

PHASE 2: SUBMISSION CHECKLIST/SIGNOFF SHEET

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Deliverables:

- Description of the organization
- ER diagram with min/max specifications
- [Revised] Constraints not in ER diagram
- [Revised] Relational Schema with Referential Integrity
- Queries with brief description
- DML + DDL + SQL statements
- Completed PostgreSQL Implementation (Attached Team SQL script)

Group Assessment

- Group Status Report

We have each reviewed the contents of this deliverable.

Phase Leader	Arub Sumayli	_____
Phase Recorder	Rihab Junagadhwala	_____
Phase Checker	Pragya Kansal	_____
Technical Advisor	Kayla Salerno	_____

1. Introduction

This is a database that stores patient information for the pediatrics department of a hospital. The purpose of our database is to keep track of important information about patients such as their illness/condition, insurance provider, date of last appointment, date of birth, and other relevant information. We are also storing the entities that the patients have a relationship with, such as their parents/guardians, primary physician, and nurse, along with their corresponding attributes.

The contact person that provided insight into the structure of a typical pediatrics department was a pediatrician we know who works at NorthShore Evanston Hospital. They summarized the general organization of the department, important members that are usually found in the database, and the type of data that is typically stored. We adapted our database to reflect the key parts of a pediatrics database in relation to patient information.

2. Requirements Description

The Hospital Pediatrics Patient Database (HOSPPEDSPATIENTS) stores relevant information regarding a hospital's desire to track patient information in the Pediatrics department. The HOSPPEDSPATIENTS Database stores information regarding patients, parents/guardians of the patients, doctors, and nurses. Below are more specifics regarding the entities, their attributes, and the relationships between the entities.

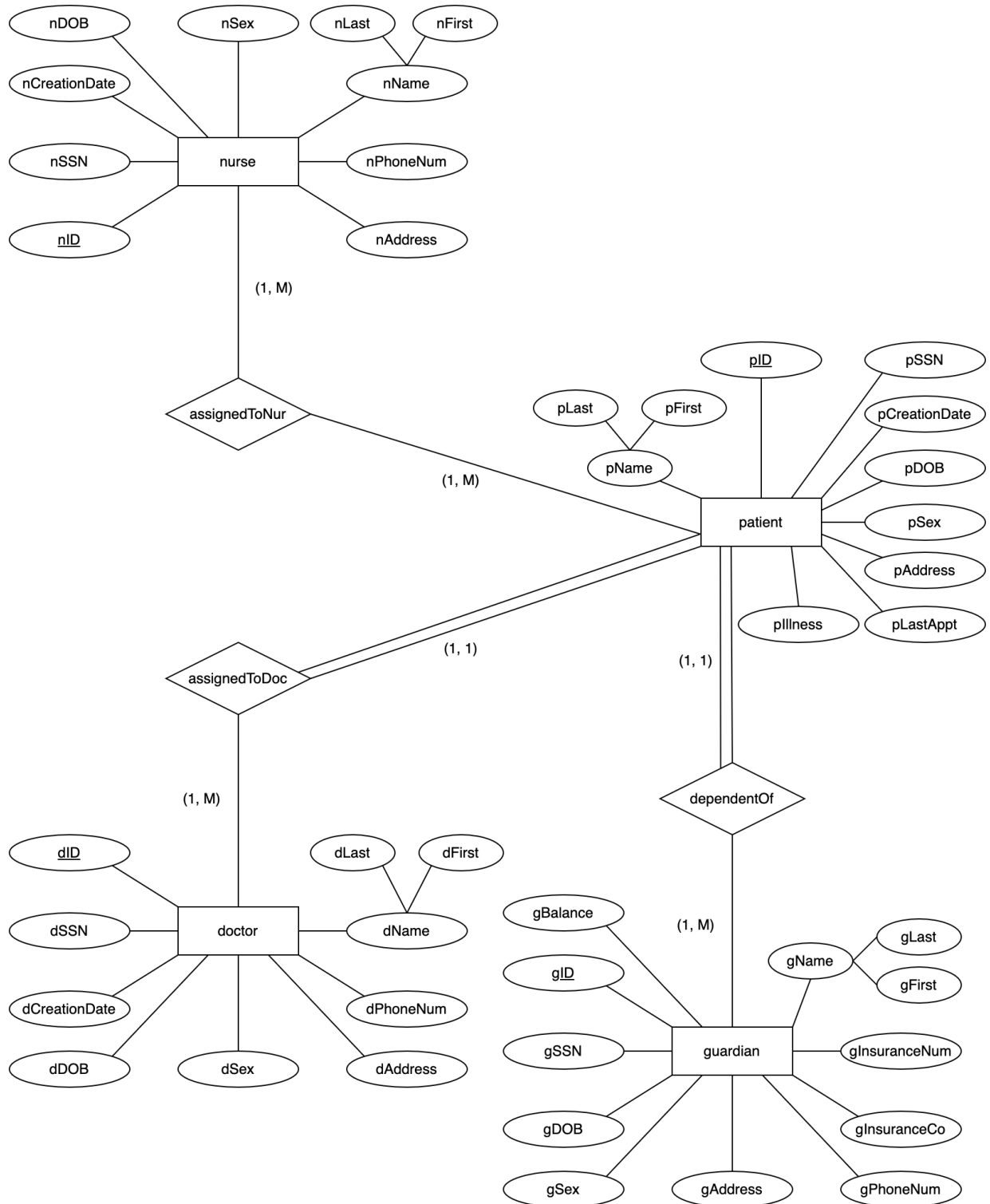
- Patients are children who have been admitted because they have a condition to be treated. Patient information includes the patient's full name, social security number, patient ID, creation date, date of birth, sex, address, insurance, insurance company, doctor, nurse(s), last appointment date, and condition/illness. Patients can only have one doctor and one guardian, but they can have multiple nurses.
- The guardian is whom the patient legally and financially depends on. Guardian information includes their full name, social security number, date of birth, sex, address, insurance company, and insurance number. A patient can only have one parent/guardian on record. Guardians can have more than one dependent/patient.
- Doctors are the individuals who treat the patients. Their information includes doctor ID, full name, social security number, date of birth, creation date, sex,

address, phone number and list of patients. Doctors can have multiple patients, but patients can only have one doctor.

- Nurses are the individuals who assist the doctor with overseeing the patient's health. Their information includes their full name, nurse ID, date of birth, creation date, social security number, sex, address, phone number and list of patients. Nurses can have multiple patients and patients can have multiple nurses.
- The database keeps a running record of all patients in the hospital's Pediatrics department, as well as the doctor and nurses assigned to each patient. Patients are connected to their guardians so they share certain information with them, such as the existence of insurance.

3. ER Diagram

The figure below shows the [ER diagram](#) of the Hospital Pediatrics Patient Database (HOSPEDSPATIENTS).



