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Hotel Database

Oracle Final Project

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# Database Overview

## Database Description

This Database is a model of a hospitals, what they are composed of, and how their components interact. This database will have multiple hospitals in it. Each hospital can be composed of one or more buildings as well. The purpose of the database is to organize not only a patient’s information but also the employee’s information and more. This database will handle many real-world applicable situations to gather necessary information.

Each table is minimized so that it does not have unnecessary data that would belong in a different table. Each table is related to the necessary other tables in order for the database to function correctly.

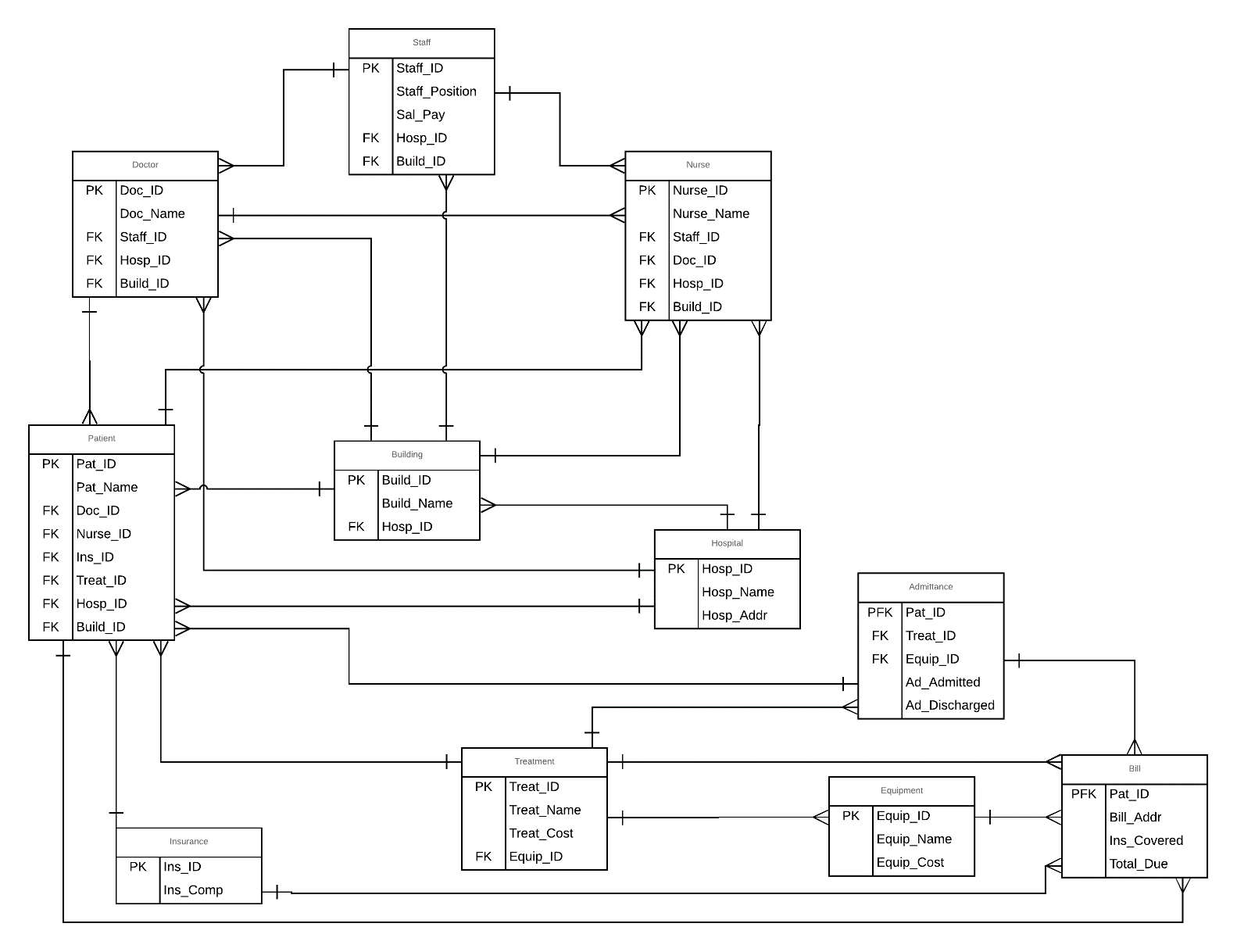
The Largest table with the most relations is the Patient table. This is because it has various information such as their name, their doctor’s name, what their insurance and more. Each piece of the table allows the table to connect to another. The Patient table relates to the doctor table in which a Doctor can have many patients but a Patient can have only one doctor. The relationship works the same with the Nurse table as it had with the Doctor. A Patient is also in a Building which is part of a certain Hospital, both of which are other tables. Another piece is the Bill which the Patient can have one bill for each time they are admitted and discharged from the hospital.

