

Group Member 1
Group Member 2
Group Member 3

Project Scope Area:

Hospitals & Healthcare

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Deliverable 1

Introduction

Current Problems

Areas of Focus:

- **Nurse to Patient Ratios**
- **Malpractice Elimination (In-ability to overdose patient)**

The current data management problems that we are seeking to address is a major issue that are currently present in the healthcare field. We are seeking to fix the currently overstaffing issues, which has allowed for the overpopulation of the rosters for nurses with gross amounts of patients. The proposed database would seek to create a more concrete and structured methodology to assign patients to nurses, which would include a cap. This new method would allow for better results of care for the patient, allowing for nurses to more adequately address their patients. Alongside this, a secondary system would also be implemented to track the doses and types of medication that a nurse provides, if any, per patient. This subsidiary system would help to minimize, if not eliminate any potential for overdose or mis-medication for any given patient, easing worries on the nurses and doctors.

Development Motivation

The motivation for the database is to help in the avoidance of lawsuits, as well as the over-working of workers within the healthcare industry. This database is under development with the hopes of helping nurses, bringing down the stress that many workers have endured over the past couple years, and to level out the workload between many of the workers.

Benefits & Users

The potential users of the newly to-be integrated system lie with the patients of the hospital, the current hospital staff (i.e. nurses, doctors, receptionists, etc.), as well as hospital administration. The benefits that we envision moving forward are as follows, with faster response leading first and foremost. The other two main benefits that our system will lend to the healthcare field, is the ability to consolidate and maintain the current information easier with a newly integrated database system. This database will also provide a better system for doctors and nurses to communicate and adequately treat their patients.

Deliverable 2

Business Rules

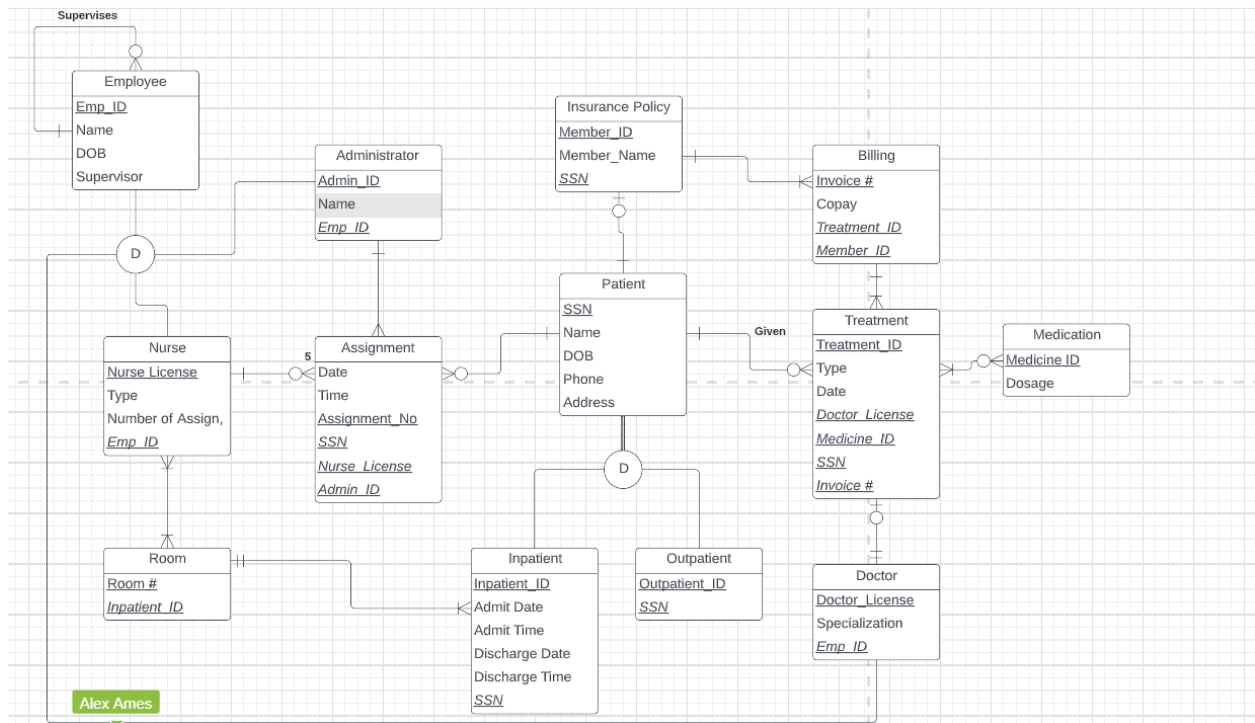
1. Nurse Capping
 - a. The maximum number of patients that a nurse can be assigned at any given time, is limited to 5. Nurses are assigned to patients by Administrators. A nurse can have one or more assignments, and an administrator can oversee one or more assignments.
2. Doctor-Nurse-Patient Relationships
 - a. Doctors, Nurses, and Administrators are considered employees of the hospital. Employees can be one of these, or none of these. The database tracks their respective license/registration numbers.
 - b. Each patient has a doctor and nurse(s) assigned to them for their stay or treatment. Administrators are responsible for overseeing the assignments. A patient can be an inpatient, with admittance/discharge dates and times, or an outpatient. All inpatients are assigned to a room.
 - c. Doctors are responsible for patient treatment plans, which have a treatment ID, date and type of treatment. Patients can have one or no treatment plans, while doctors can have one or no treatment plans for patients.
3. Room
 - a. When a patient is admitted into the hospital, they are also assigned to a room with an identifying number.
 - b. A room must be associated with an inpatient and with one or more nurses, but nurses do not have to be associated with a room if they are dealing with outpatients.
4. Insurance Policy
 - a. An Insurance policy is issued to a singular patient, but a patient does not need to have an insurance policy.
 - b. A bill for treatment is assigned to a single insurance policy, while an insurance policy can apply to one or many treatment bills.
5. Medication
 - a. Medicine is used in one or many treatments and is tracked in the database using a unique medication ID and a dosage.
 - b. Medication must be associated with a treatment plan, but a treatment may or may not require medication.
6. Employees
 - a. An employee can be either an Administrator, Doctor, or Nurse, but can also be none of the above.
 - b. Employees have a supervisor they report to.