4. ER Diagram Uncaptured Constraints

The following is a list of constraints that are not captured by the ER diagram of HOSPEDSPATIENTS.

- Patients must be under the insurance of their parent/guardian(s).
- The phone number format must be XXXXXXXXXX, or Area Code Phone Number.
- For biological sex, the three options are male, female, and intersex.
- The social security number must be written as: XXXXXXXXX.
- For the amount the guardian needs to pay, or gBalance, the currency must be in US dollars.
- CreationDate and DOB Format: MM/DD/YYYY.
- The address format must be: Street, City, State Zip Code.
- Patients, guardians, doctors, and nurses must have residency in Illinois.
- Patients must be born no earlier than 2004.

5. Relational Schema

This section provides the relational schema with referential integrity and the relational table details.

5.1 Relational Schema with Referential Integrity

patient (pID, pLast, pFirst, pSSN, pCreationDate, pDOB, pSex, pAddress, pLastAppt, pIllness)

foreign key (pInsuranceCo) references guardian (gInsuranceCo)

foreign key (pInsuranceNum) references guardian (gInsuranceNum)

guardian (gID, gLast, gFirst, gSSN, gDOB, gSex, gAddress, gPhoneNum, gInsuranceCo, gInsuranceNum)

doctor (dID, dLast, dFirst, dSSN, dCreationDate, dDOB, dSex, dAddress, dPhoneNum)

nurse (nID, nLast, nFirst, nSSN, nCreationDate, nDOB, nSex, nAddress, nPhoneNum)

assignedToNur(pID, nID)

foreign key (pID) references patient (pID)

foreign key (nID) references nurse (nID)

assignedToDoc(pID, dID)

foreign key (pID) references patient (pID)

foreign key (dID) references doctor (dID)

dependentOf(pID, gID)

foreign key (pID) references patient (pID)

foreign key (gID) references guardian (gID)

foreign key (gInsuranceCo, gInsuranceNum) references guardian (gInsuranceCo, gInsuranceNum)

5.2 Relational Table Details

The relational schema given in Section 5.1 was mapped into the following tables in the HOSPPEDSPATIENTS database. Primary keys have been underlined. Tables that have multiple attributes underlined represent composite keys.

Table Name	Attribute	Description
patient	<u>pID</u>	unique patient ID
	pLast	last name of patient
	pFirst	first name of patient
	pSSN	social security number of patient
	pCreationDate	date that patient was admitted into hospital and added to database
	pDOB	birthdate of patient
	pSex	biological sex of patient
	pAddress	home address of patient
	pLastAppt	date of patient's last appointment
	pIllness	description of patient condition
guardian	<u>gID</u>	unique guardian ID
	gLast	last name of guardian
	gFirst	first name of guardian

	gSSN	social security number of guardian
	gDOB	birthdate of guardian
	gSex	biological sex of guardian
	gAddress	home address of guardian
	gPhoneNum	phone number of guardian
	gInsuranceCo	name of insurance company
	gInsuranceNum	insurance card number
	gBalance	payment amount remaining
doctor	<u>dID</u>	unique doctor ID
	dLast	last name of doctor
	dFirst	first name of doctor
	dSSN	social security number of doctor
	dCreationDate	date that doctor started working at hospital and added to database
	dDOB	birthdate of doctor
	dSex	biological sex of doctor
	dAddress	address of doctor
	dPhoneNum	phone number of doctor
	dPatientList	list of patients for doctor
nurse	<u>nID</u>	unique nurse id
	nLast	last name of nurse
	nFirst	first name of doctor
	nSSN	social security number of nurse
	nCreationDate	date that nurse started working at hospital and added to database
	nDOB	date of birth of nurse

	nSex	biological sex of nurse
	nAddress	address of nurse
	nPhoneNum	phone number of doctor
	nPatientList	list of patients for nurse
assignedToNur	<u>pID</u>	unique patient id (foreign key), references pID from patient
	<u>nID</u>	unique nurse id (foreign key), references nID from nurse
assignedToDoc	<u>pID</u>	unique patient id (foreign key), references pID from patient
	dID	unique doctor id (foreign key), references dID
dependentOf	<u>pID</u>	unique patient id (foreign key), references pID from patient
	gID	unique guardian id (foreign key), references gID from guardian
	gInsuranceCo	name of insurance company (foreign key), references gInsuranceCo from guardian
	gInsuranceNum	insurance card number (foreign key), references gInsuranceNum from guardian

6. Queries

The following table summarizes the queries in the HOSPEDSPATIENTS Database.

Query Name	Description	Output	Relations Accessed
patientsWithPneumonia (Pragya)	Find the patient ID, first name, last name, illness, date of birth, and address of the patients that live with their guardian, have an illness of 'Pneumonia', and were born no earlier than January 1, 2005. Count the	<ul style="list-style-type: none"> • pID • pFirst • pLast • pIllness • pDOB • pAddress • gAddress 	<ul style="list-style-type: none"> • guardian • patient • dependent Of • nurse • assignedToNur

	number of nurses for each of these patients. Print the address of each patient's guardian as well. Sort the outputs in ascending alphabetical order of the patient's first name.	<ul style="list-style-type: none"> • numberOfNurses 	
sortGuardianBalance (Arub)	For each guardian, print gLast, gBalance, gPhoneNum, and pID. Sort the output by the amount of money in each gBalance in descending order. Only print gBalance exceeding \$10000.	<ul style="list-style-type: none"> • gFirst • gLast • gBalance • gPhoneNum • pID 	<ul style="list-style-type: none"> • guardian • patient
numDoctorFemalePatients (Rihab)	Find the doctors that have patients who are female. List the doctor's first and last names, and the number of female patients each of them have. Sort by the number of female patients in ascending order.	<ul style="list-style-type: none"> • dFirst • dLast • numFemalePatients 	<ul style="list-style-type: none"> • doctor • patient • assignedToDoc
numNurseFewPatients (Kayla)	Print the last and first name, ID, sex, and the number of patients a nurse has for nurses with few patients (3 or fewer). Group by nurse ID. Sort the output by the number of patients and last name (ascending order).	<ul style="list-style-type: none"> • nLast • nFirst • nID • nSex • numPatients • listOfPatients 	<ul style="list-style-type: none"> • nurse • assignedToNurse • patient