Before, the Hospital and Building tables were mentioned. A Hospital can have many Buildings but a Building can only belong to one particular Hospital. In addition, the Doctor’s and Nurse’s also belong to only one Building and Hospital.

The Staff table is used to define the varying salaries for the different job positions, the Doctor and the Nurse. The Staff table organizes the overall staff between all hospitals, buildings, and will describe the position and pay.

Every Treatment only has one piece of Equipment that will work for it but a piece of Equipment can be used for multiple Treatments. Both the Treatments and Equipment have costs that will get factored into the Bill at the end. Patients can have Insurance which will lower the total cost of the Bill as well.

## ER Diagram



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# Table Descriptions

## Patient

The Patient table is the table the gives most of the patient’s data. Any information about the Patient that is not given in the Patient table itself is in another table through a relationship. For example the Patient’s billing address is not in this table but each patient has a bill and their address can be found there. This Patient table has one constraint for its primary which is the PAT\_ID. There are also six constraints for the foreign keys which are: DOC\_ID, NURSE\_ID, INS\_ID, TREAT\_ID, HOSP\_ID, BUILD\_ID. These foreign keys give the ID’s of the patient’s doctor and nurse, their insurance company, treatment, the hospital they are in and which building in that hospital they are in.

CREATE TABLE FPATIENT

(

PAT\_ID NUMBER(38,0) NOT NULL ENABLE,

PAT\_NAME VARCHAR2(26 BYTE),

DOC\_ID NUMBER(38,0),

NURSE\_ID NUMBER(38,0),

INS\_ID NUMBER(38,0),

TREAT\_ID NUMBER(38,0),

HOSP\_ID NUMBER(38,0),

BUILD\_ID NUMBER(38,0),

CONSTRAINT FPATIENT\_PK PRIMARY KEY (PAT\_ID)

CONSTRAINT FK\_DOC\_ID FOREIGN KEY (DOC\_ID) REFERENCES FDOCTOR (DOC\_ID),

CONSTRAINT FK\_NURSE\_ID FOREIGN KEY (NURSE\_ID) REFERENCES FNURSE (NURSE\_ID),

CONSTRAINT FK\_INSID FOREIGN KEY (INS\_ID) REFERENCES FINSURANCE (INS\_ID),

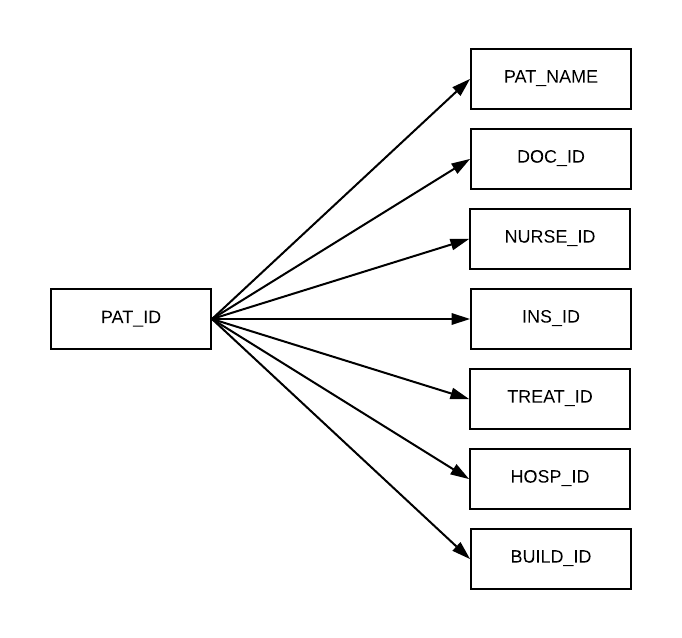
CONSTRAINT FK\_TREATID FOREIGN KEY (TREAT\_ID) REFERENCES FTREATMENT (TREAT\_ID),