User Requirements

1. Users of the database should be the following types of hospital employees: Nurses, Doctors, Administrators
2. Users of the database should have access to patient information, including plan of treatment, medications, dosages, medical history.

Deliverable 3

Entity Relation Diagram



Entities

- Patients
 - In-patient: A person who is treated within the hospital campus
 - Out-patient: A patient who is seen and then allowed to leave hospital campus
- Employees
 - Doctors: Responsible over nurses, assigns treatment plans.
 - Administrators: Responsible for viewing and tracking all assignments to patients
 - Nurses
 - Nurse Practitioner (NP): Nearly a doctor. Master's in Nursing. More autonomy
 - Registered Nurse (RN): Administers medicine. Associates/Bachelor's in Nursing.
 - Certified Nurse Assistant (CNA): Aids nurse under supervision. Performs basic functions
 - Other types (unlisted, partial specialization)

Relations

Employee

<u>Emp_ID</u>	Name	DOB	Supervisor
---------------	------	-----	------------

Nurse

<u>Nurse License</u>	Type	Num_Assignments	<u>Emp_ID</u>
----------------------	------	-----------------	---------------

Administrator

<u>Admin_ID</u>	Name	<u>Emp_ID</u>
-----------------	------	---------------

Room

<u>Room_Num</u>	<u>Inpatient_ID</u>
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Inpatient

<u>Inpatient_ID</u>	Admit Date	Admit Time	Discharge Date	Discharge Time
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Patient

<u>SSN</u>	Name	DOB	Phone Number	Address
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Doctor

<u>Doctor License</u>	Specialization	<u>Emp_ID</u>
-----------------------	----------------	---------------

Treatment

<u>Treatment_ID</u>	Type	Date	<u>Doctor License</u>	<u>SSN</u>	<u>Medicine_ID</u>	<u>Invoice_Num</u>
---------------------	------	------	-----------------------	------------	--------------------	--------------------

Billing

<u>Invoice #</u>	Copay	<u>Treatment_ID</u>
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Insurance Policy

<u>Member_ID</u>	Member_Name	<u>SSN</u>
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Assignment

Date	Time	<u>Assignment_No</u>
------	------	----------------------

Medication

<u>Medication_ID</u>	Dosage
----------------------	--------

TABLES

```
CREATE TABLE NURSE(NURSE_LICENSE INTEGER NOT NULL, EMP_ID  
VARCHAR(10) NOT NULL, NURSE_TYPE VARCHAR(25), ASSIGNMENTS INTEGER  
CHECK(ASSIGNMENTS<=5))  
CONSTRAINT NURSE_PK PRIMARY KEY(NURSE_LICENSE)  
CONSTRAINT NURSE_FK_1 FOREIGN KEY(EMP_ID) REFERENCES  
EMPLOYEE(EMP_ID)
```

```
CREATE TABLE EMPLOYEE(EMP_ID VARCHAR(10) NOT NULL, EMPLOYEE_NAME  
VARCHAR(25), EMPLOYEE_DOB VARCHAR(8), SUPERVISOR VARCHAR(25))  
CONSTRAINT EMP_PK PRIMARY KEY(EMP_ID)
```

```
CREATE TABLE HOSPITAL_ADMIN(ADMIN_ID INTEGER NOT NULL, ADMIN_NAME  
VARCHAR(25), EMP_ID VARCHAR(10) NOT NULL)  
CONSTRAINT ADMIN_PK PRIMARY KEY(ADMIN_ID)  
CONSTRAINT ADMIN_FK_1 FOREIGN KEY(EMP_ID) REFERENCES  
EMPLOYEE(EMP_ID)
```

```
CREATE TABLE DOCTOR(DOCTOR_LICENSE INTEGER NOT NULL, EMP_ID  
VARCHAR(10) NOT NULL, SPECIALIZATION VARCHAR(50))  
CONSTRAINT DOCTOR_PK PRIMARY KEY(DOCTOR_LICENSE)  
CONSTRAINT DOCTOR_FK_1 FOREIGN KEY(EMP_ID) REFERENCES  
EMPLOYEE(EMP_ID)
```

```
CREATE TABLE PATIENT(SSN INTEGER NOT NULL, PATIENT_NAME VARCHAR(25),  
PATIENT_DOB VARCHAR(8), PATIENT_PHONE VARCHAR(15), PATIENT_ADDRESS  
VARCHAR(50))  
CONSTRAINT PATIENT_PK PRIMARY KEY(SSN)
```

```
CREATE TABLE INPATIENT(INPATIENT_ID VARCHAR(25) NOT NULL, SSN INTEGER  
NOT NULL, ADMIT_DATE VARCHAR(8), ADMIT_TIME VARCHAR(10),  
DISCHARGE_DATE VARCHAR(8), DISCHARGE_TIME VARCHAR(10))  
CONSTRAINT INPATIENT_PK PRIMARY KEY(INPATIENT_ID)  
CONSTRAINT INPATIENT_FK_1 FOREIGN KEY(SSN) REFERENCES PATIENT(SSN)
```

```
CREATE TABLE OUTPATIENT(OUTPATIENT_ID VARCHAR(25) NOT NULL, SSN  
INTEGER NOT NULL)  
CONSTRAINT OUTPATIENT_PK PRIMARY KEY(OUTPATIENT_ID)  
CONSTRAINT OUTPATIENT_FK_1 FOREIGN KEY(SSN) REFERENCES PATIENT(SSN)
```

```
CREATE TABLE ROOM(ROOM_NUM INTEGER NOT NULL, INPATIENT_ID
VARCHAR(25))
CONSTRAINT ROOM_PK PRIMARY KEY(ROOM_NUM)
CONSTRAINT ROOM_FK_1 FOREIGN KEY(INPATIENT_ID) REFERENCES
INPATIENT(INPATIENT_ID)
```

```
CREATE TABLE TREATMENT(TREATMENT_ID INTEGER NOT NULL,
TREATMENT_TYPE VARCHAR(25), TREATMENT_DATE VARCHAR(8), SSN INTEGER
NOT NULL, DOCTOR_LICENSE INTEGER NOT NULL, INVOICE_NUM INTEGER NOT
NULL, MEDICINE_ID INTEGER NOT NULL)
CONSTRAINT TREATMENT_PK PRIMARY KEY (TREATMENT_ID)
CONSTRAINT TREATMENT_FK_1 FOREIGN KEY(SSN) REFERENCES PATIENT(SSN)
CONSTRAINT TREATMENT_FK_2 FOREIGN KEY(DOCTOR_LICENSE) REFERENCES
DOCTOR(DOCTOR_LICENSE)
CONSTRAINT TREATMENT_FK_3 FOREIGN KEY(INVOICE_NUM) REFERENCES
BILLING(INVOICE_NUM)
CONSTRAINT TREATMENT_FK_4 FOREIGN KEY(MEDICINE_ID) REFERENCES
MEDICATION(MEDICINE_ID)
```

```
CREATE TABLE MEDICATION(MEDICINE_ID INTEGER NOT NULL,
MEDICATION_NAME VARCHAR(50), DOSAGE VARCHAR(5) NOT NULL)
CONSTRAINT MEDICATION_PK PRIMARY KEY(MEDICINE_ID)
```

```
CREATE TABLE INSURANCE_POLICY(MEMBER_ID INTEGER NOT NULL,
MEMBER_NAME VARCHAR(50) NOT NULL, SSN INTEGER NOT NULL)
CONSTRAINT INSURANCE_PK PRIMARY KEY(MEMBER_ID)
CONSTRAINT INSURANCE_FK_1 FOREIGN KEY (SSN) REFERENCES PATIENT(SSN)
```

```
CREATE TABLE BILLING(INVOICE_NUM INTEGER NOT NULL, COPAY INTEGER NOT
NULL, TREATMENT_ID INTEGER NOT NULL, MEMBER_ID INTEGER NOT NULL)
CONSTRAINT BILLING_PK PRIMARY KEY(INVOICE_NUM)
CONSTRAINT BILLING_FK_1 FOREIGN KEY(TREATMENT_ID) REFERENCES
TREATMENT(TREATMENT_ID)
CONSTRAINT BILLING_FK_2 FOREIGN KEY(MEMBER_ID) REFERENCES
INSURANCE_POLICY(MEMBER_ID)
```



```

CREATE TABLE ASSIGNMENT(ASSIGNMENT_NUMBER INTEGER NOT NULL,
ASSIGN_DATE VARCHAR(8), ASSIGN_TIME INTEGER, NURSE_LICENSE INTEGER
NOT NULL, SSN INTEGER NOT NULL, ADMIN_ID INTEGER NOT NULL)
CONSTRAINT ASSIGNMENT_PK PRIMARY KEY(ASSIGNMENT_NUMBER)
CONSTRAINT ASSIGNMENT_FK_1 FOREIGN KEY(NURSE_LICENSE) REFERENCES
NURSE(NURSE_LICENSE)
CONSTRAINT ASSIGNMENT_FK_2 FOREIGN KEY(SSN) REFERENCES PATIENT(SSN)
CONSTRAINT ASSIGNMENT_FK_3 FOREIGN KEY(ADMIN_ID) REFERENCES
HOSPITAL_ADMIN(ADMIN_ID)