7. DDL + DML + SQL (Including output screenshots)

The following is an SQL definition of the tables for the HOSPPEDSPATIENTS Database.

```
/* HOSPPEDSPATIENTS Database
patient (pID, pLast, pFirst, pSSN, pCreationDate, pDOB, pSex, pAddress, pLastAppt, pIllness)
guardian (gID, gLast, gFirst, gSSN, gDOB, gSex, gAddress, gPhoneNum, gInsuranceCo,
gInsuranceNum, gBalance)
doctor (dID, dLast, dFirst, dSSN, dCreationDate, dDOB, dSex, dPhoneNum, dAddress)
nurse (nID, nLast, nFirst, nSSN, nCreationDate, nDOB, nSex, nAddress, nPhoneNum)
assignedToNur (pID, nID)
assignedToDoc (pID, dID)
dependentOf (pID, gID, gInsuranceCo, gInsuranceNum)
*/
```

```
DROP TABLE IF EXISTS patient CASCADE;
DROP TABLE IF EXISTS guardian CASCADE;
DROP TABLE IF EXISTS doctor CASCADE;
DROP TABLE IF EXISTS nurse CASCADE;
DROP TABLE IF EXISTS assignedToNur CASCADE;
DROP TABLE IF EXISTS assignedToDoc CASCADE;
DROP TABLE IF EXISTS dependentOf CASCADE;
```

```
CREATE TABLE patient
(pID varchar (10) PRIMARY KEY,
pLast varchar (30) NOT NULL,
pFirst varchar (30) NOT NULL,
pSSN bigint NOT NULL,
pCreationDate varchar (10) NOT NULL,
pDOB varchar (10) NOT NULL,
pSex varchar (10) NOT NULL,
pAddress varchar (100) NOT NULL,
pLastAppt varchar (10) NOT NULL,
pIllness varchar (250) NOT NULL
);
```

```
CREATE TABLE guardian
(gID varchar (10) PRIMARY KEY,
gLast varchar (30) NOT NULL,
gFirst varchar (30) NOT NULL,
gSSN bigint NOT NULL,
gDOB varchar (8) NOT NULL,
gSex varchar (10) NOT NULL,
gAddress varchar (100) NOT NULL,
```

```
gPhoneNum bigint NOT NULL,  
gInsuranceCo varchar (50),  
gInsuranceNum varchar (10),  
gBalance float NOT NULL,  
UNIQUE (gInsuranceCo, gInsuranceNum)  
);
```

```
CREATE TABLE doctor  
(dID varchar (10) PRIMARY KEY,  
dLast varchar (30) NOT NULL,  
dFirst varchar (30) NOT NULL,  
dSSN bigint NOT NULL,  
dCreationDate varchar (10) NOT NULL,  
dDOB varchar (10) NOT NULL,  
dSex varchar (10) NOT NULL,  
dPhoneNum bigint NOT NULL,  
dAddress varchar (100) NOT NULL  
);
```

```
CREATE TABLE nurse  
(nID varchar (10) PRIMARY KEY,  
nLast varchar (30) NOT NULL,  
nFirst varchar (30) NOT NULL,  
nSSN bigint NOT NULL,  
nCreationDate varchar (10) NOT NULL,  
nDOB varchar (10) NOT NULL,  
nSex varchar (10) NOT NULL,  
nAddress varchar (100) NOT NULL,  
nPhoneNum bigint NOT NULL  
);
```

```
CREATE TABLE assignedToNur  
(pID varchar (10) NOT NULL,  
nID varchar (10) NOT NULL,  
PRIMARY KEY (pID, nID),  
FOREIGN KEY (pID)  
REFERENCES patient(pID),  
FOREIGN KEY (nID)  
REFERENCES nurse(nID)  
);
```

```
CREATE TABLE assignedToDoc
```

```
(pID varchar (10) PRIMARY KEY,
dID varchar (10) NOT NULL,
FOREIGN KEY (pID)
REFERENCES patient(pID),
FOREIGN KEY (dID)
REFERENCES doctor(dID)
);
```

```
CREATE TABLE dependentOf
(pID varchar (10) PRIMARY KEY,
gID varchar (10) NOT NULL,
gInsuranceCo varchar (50) NOT NULL,
gInsuranceNum varchar (20) NOT NULL,
FOREIGN KEY (pID)
REFERENCES patient(pID),
FOREIGN KEY (gID)
REFERENCES guardian(gID),
FOREIGN KEY (gInsuranceCo, gInsuranceNum)
REFERENCES guardian(gInsuranceCo, gInsuranceNum)
);
```

```
INSERT INTO patient (pID, pLast, pFirst, pSSN, pCreationDate, pDOB, pSex, pAddress,
pLastAppt, pIllness)
VALUES
('5478828149', 'Krystle', 'Carree', 880668772, '05/19/2011', '03/01/2007', 'Female', '123 Elm
Street, Chicago, IL 60601', '9/15/2012', 'Pneumonia'),
('2353169554', 'Wilhelmina', 'Muhammad', 289612554, '07/01/2022', '07/12/2018', 'Male', '456
Maple Avenue, Springfield, IL 62701', '7/28/2022', 'Pneumonia'),
('2867034035', 'Vania', 'Marielle', 810946847, '10/26/2019', '03/24/2009', 'Female', '04
Grasskamp Trail, Chicago, IL 60626', '6/7/2020', 'Bronchitis'),
('1608930009', 'Elsie', 'Sayres', 402543798, '10/07/2020', '03/31/2017', 'Male', '101 Pine Lane,
Rockford, IL 61101', '9/22/2021', 'Meningitis'),
('1135007012', 'Elsworth', 'Emmeline', 779483273, '01/19/2017', '04/06/2012', 'Female', '234
Birch Road, Aurora, IL 60501', '7/31/2019', 'Strep throat'),
('7487444848', 'Kamilah', 'Annabell', 190434601, '11/16/2015', '05/14/2008', 'Female', '567 Cedar
Court, Joliet, IL 60401', '10/08/2017', 'Strep throat'),
('9376633717', 'Redsull', 'Sybyl', 458872004, '04/04/2018', '04/08/2016', 'Female', '890 Redwood
Place, Naperville, IL 60540', '03/01/2020', 'Ear infection'),
('8343324366', 'Blanko', 'Tamera', 472840421, '03/31/2015', '09/04/2014', 'Female', '111 Willow
Lane, Champaign, IL 61820', '09/24/2016', 'Strep throat'),
('3339297274', 'Ronnie', 'Arabelle', 436986178, '10/22/2008', '10/30/2005', 'Female', '30018
Grayhawk Plaza, Hoffman Estates, IL 60010', '03/08/2010', 'Meningitis'),
('1309936374', 'Ortes', 'Link', 113725928, '04/20/2020', '10/13/2004', 'Intersex', '333 Tulip Road,
Bloomington, IL 61701', '11/16/2022', 'Bronchitis'),
```