CONSTRAINT FK\_HOSP\_I\_D\_ FOREIGN KEY (HOSP\_ID) REFERENCES FHOSPITAL (HOSP\_ID),

CONSTRAINT FK\_BUILD\_I\_D\_ FOREIGN KEY (BUILD\_ID) REFERENCES FBUILDING (BUILD\_ID)

);

**Third Normal Form Justification:**



## Doctor

The Doctor table is most of the doctor’s information. It keeps track of all of the doctor’s IDs and names. They are also given a Staff ID so they can be recorded in the Staff table. They also have Hospital and Building IDs so that it is recorded which ones they are correlated with. There is one constraint for the primary key which is the DOC\_ID. There are also three constraints for the foreign keys which are STAFF\_ID, HOSP\_ID, BUILD\_ID.

CREATE TABLE FDOCTOR

(

DOC\_ID NUMBER(38,0) NOT NULL ENABLE,

DOC\_NAME VARCHAR2(26 BYTE),

STAFF\_ID NUMBER(38,0),

HOSP\_ID NUMBER(38,0),

BUILD\_ID NUMBER(38,0),

CONSTRAINT FDOCTOR\_PK PRIMARY KEY (DOC\_ID),

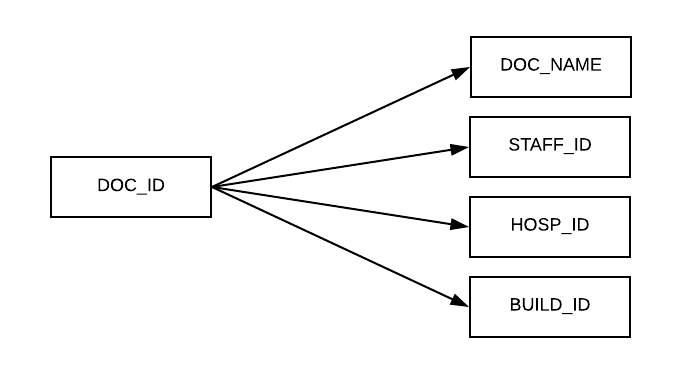
CONSTRAINT FK\_STAFFID FOREIGN KEY (STAFF\_ID) REFERENCES FSTAFF (STAFF\_ID),

CONSTRAINT FK\_HOSPID" FOREIGN KEY (HOSP\_ID) REFERENCES FHOSPITAL (HOSP\_ID),

CONSTRAINT FK\_BUILDID" FOREIGN KEY (BUILD\_ID) REFERENCES FBUILDING (BUILD\_ID)

);

**Third Normal Form Justification:**



## Nurse

The Nurse table is very similar to that of the Doctor table. Every foreign key is the same except there is a fourth additional foreign key which is the DOC\_ID. This keeps track of which doctor that this specific nurse is working under. This table has the primary constraint being the NURSE\_ID. Every nurse has a NURSE\_ID and a NURSE\_NAME much like the doctors have a DOC\_ID and DOC\_NAME.