```

VALUES

Doctors:

```

INSERT INTO EMPLOYEE VALUES ('D248', 'John Dorian', '01051990', 'Gregory House');
INSERT INTO DOCTOR VALUES (5655, 'Pediatric', 'D248');
INSERT INTO EMPLOYEE VALUES ('D251', 'Christopher Turk', '05121990', 'Gregory
House');
INSERT INTO DOCTOR VALUES (5658, 'ER', 'D251');
INSERT INTO EMPLOYEE VALUES (D568, 'Gregory House', '12011978', 'Gregory House');
INSERT INTO DOCTOR VALUES (2543, 'Cardiology', 'D568');
INSERT INTO EMPLOYEE VALUES (D445, 'James Wilson', '03191980', 'Gregory House');
INSERT INTO DOCTOR VALUES (2165, 'Oncology', 'D445');

```

Patients:

```

INSERT INTO PATIENT VALUES ( 138290938, 'John Goat', 08152000, 8045949038, '1600
East Cary Street', 'Unit 23');
INSERT INTO INPATIENT VALUES ('IP83726', 138290938, 08132021, 0910, 08152021,
1245);
INSERT INTO PATIENT VALUES (823039402, 'Hugh Biggs', 06222002, 8040939832, '1829
High Street');
INSERT INTO INPATIENT VALUES ('IP27398', 8230339402, 06172021, 1540, 06262021,
0830);
INSERT INTO PATIENT VALUES (037939318, 'Henry Johnson', 06282013, 7579380927, '197
Avonington Road');
INSERT INTO OUTPATIENT VALUES ('OP83928', 037939318);
INSERT INTO PATIENT VALUES (823039382, 'Debby Miller', 05271968, '7579839836', '90
Temple Circle');
INSERT INTO OUTPATIENT VALUES ('OP83810', 823039382);

```

INSERT INTO PATIENT VALUES (038983983, 'Grace Stacie', 04131980, '4349837628', '9837 West Broad Street, Apt 982');
 INSERT INTO INPATIENT VALUES ('IP27336', 038983983, 03262022, 0743, 04102022, 1354);
 INSERT INTO PATIENT VALUES (048849202, 'Jenn Stacie', 04052014, '4345930293', '9837 West Broad Street, Apt 982');
 INSERT INTO INPATIENT VALUES ('IP94827', 048849202, 02192022, 1038, 03012022, 1230);
 INSERT INTO PATIENT VALUES (829028392, 'Denny Elson', 09182017, '2830399328', '9389 Cary Street');
 INSERT INTO INPATIENT VALUES ('IP83746', 829028392, 09182021, 0830, 09252021, 1836);
 INSERT INTO PATIENT VALUES (093283892, 'Harry Geno', 08292010, 4923929302, '283 High Point Avenue');
 INSERT INTO OUTPATIENT VALUES ('OP92038', 093283892);
 INSERT INTO PATIENT VALUES (038293728, 'Gyan Differs', 03292008, '8049089303', '938 Popper Street');
 INSERT INTO OUTPATIENT VALUES ('OP83729', 038293728);
 INSERT INTO PATIENT VALUES (082839827, 'Isaac Johns', 03271999, '8048398293', '2200 West Monroe Boulevard, Unit 92');
 INSERT INTO INPATIENT VALUES ('IP39273', 082839827, 07282021, 1829, 08052021, 1036);