('0943273102', 'Enrique', 'Erhart', 258626663, '06/13/2023', '04/11/2023', 'Male', '87634 Londonderry Crossing, Naperville, IL 60540', '7/4/2023', 'Pneumonia'),
('6040373601', 'Dyson', 'Fowler', 337648422, '06/26/2018', '10/09/2008', 'Male', '555 Daisy Avenue, Elgin, IL 60120', '11/16/2021', 'Pneumonia'),
('7336237347', 'Burk', 'Rodd', 596023469, '07/20/2016', '01/03/2016', 'Male', '666 Poplar Road, Waukegan, IL 60085', '02/04/2022', 'Strep throat'),
('5737027589', 'Wheeler', 'Gwyn', 377163080, '03/31/2018', '03/18/2005', 'Female', '3 Crowley Junction, Decatur, IL 62521', '8/26/2023', 'Ear infection'),
('9926175422', 'Godden', 'Reg', 123097541, '03/27/2007', '06/06/2004', 'Male', '888 Iris Court, Schaumburg, IL 60173', '02/08/2019', 'Bronchitis'),
('5548366882', 'MacDearmont', 'Ricoriki', 712332074, '07/22/2021', '07/17/2006', 'Male', '7539 Cordelia Place, Arlington Heights, IL 60004', '6/2/2022', 'Meningitis'),
('8652992541', 'Idel', 'Chrisse', 406111109, '04/26/2016', '12/04/2011', 'Male', '121 Magnolia Drive, Bolingbrook, IL 60440', '08/17/2019', 'Strep throat'),
('2439361151', 'Cadany', 'Guenevere', 784677467, '06/10/2018', '07/27/2014', 'Intersex', '232 Jasmine Lane, Arlington Heights, IL 60004', '06/17/2022', 'Ear infection'),
('9575986083', 'Franchyonok', 'Vitoria', 225831527, '05/31/2011', '01/27/2005', 'Female', '40 Arizona Center, Elgin, IL 60120', '04/24/2019', 'Ear infection'),
('0934341656', 'Owlnr', 'Margarita', 309447807, '08/04/2014', '08/07/2009', 'Female', '004 Transport Place, Hoffman Estates, IL 60010', '02/28/2018', 'Bronchitis'),
('0184960495', 'Maulkin', 'Ham', 335142985, '10/29/2014', '08/20/2007', 'Male', '565 Orchid Place, Skokie, IL 60076', '05/18/2021', 'Pneumonia'),
('0219096953', 'Krystle', 'Bruce', 573503356, '07/24/2021', '12/25/2011', 'Male', '123 Elm Street, Chicago, IL 60601', '03/19/2022', 'Pneumonia'),
('5348686204', 'Wilhelmina', 'Ody', 574132898, '05/06/2018', '06/11/2005', 'Male', '456 Maple Avenue, Springfield, IL 62701', '04/18/2023', 'Ear infection'),
('7092577144', 'Vania', 'Freddy', 739287636, '01/11/2019', '07/06/2011', 'Male', '24740 Northland Parkway, Bloomington, IL 61701', '04/19/2020', 'Strep throat'),
('0987039997', 'Elsie', 'Tildie', 365855409, '03/31/2006', '09/08/2005', 'Intersex', '101 Pine Lane, Rockford, IL 61101', '07/20/2017', 'Bronchitis'),
('9060291182', 'Elsworth', 'Wayne', 100086560, '06/05/2021', '05/25/2013', 'Male', '234 Birch Road, Aurora, IL 60501', '07/07/2023', 'Ear infection'),
('1345635524', 'Kamilah', 'Donnie', 616587978, '02/19/2020', '01/10/2004', 'Female', '08 Bonner Street, Palatine, IL 60067', '05/19/2020', 'Meningitis'),
('5305876737', 'Hendrik', 'Catriona', 737210291, '04/07/2011', '02/12/2005', 'Female', '890 Redwood Place, Naperville, IL 60540', '07/07/2016', 'Ear infection'),
('9244135949', 'Spear', 'Shaylyn', 287744348, '09/15/2014', '08/18/2005', 'Female', '111 Willow Lane, Champaign, IL 61820', '06/27/2018', 'Pneumonia'),
('4874155030', 'Ronnie', 'Leyla', 658135785, '09/23/2009', '10/12/2006', 'Female', '89 Sunbrook Parkway, Des Plaines, IL 60016', '02/11/2021', 'Strep throat'),
('5246007413', 'Masurel', 'Rosaleen', 647529843, '01/25/2023', '12/30/2009', 'Female', '333 Tulip Road, Bloomington, IL 61701', '4/13/2023', 'Strep throat'),
('0500203431', 'Leak', 'Rriocard', 768438277, '04/25/2014', '09/06/2009', 'Male', '555 Daisy Avenue, Elgin, IL 60120', '06/13/2017', 'Pneumonia'),
('8594054211', 'Burk', 'Jerrylee', 498800658, '07/01/2016', '05/19/2006', 'Female', '666 Poplar Road, Waukegan, IL 60085', '09/04/2017', 'Strep throat'),

('6128926959', 'Wheeler', 'Janith', 628175937, '10/12/2017', '05/25/2009', 'Female', '784 Ramsey Street, Palatine, IL 60067', '11/11/2018', 'Ear infection'),
 ('0132055368', 'Harries', 'Bettine', 888404986, '01/27/2011', '11/14/2005', 'Female', '565 Orchid Place, Skokie, IL 60076', '08/20/2015', 'Ear infection'),
 ('0889460949', 'Krystle', 'Malvina', 705867340, '09/09/2021', '01/05/2021', 'Female', '123 Elm Street, Chicago, IL 60601', '06/13/2022', 'Strep throat'),
 ('0877589380', 'Wilhelmina', 'Eugene', 878383145, '10/14/2009', '10/02/2006', 'Intersex', '1307 Bellgrove Center, Chicago, IL 60660', '02/28/2016', 'Bronchitis'),
 ('3272014055', 'Kindleysides', 'Levin', 354339935, '03/30/2013', '08/31/2012', 'Male', '111 Willow Lane, Champaign, IL 61820', '12/01/2022', 'Bronchitis'),
 ('3250381608', 'Ferrarese', 'Nolana', 202867000, '02/16/2017', '11/08/2008', 'Female', '890 Redwood Place, Naperville, IL 60540', '08/11/2020', 'Meningitis'),
 ('3322578003', 'Elsworth', 'Corinna', 217236599, '12/26/2021', '10/20/2018', 'Female', '234 Birch Road, Aurora, IL 60501', '03/21/2022', 'Pneumonia'),
 ('1993446753', 'Dockrill', 'Reinhard', 265976489, '04/08/2012', '08/20/2005', 'Male', '404 Doe Crossing Way, Des Plaines, IL 60016', '02/10/2015', 'Pneumonia'),
 ('5171542287', 'Bogays', 'Hanson', 440034099, '07/24/2017', '06/15/2004', 'Male', '004 Transport Place, Hoffman Estates, IL 60010', '02/28/2019', 'Ear infection'),
 ('3023402353', 'Ethersey', 'Regan', 484346757, '07/18/2009', '03/02/2006', 'Male', '444 Lily Lane, Evanston, IL 60201', '09/22/2021', 'Strep throat'),
 ('7140976783', 'Fancutt', 'Gerry', 463183198, '12/16/2012', '07/29/2011', 'Female', '121 Magnolia Drive, Bolingbrook, IL 60440', '08/01/2020', 'Bronchitis'),
 ('4647884775', 'Snare', 'Janela', 124304087, '01/03/2016', '02/16/2010', 'Female', '33528 Tony Pass, Champaign, IL 61820', '11/22/2022', 'Pneumonia'),
 ('7662072894', 'Aberkirder', 'Ardisj', 219675186, '04/27/2022', '06/27/2005', 'Intersex', '234 Birch Road, Aurora, IL 60501', '06/05/2023', 'Ear infection'),
 ('9055660728', 'Howgego', 'Francklyn', 748293355, '06/27/2020', '10/30/2010', 'Male', '890 Redwood Place, Naperville, IL 60540', '01/28/2023', 'Meningitis'),
 ('8113174095', 'Boggers', 'Vassili', 417647968, '05/15/2020', '07/02/2014', 'Male', '666 Poplar Road, Waukegan, IL 60085', '01/24/2022', 'Ear infection'),
 ('0792077342', 'Vania', 'Jere', 500224791, '01/21/2023', '06/03/2011', 'Female', '789 Oak Drive, Peoria, IL 61601', '11/20/2021', 'Strep throat'),
 ('9517512813', 'Wheeler', 'Jessica', 551855961, '06/09/2020', '04/13/2004', 'Female', '777 Sunflower Drive, Oak Park, IL 60301', '11/17/2022', 'Pneumonia');

