_patient_id VARCHAR(30),
```

```
IL_medical_lab_analysis VARCHAR(300),
PRIMARY KEY (IL_medical_lab_analysis, IL_MI_patient_id),
FOREIGN KEY (IL_MI_patient_id) REFERENCES Medical_Investigations (mipatientid));
```

Results Messages

	Name	Owner	Type	Created_datetime
1	Investigation_Lab	dbo	user table	2023-12-24 02:24:55.817

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	IL_MI_patient_id	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	IL_medical_lab_analysis	varchar	no	300			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig37. **Table Creation of Investigation_Lab entity** [37]

```
CREATE TABLE suppliers (
sname VARCHAR(30),
smsid VARCHAR(30),

sphone INT,

semail VARCHAR(50),

saddress VARCHAR(15),
```

Results Messages

	Name	Owner	Type	Created_datetime
1	suppliers	dbo	user table	2023-12-24 02:25:07.763

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	sname	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_A
2	smsid	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_A
3	sphone	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
4	semail	varchar	no	50			no	no	no	SQL_Latin1_General_CP1_CI_A
5	saddress	varchar	no	15			yes	no	yes	SQL_Latin1_General_CP1_CI_A

Fig38. **Table Creation of suppliers entity** [38]

```
PRIMARY KEY (sname, smsid),
FOREIGN KEY (smsid) REFERENCES MEDICAL_SUPPLIES (msid));
```

```
CREATE TABLE equipment (
etype VARCHAR(50) NOT NULL,
eamount INT,
eserialnumber VARCHAR(30)

PRIMARY KEY,
elastmasintennancedate VARCHAR(15),
esteriliztaion VARCHAR(15),
    erno VARCHAR(30),

FOREIGN KEY (erno) REFERENCES rooms (rno));
```

Results Messages

	Name	Owner	Type	Created_datetime
1	equipment	dbo	user table	2023-12-24 02:27:57.510

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	etype	varchar	no	50			no	no	no	SQL_Latin1_General_CP1_CI_A
2	eamount	int	no	4	10	0	yes	(n/a)	(n/a)	NULL
3	eserialnumber	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_A
4	elastmasintennancedate	varchar	no	15			yes	no	yes	SQL_Latin1_General_CP1_CI_A
5	esteriliztaion	varchar	no	15			yes	no	yes	SQL_Latin1_General_CP1_CI_A
6	erno	varchar	no	30			yes	no	yes	SQL_Latin1_General_CP1_CI_A

Fig39. **Table Creation of equipment entity** [39]

```
CREATE TABLE uses (
uprcpt VARCHAR(30),
ueserialno VARCHAR(30),

    PRIMARY KEY (uprcpt, ueserialno),

FOREIGN KEY (uprcpt) REFERENCES proceduress (prcpt),
FOREIGN KEY (ueserialno) REFERENCES equip
ment (eserialnumber));
```

Results Messages

	Name	Owner	Type	Created_datetime
1	uses	dbo	user table	2023-12-24 02:28:09.527

	Column_name	Type	Computed	Length	Prec	Scale	Nullable	TrimTrailingBlanks	FixedLenNullInSource	Collation
1	uprcpt	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS
2	ueserialno	varchar	no	30			no	no	no	SQL_Latin1_General_CP1_CI_AS

Fig40. **Table Creation of uses entity** [40]