Nurses:

INSERT INTO NURSE VALUES(379, 'N55', 'TRIAGE', 2);
 INSERT INTO NURSE VALUES('4570','N901', 'PEDIATRIC', 4);
 INSERT INTO NURSE VALUES(9934,'N2270', 'CARDIOLOGY', 1);
 INSERT INTO NURSE VALUES(59266,'N334', 'TRIAGE', 3);
 INSERT INTO NURSE VALUES(112,'N1992', 'ONCOLOGY', 1);
 INSERT INTO EMPLOYEE VALUES('N55', 'JESSICA STOKES', '01251979','D.JONES');
 INSERT INTO EMPLOYEE VALUES('N901', 'KYLE BRYANT', '10091990','M.CARLSSON');
 INSERT INTO EMPLOYEE VALUES('N2270', 'HEATHER DUBROW', '07251965','J.RICHARDS');
 INSERT INTO EMPLOYEE VALUES('N334', 'ROBYN DIXON', '04221984','D.JONES');
 INSERT INTO EMPLOYEE VALUES('N1992', 'CYNTHIA BAILEY', '12031977','J.RICHARDS');

Insurance Policy:

INSERT INTO INSURANCE POLICY (80006549, 'John Goat', 138290938);

INSERT INTO INSURANCE POLICY (90102585, 'Hugh Biggs', 823039402);
INSERT INTO INSURANCE POLICY (7482690, 'Grace Stacie', 038983983);
INSERT INTO INSURANCE POLICY (222414, 'Denny Elson', 829028392);
INSERT INTO INSURANCE POLICY (700799, 'Harry Geno', 093283892);
INSERT INTO INSURANCE POLICY (390028, 'Henry Johnson', 037939318);
INSERT INTO INSURANCE POLICY (378290, 'Debby Miller', 823039382);
INSERT INTO INSURANCE POLICY (382910, 'Jenn Stacie', 048849202);
INSERT INTO INSURANCE POLICY (7083902, 'Isaac Johns', 082839827);
INSERT INTO INSURANCE POLICY (708443, 'Gyan Differs', 038293728);

Billing:

INSERT INTO BILLING (123116, 20, 1000, 80006549);
INSERT INTO BILLING (44589, 0, 1001, 90102585);
INSERT INTO BILLING (200200, 50, 1007, 700799);
INSERT INTO BILLING (5580001, 20, 1006, 222414);
INSERT INTO BILLING (5580002, 100, 1004, 7482690);
INSERT INTO BILLING (948923, 500, 1005, 382910);
INSERT INTO BILLING (362738, 800, 1002, 390028);
INSERT INTO BILLING (5589290, 2500, 1003, 378290);
INSERT INTO BILLING (3772923, 3000, 1008, 708443);
INSERT INTO BILLING (36628, 2000, 1009, 7083902);

Treatment:

INSERT INTO TREATMENT (1000, 'Oncology', 08152021, 138290938, 2165, 123116, 8111);
INSERT INTO TREATMENT (1001, 'Cardiology', 06262021, 823039402, 2543, 44589, 9215);
INSERT INTO TREATMENT (1002, 'Pediatric', 04242022, 037939318, 5655, 390028, 4557);
INSERT INTO TREATMENT (1003, 'Oncology', 08272021, 823039382, 2165, 378290, 9982);
INSERT INTO TREATMENT (1004, 'ER', 04102022, 038983983, 5658, 5580002, 9215);
INSERT INTO TREATMENT (1005, 'Pediatric', 03012022, 048849202, 5655, 382910, 4557);
INSERT INTO TREATMENT (1006, 'Pediatric', 09252021, 829028392, 5655, 5580001, 3456);
INSERT INTO TREATMENT (1007, 'Pediatric', 02282021, 093283892, 5655, 200200, 7245);
INSERT INTO TREATMENT (1008, 'Oncology', 09252021, 038293728, 2165, 708443, 8111);
INSERT INTO TREATMENT (1009, 'ER', 08052021, 082839827, 5658, 7083902, 2931);

Medication:

INSERT INTO MEDICATION VALUES(4557, 'IBUPROFEN', '50MG');
INSERT INTO MEDICATION VALUES(2931, 'FENTANYL', '200CC');
INSERT INTO MEDICATION VALUES(9981, 'ARIMIDEX', '100MG');
INSERT INTO MEDICATION VALUES(7245, 'DIPHENHYDRAMINE', '10MG');

INSERT INTO MEDICATION VALUES(3456, 'AMOXICILLIN', '25MG');
INSERT INTO MEDICATION VALUES(9215, 'LORAZEPAM', '33MG');
INSERT INTO MEDICATION VALUES(8111, 'METHOTREXATE', '2.5MG');
INSERT INTO MEDICATION VALUES(8021, 'METHOTREXATE', '15MG');
INSERT INTO MEDICATION VALUES(3329, 'MORPHINE', '120CC');

Room:

INSERT INTO ROOM VALUES (242, 'IP83726');
INSERT INTO ROOM VALUES (89, 'IP27398');
INSERT INTO ROOM VALUES (184, 'IP27336');
INSERT INTO ROOM VALUES (193, 'IP94827');
INSERT INTO ROOM VALUES (290, 'IP83746');
INSERT INTO ROOM VALUES (252, 'IP39273');

Assignment:

INSERT INTO ASSIGNMENT VALUES(37298, 08132021, 0945, '379', 138290938, 3333);
INSERT INTO ASSIGNMENT VALUES(87329, 06172021, 1600, '379', 823039402, 3333);
INSERT INTO ASSIGNMENT VALUES(82930, 04252022, 1215, '4570', 037939318, 3333);
INSERT INTO ASSIGNMENT VALUES(34568, 08272021, 0832, '9934', 823039382, 3333);
INSERT INTO ASSIGNMENT VALUES(45723, 03262022, 0815, '9934', 038983983, 4444);
INSERT INTO ASSIGNMENT VALUES(54367, 02192022, 1040, '59266', 048849202, 4444);
INSERT INTO ASSIGNMENT VALUES(29303, 09182021, 0900, '59266', 829028392, 4444);
INSERT INTO ASSIGNMENT VALUES(93802, 02282021, 1430, '112', 093283892, 9999);
INSERT INTO ASSIGNMENT VALUES(38290, 09252021, 0840, '112', 038293728, 9999);
INSERT INTO ASSIGNMENT VALUES(38564, 07282021, 1845, '9934', 082839827, 9999);