INSERT INTO guardian (gID, gLast, gFirst, gSSN, gDOB, gSex, gAddress, gPhoneNum, gInsuranceCo, gInsuranceNum, gBalance)

VALUES

('8520489390', 'Krystle', 'Newlyn', 750817686, 'Female', '06/14/1957', '123 Elm Street, Chicago, IL 60601', 3034941575, 'Hettinger Group', '6891339960', 51666.84),
 ('7251298740', 'Wilhelmina', 'Standerling', 594051136, 'Female', '01/03/1977', '456 Maple Avenue, Springfield, IL 62701', 4618171573, 'Sanford and Sons', '6857558183', 84567.45),
 ('6445290620', 'Vania', 'Nicolson', 769412787, 'Female', '10/30/1980', '789 Oak Drive, Peoria, IL 61601', 3419702825, 'Macejkovic Inc', '8545278918', 88203.48),

('7483012498', 'Elsie', 'Blacklock', 319616619, 'Female', '12/10/1979', '101 Pine Lane, Rockford, IL 61101', 6479535323, 'King Group', '2921673665', 68576.94),
 ('3285231780', 'Elsworth', 'Pennrington', 300410599, 'Male', '11/22/1956', '234 Birch Road, Aurora, IL 60501', 6513595804, 'West-Rolfson', '1526907097', 28278.86),
 ('2443645274', 'Kamilah', 'Ransom', '415449144', 'Female', '03/25/1985', '567 Cedar Court, Joliet, IL 60401', 4917588501, 'Stokes LLC', '8584982', 47155.55),
 ('2294796667', 'Willyt', 'Davidek', 499751144, 'Intersex', '03/11/1986', '890 Redwood Place, Naperville, IL 60540', 9996224458, 'Sanford and Sons', '5286573428', 65377.63),
 ('6088659734', 'Ruy', 'Bourdon', 317204627, 'Male', '11/30/1964', '111 Willow Lane, Champaign, IL 61820', 8902001586, 'Sanford and Sons', '1777314038', 69475.15),
 ('9387481093', 'Ronnie', 'Cham', 298629672, 'Male', '06/26/1947', '222 Rose Street, Decatur, IL 62521', 3093119202, 'Russel and Sons', '6728086994', 89725.46),
 ('5948730290', 'Coop', 'Oakland', 155279567, 'Male', '01/10/2003', '333 Tulip Road, Bloomington, IL 61701', 4898204438, 'King Group', '6631240743', 97270.26),
 ('3780291827', 'Bartel', 'Zannotti', 775640521, 'Male', '05/25/1936', '444 Lily Lane, Evanston, IL 60201', 1392838015, 'Hettinger Group', '9117554748', 86619.33),
 ('2299841340', 'Katharina', 'Dumini', 662248871, 'Female', '05/23/1933', '555 Daisy Avenue, Elgin, IL 60120', 5059969409, 'King Group', '6585379241', 2570.31),
 ('3008909523', 'Burk', 'Gorhardt', 115802264, 'Male', '04/18/1970', '666 Poplar Road, Waukegan, IL 60085', 5699243872, 'Gislason and Sons', '1708170677', 89896.33),
 ('1742238351', 'Wheeler', 'McGaraghan', 595118381, 'Male', '07/09/1996', '777 Sunflower Drive, Oak Park, IL 60301', 6376444647, 'Oberbrunner LLC', '402850793', 36708.67),
 ('4832078828', 'Frasco', 'Deverose', 204854710, 'Male', '01/03/1957', '888 Iris Court, Schaumburg, IL 60173', 8435265180, 'Kihn, Rippin and Littel', '74057065', 65317.42),
 ('3898341984', 'Grove', 'Dooney', 171953348, 'Male', '11/12/1994', '999 Violet Street, Des Plaines, IL 60016', 8509568818, 'Feeney-Bergstrom', '645316121', 81570.24),
 ('3487639351', 'Barr', 'MacShirie', 419030415, 'Male', '09/24/1938', '121 Magnolia Drive, Bolingbrook, IL 60440', 4131251880, 'Stoltenberg, Cormier and Wolff', '1547266287', 35918.82),
 ('1025530853', 'Cedric', 'Corsor', 652313710, 'Male', '05/02/1975', '232 Jasmine Lane, Arlington Heights, IL 60004', 7353921316, 'Turner LLC', '8179605159', 297.79),
 ('9030078855', 'Eberto', 'Schechter', 136141503, 'Male', '02/01/1973', '343 Camellia Road, Palatine, IL 60067', 8776366732, 'Sanford and Sons', '8667908061', 77961.15),
 ('3542638560', 'Gaile', 'Phillipp', 120714670, 'Male', '1/20/1967', '004 Transport Place, Hoffman Estates, IL 60010', 8492361075, 'Hettinger Group', '5729813460', 64823.13),
 ('3759410618', 'Keelia', 'Thomassin', 868415509, 'Female', '10/06/1943', '565 Orchid Place, Skokie, IL 60076', 4981610726, 'King Group', '5163206265', 89931.37);

INSERT INTO doctor (dID, dLast, dFirst, dSSN, dCreationDate, dDOB, dSex, dPhoneNum, dAddress)

VALUES

('2433573130', 'Hannie', 'Brewster', 737633372, '01/31/1998', '04/29/1955', 'Female', 3487007747, '5085 Brickson Park Point, Chicago, IL 60601'),
 ('4772535918', 'Malanie', 'Sherlock', 428365612, '04/21/2003', '08/13/1952', 'Female', 1605413705, '60 Portage Parkway, Springfield, IL 62701'),

('1550505211', 'Jeff', 'Woodhead', 375677629, '01/03/2022', '09/06/1965', 'Male', 9626948996, '3
 Graedel Road, Peoria, IL 61601'),
 ('1228121907', 'Dante', 'Wrassell', 490999123, '04/05/2014', '08/23/1989', 'Intersex', 5977596025,
 '5 Mosinee Way, Champaign, IL 61801'),
 ('3790986631', 'Guendolen', 'Farmery', 327519163, '10/13/1999', '05/11/1954', 'Female',
 2848412538, '9753 South Crossing, Rockford, IL 61101'),
 ('2059515203', 'Milena', 'Kornacki', 641570324, '11/07/2005', '04/21/1956', 'Female',
 8437345485, '295 Merchant Pass, Naperville, IL 60540'),
 ('9800443347', 'Nerti', 'Dorot', 592858526, '10/30/1990', '11/01/1964', 'Female', 1479412914,
 '626 Esch Crossing, Aurora, IL 60502'),
 ('0933876661', 'Allissa', 'Gunson', 788826446, '01/29/2008', '09/11/1980', 'Female', 3922342686,
 '19 Fair Oaks Way, Elgin, IL 60120'),
 ('9513444856', 'Fancy', 'Mepsted', 379337869, '03/02/2019', '09/12/1994', 'Female', 3119915649,
 '07529 Oneill Circle, Joliet, IL 60432'),
 ('8044068996', 'Bord', 'Nys', 656026935, '08/08/2023', '09/19/1983', 'Male', 2566012680, '41013
 Elmside Trail, Peoria, IL 61601'),
 ('7789964631', 'Prince', 'Coon', 781348881, '06/03/1993', '09/09/1959', 'Male', 2647699034,
 '3964 Alpine Junction, Springfield, IL 62701'),
 ('8399355941', 'Roseanna', 'Kropach', 440115178, '04/04/1996', '11/15/1962', 'Female',
 8992722118, '5577 Mallory Terrace, Chicago, IL 60601'),
 ('0350061610', 'Audi', 'Caldroni', 610452092, '10/06/2009', '10/18/1951', 'Female', 1494287933,
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 ('4775744720', 'Tamarah', 'Baybutt', 416983572, '05/05/1997', '03/02/1967', 'Female',
 1043354810, '7176 Utah Alley, Naperville, IL 60540'),
 ('0292475659', 'Ernst', 'Twigger', 170012972, '10/08/2014', '08/07/1963', 'Male', 1583276754,
 '04116 Cardinal Way, Aurora, IL 60502'),
 ('5012485009', 'Geordie', 'Bushell', 613020115, '08/04/2018', '02/25/1958', 'Male', 7023269059,
 '82464 Rockefeller Point, Elgin, IL 60120'),
 ('2680882318', 'Darryl', 'Meere', 644948705, '06/21/2007', '04/24/1961', 'Male', 1913324005, '6
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 ('5255868604', 'Westley', 'Gasticke', 131381367, '03/10/1981', '04/18/1950', 'Male', 2612489856,
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 ('0279554478', 'Rafe', 'Molan', 690722624, '08/22/2004', '08/06/1956', 'Male', 5376546617, '8
 Claremont Trail, Springfield, IL 62701'),
 ('3567879413', 'Decca', 'Duval', 316904838, '02/14/2021', '02/14/1976', 'Male', 4011307663, '6
 Mallory Street, Chicago, IL 60601');

INSERT INTO nurse (nID, nLast, nFirst, nSSN, nCreationDate, nDOB, nSex, nAddress,
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('8141746251', 'Cawston', 'Crichton', 133386325, '07/14/1993', '09/07/1941', 'Male', '789 Birch
 Lane, Elgin, IL 60120', 8607907498),
 ('0154784443', 'Van de Vlies', 'Neddie', 117903132, '05/02/2016', '08/26/1952', 'Female', '456
 Cedar Drive, Schaumburg, IL 60173', 3883137131),

('7312243304', 'Shillington', 'Annice', 607028352, '07/21/2003', '05/10/1976', 'Female', '222 Rosewood Avenue, Champaign, IL 61820', 3511379758),
('8809364287', 'Fellis', 'Ward', 402910166, '06/20/2002', '07/27/1968', 'Male', '777 Maple Road, Joliet, IL 60401', 9866889824),
('2152501608', 'Maidment', 'Heddie', 184403209, '02/01/1993', '12/01/1963', 'Female', '888 Orchid Court, Springfield, IL 62701', 8901433799),
('8014003225', 'Giotini', 'Moise', 613896647, '10/10/2006', '12/06/1977', 'Male', '555 Poplar Street, Rockford, IL 61101', 6336354655),
('1637468687', 'Laing', 'Jamie', 287486779, '04/09/2008', '09/24/1972', 'Female', '101 Magnolia Lane, Evanston, IL 60201', 2389388225),
('1971290432', 'Micklewicz', 'Papageno', 677258976, '02/15/2014', '05/11/1985', 'Male', '444 Sunflower Drive, Naperville, IL 60540', 6283356820),
('1572910909', 'Matejovsky', 'Michelle', 779511883, '02/01/2013', '09/08/1980', 'Female', '123 Daisy Place, Waukegan, IL 60085', 8818731789),
('6918254634', 'Sabatini', 'Mareah', 459986433, '02/28/1993', '11/16/1958', 'Female', '999 Tulip Road, Aurora, IL 60501', 2835743718),
('7521039246', 'Cass', 'Anica', 540275983, '10/26/2002', '06/20/1958', 'Female', '333 Willow Lane, Bolingbrook, IL 60440', 6073558207),
('8699777841', 'Bradburn', 'Babette', 607427769, '03/12/1998', '11/14/1950', 'Female', '678 Iris Avenue, Oak Park, IL 60301', 9603362188),
('8224044106', 'Prinnett', 'Emalee', 721429396, '09/20/2008', '04/04/1948', 'Female', '334 Camellia Court, Palatine, IL 60067', 4158232955),
('4211715445', 'Mc Elory', 'Gustave', 824611315, '06/11/2007', '02/10/1978', 'Male', '223 Violet Drive, Skokie, IL 60076', 2021334200),
('9405259113', 'Rignoldes', 'Grayce', 157288048, '07/22/1984', '05/07/1950', 'Female', '1122 Camellia Road, Arlington Heights, IL 60004', 3816987127),
('0500653666', 'Fenelon', 'Beck', 164482298, '02/22/2019', '04/13/1992', 'Male', '33445 Magnolia Avenue, Des Plaines, IL 60016', 1729665919),
('7863847907', 'Hanburry', 'Cliff', 345999938, '03/04/1993', '09/03/1961', 'Male', '7788 Cedar Drive, Decatur, IL 62521', 9505415342),
('4518562909', 'Erickssen', 'Brandy', 381784196, '03/18/1999', '08/24/1969', 'Male', '5566 Oak Road, Bloomington, IL 61701', 4829859653),
('3781706605', 'Linford', 'Ezekiel', 821173956, '11/16/2000', '05/14/1968', 'Male', '4455 Pine Street, Peoria, IL 61601', 4751147507),
('7502613455', 'Jorgesen', 'Monroe', 359300314, '07/24/1988', '04/06/1960', 'Male', '2233 Rose Street, Champaign, IL 61820', 8899113136),
('0437021416', 'Gosden', 'Emmott', 471857430, '12/19/2002', '01/28/1972', 'Male', '11223 Birch Court, Decatur, IL 62521', 4206977820),
('9207937719', 'Shreeves', 'Felicity', 663325733, '03/04/1998', '07/31/1971', 'Female', '9900 Cedar Drive, Rockford, IL 61101', 3411034854),