Administrator:

INSERT INTO HOSPITAL_ADMIN VALUES(3333, 'KAREN HUGER', 'A205');
INSERT INTO HOSPITAL_ADMIN VALUES(4444, 'SONJA MORGAN', 'A333');
INSERT INTO HOSPITAL_ADMIN VALUES(9999, 'DOMINIC FREEMAN', 'A563');
INSERT INTO EMPLOYEE VALUES('A205', 'KAREN HUGER', '03141965', 'E.MILLER');
INSERT INTO EMPLOYEE VALUES('A333', 'SONJA MORGAN', '12251982', 'E.MILLER');
INSERT INTO EMPLOYEE VALUES('A563', 'DOMINIC FREEMAN', '07031953',
'E.MILLER');

TABLES - Screenshots

Employee

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object	EMPLOYEE ?					
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEE	EMP_ID	VARCHAR2	10	-	-	1	-	-	-
	EMPLOYEE_NAME	VARCHAR2	25	-	-	-	✓	-	-
	EMPLOYEE_DOB	VARCHAR2	8	-	-	-	✓	-	-
	SUPERVISOR	VARCHAR2	25	-	-	-	✓	-	-

EMP_ID	EMPLOYEE_NAME	EMPLOYEE_DOB	SUPERVISOR
N334	ROBYN DIXON	04221984	D.JONES
N55	JESSICA STOKES	01251979	D.JONES
N2270	HEATHER DUBROW	07251965	J.RICHARDS
N1992	CYNTHIA BAILEY	12031977	J.RICHARDS
A205	KAREN HUGER	03141965	E.MILLER
A333	SONJA MORGAN	12251982	E.MILLER
A563	DOMINIC FREEMAN	07031953	E.MILLER
D248	John Dorian	01051990	Gregory House
D251	Christopher Turk	05121990	Gregory House
D568	Gregory House	12011978	Gregory House

Administrator

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object	HOSPITAL_ADMIN ?					
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comments
HOSPITAL_ADMIN	ADMIN_ID	NUMBER	22	-	0	1	-	-	-
	ADMIN_NAME	VARCHAR2	25	-	-	-	✓	-	-
	EMP_ID	VARCHAR2	10	-	-	-	-	-	-

ADMIN_ID	ADMIN_NAME	EMP_ID
3333	KAREN HUGER	A205
4444	SONJA MORGAN	A333
9999	DOMINIC FREEMAN	A563

Doctor

3DESC DOCTOR

ResultsExplainDescribeSaved SQLHistory

Object TypeTABLE?

ObjectDOCTOR?

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DOCTOR	DOCTOR_LICENSE	NUMBER	22	-	0	1	-	-	-
	SPECIALIZATION	VARCHAR2	50	-	-	-	✓	-	-
	EMP_ID	VARCHAR2	10	-	-	-	-	-	-

DOCTOR_LICENSE	SPECIALIZATION	EMP_ID
5655	Pediatric	D248
5658	ER	D251
2543	Cardiology	D568
2165	Oncology	D445

Nurse

1DESC NURSE									
ResultsExplainDescribeSaved SQLHistory									
Object TypeTABLEObjectNURSE									
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
NURSE	NURSE_LICENSE	NUMBER	22	-	0	1	-	-	-
	EMP_ID	VARCHAR2	10	-	-	-	-	-	-
	NURSE_TYPE	VARCHAR2	25	-	-	-	✓	-	-
	ASSIGNMENTS	NUMBER	22	-	0	-	✓	-	-

NURSE_LICENSE		EMP_ID	NURSE_TYPE	ASSIGNMENTS
59266		N334	TRIAGE	3
4570		N901	PEDIATRIC	4
9934		N2270	CARDIOLOGY	1
112		N1992	ONCOLOGY	1
379		N55	TRIAGE	2

Patient

5DESC PATIENT

ResultsExplainDescribeSaved SQLHistory

Object TypeTABLE ?

ObjectPATIENT ?

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PATIENT	SSN	NUMBER	22	-	0	1	-	-	-
	PATIENT_NAME	VARCHAR2	25	-	-	-	✓	-	-
	PATIENT_DOB	VARCHAR2	8	-	-	-	✓	-	-
	PATIENT_PHONE	VARCHAR2	15	-	-	-	✓	-	-
	PATIENT_ADDRESS	VARCHAR2	50	-	-	-	✓	-	-

SSN	PATIENT_NAME	PATIENT_DOB	PATIENT_PHONE	PATIENT_ADDRESS
823039402	Hugh Biggs	06222002	8040939832	1829 High Street
38983983	Grace Stacie	4131980	4349837628	9837 West Broad Street, Apt 982
93283892	Harry Geno	08292010	4923929302	283 High Point Avenue
82839827	Isaac Johns	3271999	8048398293	2200 West Monroe Boulevard, Unit 92
138290938	John Goat	08152000	8045949038	1600 East Cary Street, Unit 23
48849202	Jenn Stacie	4052014	4345930293	9837 West Broad Street, Apt 982
37939318	Henry Johnson	6282013	7579380927	197 Avonington Road
823039382	Debby Miller	5271968	7579839836	90 Temple Circle
829028392	Denny Elson	9182017	2830399328	9389 Cary Street
38293728	Gyan Differs	3292008	8049089303	938 Popper Street

Inpatient

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object		INPATIENT ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
INPATIENT	INPATIENT_ID	VARCHAR2	25	-	-	1	-	-	-
	SSN	NUMBER	22	-	0	-	-	-	-
	ADMIT_DATE	VARCHAR2	8	-	-	-	✓	-	-
	ADMIT_TIME	VARCHAR2	10	-	-	-	✓	-	-
	DISCHARGE_DATE	VARCHAR2	8	-	-	-	✓	-	-
	DISCHARGE_TIME	VARCHAR2	10	-	-	-	✓	-	-

INPATIENT_ID	SSN	ADMIT_DATE	ADMIT_TIME	DISCHARGE_DATE	DISCHARGE_TIME
IP83726	138290938	08132021	910	08152021	1245
IP27336	38983983	3262022	743	4102022	1354
IP94827	48849202	02192022	1038	03012022	1230
IP27398	823039402	06172021	1540	06262021	830
IP83746	829028392	09182021	830	09252021	1836
IP39273	82839827	07282021	1829	08052021	1036

Outpatient

Results

Explain

Describe

Saved SQL

History

Object Type

TABLE

Object

OUTPATIENT

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OUTPATIENT	OUTPATIENT_ID	VARCHAR2	25	-	-	1	-	-	-
	SSN	NUMBER	22	-	0	-	-	-	-

OUTPATIENT_ID	SSN
OP92038	93283892
OP83729	38293728
OP83928	37939318
OP83810	823039382

Treatment

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object	TREATMENT ?					
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comments
TREATMENT	TREATMENT_ID	NUMBER	22	-	0	1	-	-	-
	TREATMENT_TYPE	VARCHAR2	25	-	-	-	✓	-	-
	TREATMENT_DATE	VARCHAR2	8	-	-	-	✓	-	-
	SSN	NUMBER	22	-	0	-	-	-	-
	DOCTOR_LICENSE	NUMBER	22	-	0	-	-	-	-
	INVOICE_NUM	NUMBER	22	-	0	-	-	-	-
	MEDICINE_ID	NUMBER	22	-	0	-	-	-	-

TREATMENT_ID	TREATMENT_TYPE	TREATMENT_DATE	SSN	DOCTOR_LICENSE	INVOICE_NUM	MEDICINE_ID
1000	Oncology	8152021	138290938	2165	123116	8111
1001	Cardiology	6262021	823039402	2543	44589	9215
1002	Pediatric	4242022	37939318	5655	390028	4557
1003	Oncology	8272021	823039382	2165	378290	9981
1004	ER	4102022	38983983	5658	5580002	9215
1005	Pediatric	3012022	48849202	5655	382910	4557
1006	Pediatric	9252021	829028392	5655	5580001	3456
1007	Pediatric	2282021	93283892	5655	200200	7245
1008	Oncology	9252021	38293728	2165	708443	8111
1009	ER	8052021	82839827	5658	7083902	2931

Billing

Results	Explain	Describe	Saved SQL History						
Object Type		TABLE ?	Object		BILLING ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BILLING	INVOICE_NUM	NUMBER	22	-	0	1	-	-	-
	COPAY	NUMBER	22	-	0	-	-	-	-
	TREATMENT_ID	NUMBER	22	-	0	-	-	-	-
	MEMBER_ID	NUMBER	22	-	0	-	-	-	-

INVOICE_NUM	COPAY	TREATMENT_ID	MEMBER_ID
123116	20	1000	80006549
44589	0	1001	90102585
200200	50	1007	700799
5580001	20	1006	222414
5580002	100	1004	7482690
948923	500	1005	382910
362738	800	1002	390028
5589290	2500	1003	378290
3772923	3000	1008	708443
36628	2000	1009	7083902

Insurance Policy

Results	Explain	Describe	Saved SQL		History				
Object Type		TABLE ?	Object		INSURANCE_POLICY ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
INSURANCE_POLICY	MEMBER_ID	NUMBER	22	-	0	1	-	-	-
	MEMBER_NAME	VARCHAR2	50	-	-	-	-	-	-
	SSN	NUMBER	22	-	0	-	-	-	-

Explain MEMBER_ID	MEMBER_NAME	SSN
7083902	Isaac Johns	82839827
80006549	John Goat	138290938
90102585	Hugh Biggs	823039402
700799	Harry Geno	93283892
378290	Debby Miller	823039382
708443	Gyan Differs	38293728
7482690	Grace Stacie	38983983
222414	Denny Elson	829028392
390028	Henry Johnson	37939318
382910	Jenn Stacie	48849202

Room

Results	Explain	Describe	Saved SQL		History				
Object Type		TABLE ?	Object		ROOM ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ROOM	ROOM_NUM	NUMBER	22	-	0	1	-	-	-
	INPATIENT_ID	VARCHAR2	25	-	-	-	✓	-	-

ROOM_NUM	INPATIENT_ID
242	IP83726
89	IP27398
184	IP27336
193	IP94827
290	IP83746
252	IP39273

Assignment

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object		ASSIGNMENT ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ASSIGNMENT	ASSIGNMENT_NUMBER	NUMBER	22	-	0	1	-	-	-
	ASSIGN_DATE	VARCHAR2	8	-	-	-	✓	-	-
	ASSIGN_TIME	NUMBER	22	-	0	-	✓	-	-
	NURSE_LICENSE	NUMBER	22	-	0	-	-	-	-
	SSN	NUMBER	22	-	0	-	-	-	-
	ADMIN_ID	NUMBER	22	-	0	-	-	-	-

ASSIGNMENT_NUMBER	ASSIGN_DATE	ASSIGN_TIME	NURSE_LICENSE	SSN	ADMIN_ID
37298	8132021	945	379	138290938	3333
87329	6172021	1600	379	823039402	3333
82930	4252022	1215	4570	37939318	3333
34568	8272021	832	9934	823039382	3333
45723	3262022	815	9934	38983983	4444
54367	2192022	1040	59266	48849202	4444
29303	9182021	900	59266	829028392	4444
93802	2282021	1430	112	93283892	9999
38290	9252021	840	112	38293728	9999
38564	7282021	1845	9934	82839827	9999

Medication

Results

Explain

Describe

Saved SQL

History

Object Type

TABLE ?

Object

MEDICATION ?