('2946018539', 'Yerrell', 'Maye', 161494971, '09/02/2015', '11/23/1986', 'Female', '8899 Pine Lane, Aurora, IL 60501', 2467056423),
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 ('7204524675', 'Hunter', 'Yves', 117358724, '05/03/1979', '10/03/1951', 'Male', '6677 Willow Lane, Joliet, IL 60401', 5799336219),
 ('0099317990', 'Mateiko', 'Torr', 897249834, '08/05/1996', '09/13/1961', 'Male', '5566 Daisy Avenue, Naperville, IL 60540', 5946253924),
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 ('4636658116', 'Dodsworth', 'Wainwright', 873563511, '03/10/2015', '02/09/1986', 'Male', '3344 Tulip Place, Springfield, IL 62701', 2682492933),
 ('5120574106', 'Gebbe', 'Vaclav', 493266416, '08/26/2002', '05/26/1945', 'Male', '2233 Maple Drive, Schaumburg, IL 60173', 7868083559),
 ('0899054536', 'Woollaston', 'Tabbie', 159498707, '08/06/1988', '06/30/1959', 'Male', '1122 Rosewood Lane, Champaign, IL 61820', 7591134416);

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('0792077342', '6445290620', 'Macejkovic Inc', '8545278918'),
('9517512813', '1742238351', 'Oberbrunner LLC', '402850793');

Query 1: patientsWithPneumonia (Pragya)

Find the patient ID, first name, last name, illness, date of birth, and address of the patients that live with their guardian, have an illness of 'Pneumonia', and were born no earlier than January 1, 2005. Count the number of nurses for each of these patients. Print the address of each patient's guardian as well. Sort the outputs in ascending alphabetical order of the patient's first name.
(pID, pFirst, pLast, pIllness, pDOB, pAddress, gAddress, numberOfNurses)

```
SELECT P.pID, P.pFirst, P.pLast, P.pIllness, P.pDOB, P.pAddress,
      (SELECT G.gAddress
       FROM guardian G
       WHERE G.gID = (SELECT D.gID
                     FROM dependentOf D
                     WHERE D.pID = P.pID)) AS gAddress,
      (SELECT COUNT(N.nID)
       FROM nurse N
       WHERE N.nID IN (SELECT A.nID
                     FROM assignedToNur A
                     WHERE A.pID = P.pID)) AS numberOfNurses
FROM patient P
WHERE P.pIllness = 'Pneumonia'
      AND DATE(P.pDOB) >= '01/01/2005'
      AND P.pAddress = (SELECT G.gAddress
                       FROM guardian G
                       WHERE G.gID = (SELECT D.gID
                                     FROM dependentOf D
                                     WHERE D.pID = P.pID))

GROUP BY P.pID
ORDER BY P.pFirst ASC;
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Query 1 Results:

<div> <div> <div>≡+</div> <div>📄</div> <div>▼</div> <div>📋</div> <div>▼</div> <div>🗑️</div> <div>🗄️</div> <div>⬇️</div> <div>📈</div> </div> </div>				
	pid [PK] character varying (10)	pfirst character varying (30)	plast character varying (30)	pillness character varying (250)
1	0219096953	Bruce	Krystle	Pneumonia
2	5478828149	Carree	Krystle	Pneumonia
3	3322578003	Corinna	Elsworth	Pneumonia
4	6040373601	Fowler	Dyson	Pneumonia
5	0184960495	Ham	Maulkin	Pneumonia
6	2353169554	Muhammad	Wilhelmina	Pneumonia
7	0500203431	Rriocard	Leak	Pneumonia
8	9244135949	Shaylyn	Spear	Pneumonia






pdob character varying (10)	paddress character varying (100)	gaddress character varying (100)	numberofnurses bigint
12/25/2011	123 Elm Street, Chicago, IL 60601	123 Elm Street, Chicago, IL 60601	2
03/01/2007	123 Elm Street, Chicago, IL 60601	123 Elm Street, Chicago, IL 60601	2
10/20/2018	234 Birch Road, Aurora, IL 60501	234 Birch Road, Aurora, IL 60501	2
10/09/2008	555 Daisy Avenue, Elgin, IL 60120	555 Daisy Avenue, Elgin, IL 60120	2
08/20/2007	565 Orchid Place, Skokie, IL 60076	565 Orchid Place, Skokie, IL 60076	2
07/12/2018	456 Maple Avenue, Springfield, IL 62701	456 Maple Avenue, Springfield, IL 62701	2
09/06/2009	555 Daisy Avenue, Elgin, IL 60120	555 Daisy Avenue, Elgin, IL 60120	3
08/18/2005	111 Willow Lane, Champaign, IL 61820	111 Willow Lane, Champaign, IL 61820	2

Query 2: sortGuardianBalance (Arub)

For each guardian, print gLast, gBalance, gPhoneNum, and pID. Sort the output by the amount of money in each gBalance in descending order. Only print gBalance exceeding \$10000. (gFirst, gLast, gBalance, gPhoneNum, pID)