Table	Column	Help Text: Object Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
MEDICATION	MEDICINE_ID	NUMBER	22	-	0	1	-	-	-
	MEDICATION_NAME	VARCHAR2	50	-	-	-	✓	-	-
	DOSAGE	VARCHAR2	5	-	-	-	-	-	-

MEDICINE_ID	MEDICATION_NAME	DOSAGE
9981	ARIMIDEX	100MG
8021	METHOTREXATE	15MG
4557	IBUPROFEN	50MG
2931	FENTANYL	200CC
7245	DIPHENHYDRAMINE	10MG
9215	LORAZEPAM	33MG
8111	METHOTREXATE	2.5MG
3456	AMOXICILLIN	25MG
3329	MORPHINE	120CC

20 QUERIES (15 JOINS)

1. LIST ALL PATIENTS WHO ARE INPATIENT

```
SELECT PATIENT_NAME, SSN, INPATIENT_ID
FROM PATIENT NATURAL JOIN INPATIENT
```

PATIENT_NAME	SSN	INPATIENT_ID
Hugh Biggs	823039402	IP27398
Grace Stacie	38983983	IP27336
Isaac Johns	82839827	IP59273
John Goat	138290938	IP83726
Jenn Stacie	48849202	IP94827
Denny Elson	829028392	IP83746

6 rows returned in 0.00 seconds [Download](#)

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2. LIST ALL PATIENTS WHO ARE OUTPATIENT

```
SELECT PATIENT_NAME, SSN, OUTPATIENT_ID
FROM PATIENT NATURAL JOIN OUTPATIENT
```

PATIENT_NAME	SSN	OUTPATIENT_ID
Harry Geno	93283892	OP92038
Henry Johnson	37939318	OP83928
Debby Miller	823039382	OP83810
Gyan Differs	38293728	OP83729

4 rows returned in 0.01 seconds [Download](#)

3. WHICH PATIENTS HAVE BILLING INVOICES FOR MORE THAN \$1000

```
SELECT PATIENT.PATIENT_NAME, PATIENT.SSN, BILLING.INVOICE_NUM,
BILLING.COPAY
FROM PATIENT, BILLING, INSURANCE_POLICY
WHERE PATIENT.SSN = INSURANCE_POLICY.SSN AND
INSURANCE_POLICY.MEMBER_ID = BILLING.MEMBER_ID AND BILLING.COPAY >
'1000'
```

PATIENT_NAME	SSN	INVOICE_NUM	COPAY
Debby Miller	823039382	5589290	2500
Gyan Differs	38293728	3772923	3000
Isaac Johns	82839827	36628	2000

3 rows returned in 0.00 seconds [Download](#)

4. WHO HAS BEEN ASSIGNED TO ROOM 89

```
SELECT D.PATIENT_NAME, H.INPATIENT_ID, ROOM_NUM
FROM PATIENT D, INPATIENT H, ROOM F
WHERE D.SSN = H.SSN AND
H.INPATIENT_ID = F.INPATIENT_ID AND
ROOM_NUM = 89
```

Results Explain Describe Saved SQL History		
PATIENT_NAME	INPATIENT_ID	ROOM_NUM
Hugh Biggs	IP27398	89
1 rows returned in 0.00 seconds Download		

5. WHAT MEDICATIONS HAVE BEEN PRESCRIBED

```
SELECT UNIQUE MEDICATION_NAME, MEDICINE_ID
FROM TREATMENT NATURAL JOIN MEDICATION
```

Results Explain Describe Saved SQL History	
MEDICATION_NAME	MEDICINE_ID
ARIMIDEX	9981
DIPHENHYDRAMINE	7245
IBUPROFEN	4557
AMOXICILLIN	3456
FENTANYL	2931
METHOTREXATE	8111
LORAZEPAM	9215
7 rows returned in 0.00 seconds Download	

6. WHICH NURSES HAVE LESS THAN 3 ASSIGNMENTS

```
SELECT NURSE.NURSE_LICENSE, NURSE.ASSIGNMENTS
FROM NURSE
WHERE ASSIGNMENTS < 3
```

Results Explain Describe Saved SQL History	
NURSE_LICENSE	ASSIGNMENTS
9934	1
112	1
379	2
3 rows returned in 0.01 seconds Download	

7. HOW MANY ASSIGNMENTS DOES ADMINISTRATOR 3333 OVERSEE

```
SELECT UNIQUE C.ADMIN_NAME, C.ADMIN_ID, D.ASSIGNMENT_NUMBER
FROM HOSPITAL_ADMIN C, ASSIGNMENT D
WHERE C.ADMIN_ID = D.ADMIN_ID AND
C.ADMIN_ID = 3333
```

Results Explain Describe Saved SQL History		
ADMIN_NAME	ADMIN_ID	ASSIGNMENT_NUMBER
KAREN HUGER	3333	37298
KAREN HUGER	3333	87329
KAREN HUGER	3333	82930
KAREN HUGER	3333	34568

4 rows returned in 0.00 seconds [Download](#)

8. WHAT IS THE TOTAL AMOUNT OF COPAYS

```
SELECT SUM(D.COPAY)
FROM BILLING D
WHERE D.COPAY > 0
```

Results Explain Describe Saved SQL History	
SUM(D.COPAY)	
8990	

1 rows returned in 0.00 seconds [Download](#)

9. WHAT MEDICATIONS HAS PATIENT 'JOHN GOAT' BEEN GIVEN?

```
SELECT MEDICATION_NAME, PATIENT_NAME
FROM TREATMENT INNER JOIN PATIENT ON PATIENT.SNN = TREATMENT.SSN
INNER JOIN MEDICATION ON TREATMENT.MEDICINE_ID =
MEDICATION.MEDICINE_ID
WHERE PATIENT_NAME = 'JOHN GOAT';
```

MEDICATION_NAME	PATIENT_NAME
METHOTREXATE	John Goat

10. WHICH PATIENTS HAVE SEEN AN ONCOLOGY DOCTOR?

```
SELECT PATIENT_NAME, TREATMENT_NAME
FROM TREATMENT INNER JOIN PATIENT ON TREATMENT.SSN = PATIENT.SSN
WHERE TREATMENT_TYPE = 'ONCOLOGY'
```

PATIENT_NAME	TREATMENT_TYPE
John Goat	Oncology
Debby Miller	Oncology
Gyan Differs	Oncology

11. LIST ALL PATIENTS

```
SELECT *
FROM PATIENT
```

SSN	PATIENT_NAME	PATIENT_DOB	PATIENT_PHONE	PATIENT_ADDRESS
823039402	Hugh Biggs	06222002	8040939832	1829 High Street
38983983	Grace Stacie	4131980	4349837628	9837 West Broad Street, Apt 982
93283892	Harry Geno	08292010	4923929302	283 High Point Avenue
82839827	Isaac Johns	3271999	8048398293	2200 West Monroe Boulevard, Unit 92
138290938	John Goat	08152000	8045949038	1600 East Cary Street, Unit 23
48849202	Jenn Stacie	4052014	4345930293	9837 West Broad Street, Apt 982
37939318	Henry Johnson	6282013	7579380927	197 Avonington Road
823039382	Debby Miller	5271968	7579839836	90 Temple Circle
829028392	Denny Elson	9182017	2830399328	9389 Cary Street
38293728	Gyan Differs	3292008	8049089303	938 Popper Street