```
SELECT g.gID, g.gLast SUM(g.gBalance) AS TotalBalance, COUNT(d.pID) AS  
NumberOfDependents  
FROM guardian g, dependentOf d  
WHERE g.gID = d.gID  
GROUP BY g.gID, g.gLast  
ORDER BY g.gLast;
```

Query 2 Results:

	gid [PK] character varying (10) 	glast character varying (30) 	gbalance double precision 	gphonenumber bigint 	dependentids character varying[] 
1	5948730290	Coop	97270.26	4898204438	{1309936374,5246007413}
2	3759410618	Keelia	89931.37	4981610726	{0184960495,0132055368}
3	3008909523	Burk	89896.33	5699243872	{7336237347,8594054211,1993446753,8113174095}
4	9387481093	Ronnie	89725.46	3093119202	{3339297274,4874155030}
5	6445290620	Vania	88203.48	3419702825	{2867034035,7092577144,0792077342}
6	3780291827	Bartel	86619.33	1392838015	{0943273102,3023402353}
7	7251298740	Wilhelmina	84567.45	4618171573	{2353169554,5348686204,0877589380}
8	3898341984	Grove	81570.24	8509568818	{5548366882}
9	9030078855	Eberto	77961.15	8776366732	{9575986083}
10	6088659734	Ruy	69475.15	8902001586	{8343324366,9244135949,3272014055,4647884775}
11	7483012498	Elsie	68576.94	6479535323	{1608930009,0987039997}
12	2294796667	Willyt	65377.63	9996224458	{9376633717,5305876737,3250381608,9055660728}
13	4832078828	Frasco	65317.42	8435265180	{9926175422}
14	3542638560	Gaile	64823.13	8492361075	{0934341656,5171542287}
15	8520489390	Krystle	51666.84	3034941575	{5478828149,0219096953,0889460949}
16	2443645274	Kamilah	47155.55	4917588501	{7487444848,1345635524}
17	1742238351	Wheeler	36708.67	6376444647	{5737027589,6128926959,9517512813}
18	3487639351	Barr	35918.82	4131251880	{8652992541,7140976783}
19	3285231780	Elsworth	28278.86	6513595804	{1135007012,9060291182,3322578003,7662072894}

Query 3: numDoctorFemalePatients (Rihab)

Find the doctors that have patients who are female. List the doctor's first and last names, and the number of female patients each of them have. Sort by the number of female patients in ascending order.

(dFirst, dLast, numFemalePatients)

```
SELECT D.dFirst, D.dLast,
       (SELECT COUNT(*)
        FROM assignedToDoc AD
        WHERE AD.dID = D.dID
        AND AD.pID IN (
            SELECT pID
            FROM patient P
            WHERE P.pSex = 'Female'
        )
       ) AS numFemalePatients
FROM doctor D
WHERE (SELECT COUNT(*)
       FROM assignedToDoc AD
       WHERE AD.dID = D.dID
       AND AD.pID IN (
           SELECT pID
           FROM patient P
           WHERE P.pSex = 'Female'
       )
       ) >= 1
ORDER BY numFemalePatients ASC;
```


Query 3 Results:

	dfirst character varying (30) 🔒	dlast character varying (30) 🔒	numfemalepatients bigint 🔒
1	Kropach	Roseanna	1
2	Dorot	Nerti	1
3	Woodhead	Jeff	1
4	Farmery	Guendolen	1
5	Kornacki	Milena	1
6	Meere	Darryl	1
7	Molan	Rafe	1
8	Twigger	Ernst	2
9	Bushell	Geordie	2
10	Coon	Prince	2
11	Wrassell	Dante	2
12	Gunson	Allissa	2
13	Mepsted	Fancy	2
14	Sherlock	Malanie	2
15	Caldroni	Audi	2
16	Baybutt	Tamarah	2
Total rows: 16 of 16 Query complete 00:00:00.088			







Query 4: numNurseFewPatients (Kayla)

Print the last and first name, ID, sex, and the number of patients a nurse has for nurses with few patients (3 or fewer). Group by nurse ID. Sort the output by the number of patients and last name (ascending order).

(nLast, nFirst, nID, nSex, numPatients, listOfPatients)

```
SELECT N.nLast, N.nFirst, N.nID, N.nSex, A.numPatients,
       (SELECT string_agg(pID, ','))
FROM assignedToNur
WHERE nID = a.nID) as listOfPatients
FROM nurse N,
       (SELECT nID, count(pID) as numPatients
FROM assignedToNur
GROUP BY nID
HAVING count(pID) <= 3) A
WHERE N.nID = A.nID
ORDER BY numPatients, nLast;
```

Query 4 Results:

	nlast character varying (30) 	nfirst character varying (30) 	nid [PK] character varying (10) 	nsex character varying (10) 	numpatients bigint 	listofpatients text 
1	Dodsworth	Wainwright	4636658116	Male	1	2867034035
2	Mateiko	Torr	0099317990	Male	1	0184960495
3	Sabatini	Mareah	6918254634	Female	1	3023402353
4	Bradburn	Babette	8699777841	Female	2	1135007012,9055660728
5	Cass	Anica	7521039246	Female	2	7487444848,3250381608
6	Erickssen	Brandy	4518562909	Male	2	0219096953,0132055368
7	Hunter	Yves	7204524675	Male	2	9060291182,9517512813
8	Maidment	Heddie	2152501608	Female	2	9575986083,0132055368
9	Tuison	Darcy	5964724701	Female	2	8652992541,3272014055
10	Fellis	Ward	8809364287	Male	3	2867034035,8113174095,0792077342
11	Gosden	Emmott	0437021416	Male	3	9376633717,0889460949,3250381608
12	Laing	Jamie	1637468687	Female	3	8343324366,9926175422,0500203431
13	Matejovsky	Michelle	1572910909	Female	3	3322578003,7140976783,4647884775
14	Micklewicz	Papageno	1971290432	Male	3	8652992541,5305876737,8594054211
15	Rignoldes	Grayce	9405259113	Female	3	0943273102,7092577144,0877589380

GROUP STATUS REPORT

GROUP: Rihab, Pragya, Kayla, Arub

PHASE #: 2

Dates & attendance at group meetings in this phase:

Tuesday, October 17	12:00PM - 2:15PM	All group members present.
Wednesday, October 26	4:00PM - 7:00PM	All group members present.

Overview of progress on project:

In this phase of the project, we wrote a DDL/DML script for our HOSPEDSPATIENTS database, which includes the tables 'doctor', 'guardian', 'patient', 'nurse', 'assignedToDoc', 'assignedToNur', and 'dependentOf.' We then each wrote queries that access 2+ tables and use grouping and aggregation. Our deliverable includes the content from Phase 1 with minor updates, the DDL/DML script, the four SQL queries, and the outputs of the queries.

CONTRIBUTIONS OF GROUP MEMBERS

Leader: Arub Sumayli

- Created 'guardian' table for DDL/DML script
- Generated data for 'guardian' table
- Added the 'sortGuardianBalance' query

Phase Recorder: Rihab Junagadhwala

- Created 'doctor' table for DDL/DML script
- Generated data for 'doctor' table
- Wrote the 'numDoctorFemalePatients' query

Phase Checker: Pragya Kansal

- Created 'patient' table for DDL/DML script
- Generated data for 'patient' table
- Debugged and reformatted DDL/DML script
- Wrote the 'patientsWithPneumonia' query

Technical Advisor: Kayla Salerno

- Created 'nurse', 'assignedToNur', and 'assignedToDoc' tables for DDL/DML script
- Generated data for 'nurse', 'assignedToNur', and 'assignedToDoc' tables
- Wrote program to assign patients to nurses and doctors
- Wrote the 'numNurseFewPatients' query
- Debugged and reformatted DDL/DML script