12. WHAT IS THE AVERAGE COPAY FOR TRIAGE PATIENTS

```
SELECT AVG(BILLING.COPAY)
FROM BILLING INNER JOIN TREATMENT ON BILLING.INVOICE_NUM =
TREATMENT.INVOICE_NUM
WHERE TREATMENT.TREATMENT_TYPE = 'ER'
```

AVG(BILLING.COPAY)
1050

13. WHICH NURSES ARE SUPERVISED BY 'D.JONES'?

```
SELECT EMPLOYEE.EMPLOYEE_NAME AS "D.JONES DIRECT REPORTS"
FROM EMPLOYEE INNER JOIN NURSE ON EMPLOYEE.EMP_ID = NURSE.EMP_ID
WHERE SUPERVISOR = 'D.JONES'
```

D.JONES DIRECT REPORTS
ROBYN DIXON
JESSICA STOKES

14. WHICH PATIENTS HAVE BEEN TREATED WITH 'METHOTREXATE'?

```
SELECT UNIQUE P.PATIENT_NAME, C.TREATMENT_ID, D.MEDICATION_NAME
FROM PATIENT P, TREATMENT C, MEDICATION D
WHERE D.MEDICINE_ID = '8111' OR D.MEDICINE_ID = '8021'
```

PATIENT_NAME	TREATMENT_ID	MEDICATION_NAME
Hugh Biggs	1009	METHOTREXATE
Grace Stacie	1003	METHOTREXATE
Grace Stacie	1008	METHOTREXATE
Isaac Johns	1000	METHOTREXATE
Jenn Stacie	1004	METHOTREXATE
Jenn Stacie	1007	METHOTREXATE
Henry Johnson	1000	METHOTREXATE

15. LIST ALL ASSIGNMENTS

```
SELECT *
FROM ASSIGNMENT
```

ASSIGNMENT_NUMBER	ASSIGN_DATE	ASSIGN_TIME	NURSE_LICENSE	SSN	ADMIN_ID
37298	8132021	945	379	138290938	3333
87329	6172021	1600	379	823039402	3333
82990	4252022	1215	4570	37939318	3333
34568	8272021	832	9934	823039382	3333
45723	5262022	815	9934	38983983	4444
54367	2192022	1040	59266	48849202	4444
29303	9182021	900	59266	829028392	4444
93802	2282021	1430	112	95283892	9999
38290	9252021	840	112	38295728	9999
38564	7282021	1845	9934	82839827	9999

16. LIST DOCTORS THAT HAVE TREATED OUTPATIENTS

```
SELECT UNIQUE EMPLOYEE.EMPLOYEE_NAME, EMPLOYEE.EMP_ID
FROM EMPLOYEE, DOCTOR, PATIENT, OUTPATIENT
WHERE EMPLOYEE.EMP_ID = DOCTOR.EMP_ID
AND PATIENT.SSN = OUTPATIENT.SSN
```

EMPLOYEE_NAME	EMP_ID
James Wilson	D445
Christopher Turk	D251
John Dorian	D248
Gregory House	D568

17. LIST INPATIENTS THAT HAVE TREATMENT TYPE 'PEDIATRIC'

```
SELECT PATIENT.PATIENT_NAME, TREATMENT.TREATMENT_TYPE
FROM PATIENT, INPATIENT, TREATMENT
WHERE TREATMENT.TREATMENT_TYPE = 'Pediatric'
AND PATIENT.SSN = INPATIENT.SSN
AND INPATIENT.SSN = TREATMENT.SSN
```

PATIENT_NAME	TREATMENT_TYPE
Jenn Stacie	Pediatric
Denny Elson	Pediatric

2 rows returned in 0.00 seconds [Download](#)

18. WHAT ARE THE TREATMENT TYPES FOR ALL INPATIENTS

```
SELECT PATIENT_NAME, TREATMENT.TREATMENT_TYPE FROM PATIENT INNER
JOIN TREATMENT ON PATIENT.SSN = TREATMENT.SSN
INNER JOIN INPATIENT ON PATIENT.SSN = INPATIENT.SSN
```

PATIENT_NAME	TREATMENT_TYPE
John Goat	Oncology
Hugh Biggs	Cardiology
Grace Stacie	ER
Jenn Stacie	Pediatric
Denny Elson	Pediatric
Isaac Johns	ER

19. WHICH PATIENTS WERE ASSIGNED A CARDIOLOGY NURSE

```
SELECT PATIENT.PATIENT_NAME, NURSE_TYPE, EMPLOYEE_NAME FROM
ASSIGNMENT INNER JOIN PATIENT ON ASSIGNMENT.SSN = PATIENT.SSN
INNER JOIN NURSE ON ASSIGNMENT.NURSE_LICENSE = NURSE.NURSE_LICENSE
INNER JOIN EMPLOYEE ON NURSE.EMP_ID = EMPLOYEE.EMP_ID
WHERE NURSE_TYPE = 'CARDIOLOGY'
```

PATIENT_NAME	NURSE_TYPE	EMPLOYEE_NAME
Debby Miller	CARDIOLOGY	HEATHER DUBROW
Grace Stacie	CARDIOLOGY	HEATHER DUBROW
Isaac Johns	CARDIOLOGY	HEATHER DUBROW

20. WHAT WAS THE MAX COPAY FOR PEDIATRIC PATIENTS

```
SELECT MAX(BILLING.COPAY) AS "HIGHEST PEDIATRIC COPAY" FROM BILLING
LEFT OUTER JOIN TREATMENT ON BILLING.TREATMENT_ID =
TREATMENT.TREATMENT_ID
WHERE TREATMENT.TREATMENT_TYPE = 'Pediatric'
```

HIGHEST PEDIATRIC COPAY

800

Group Evaluation

As a group, we are submitting a work that we believe to have completed to the finest degree. We are content and prideful with the work that we each put together to formulate this project. All members of the group performed their roles to the best of their abilities.

Signatures: Add your signatures here