CREATE TABLE FNURSE

(

NURSE\_ID NUMBER(38,0) NOT NULL ENABLE,

NURSE\_NAME VARCHAR2(26 BYTE),

STAFF\_ID NUMBER(38,0),

DOC\_ID NUMBER(38,0),

HOSP\_ID NUMBER(38,0),

BUILD\_ID NUMBER(38,0),

CONSTRAINT FNURSE\_PK PRIMARY KEY (NURSE\_ID),

CONSTRAINT FK\_STAFF\_ID FOREIGN KEY (STAFF\_ID) REFERENCES FSTAFF (STAFF\_ID),

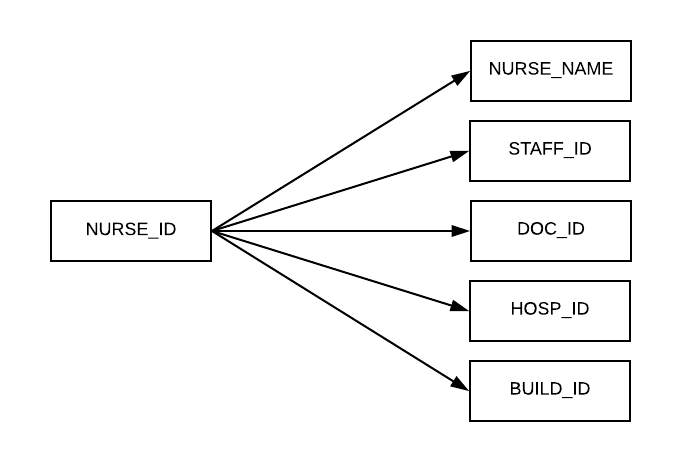
CONSTRAINT FK\_DOCID FOREIGN KEY (DOC\_ID) REFERENCES FDOCTOR (DOC\_ID),

CONSTRAINT FK\_HOSP\_ID FOREIGN KEY (HOSP\_ID) REFERENCES FHOSPITAL (HOSP\_ID),

CONSTRAINT FK\_BUILD\_ID FOREIGN KEY (BUILD\_ID) REFERENCES FBUILDING (BUILD\_ID)

);

**Third Normal Form Justification:**



## Staff

The Staff table is used to keep track of every employee, regardless of their position, building, or hospital. The Staff table also determines and keeps track of the staff’s salary. There is one constraint for the primary key which is the STAFF\_ID. There are two constraints for foreign keys which are the HOSP\_ID and BUILD\_ID.

CREATE TABLE FSTAFF

(

STAFF\_ID NUMBER(38,0) NOT NULL ENABLE,

STAFF\_POSITION VARCHAR2(26 BYTE),

SAL\_PAY NUMBER(38,0),

HOSP\_ID NUMBER(38,0),

BUILD\_ID NUMBER(38,0),

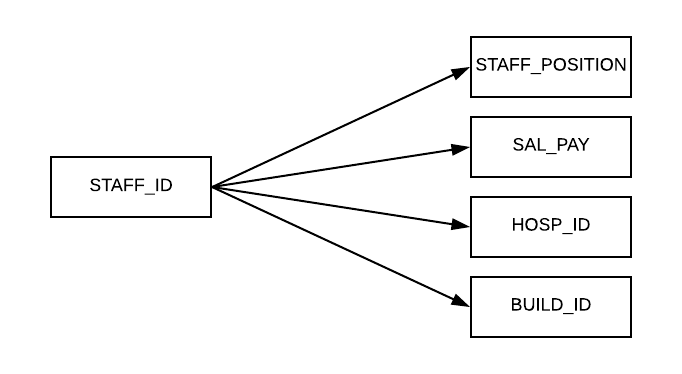
CONSTRAINT FSTAFF\_PK PRIMARY KEY (STAFF\_ID),

CONSTRAINT F\_K\_HOSP\_ID FOREIGN KEY (HOSP\_ID) REFERENCES FHOSPITAL (HOSP\_ID),

CONSTRAINT F\_K\_BUILD\_ID FOREIGN KEY (BUILD\_ID) REFERENCES FBUILDING (BUILD\_ID)

);

**Third Normal Form Justification:**



## Hospital

The Hospital table is used to keep track of the different hospitals that are in the database. Aside from the hospital’s ID and name there is also a hospital address. The primary key constraint is the only constraint for this table which is the HOSP\_ID.

CREATE TABLE FHOSPITAL

(

HOSP\_ID NUMBER(38,0) NOT NULL ENABLE,

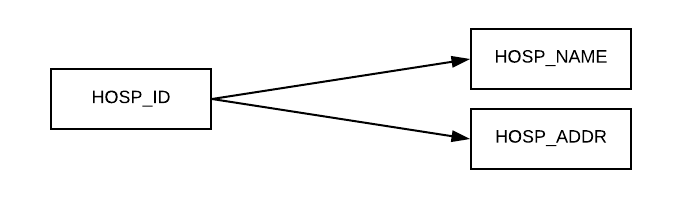
HOSP\_NAME VARCHAR2(26 BYTE),

HOSP\_ADDR VARCHAR2(26 BYTE),

CONSTRAINT FHOSPITAL\_PK PRIMARY KEY (HOSP\_ID)

);

**Third Normal Form Justification:**



## Building

The Building table is similar to that of the Hospital table. There is a given building ID and name. There is also a hospital ID given so it is clear which hospital this building is a part of. There is a constraint for the primary key which is the BUILD\_ID. There is also a constraint for the Foreign key which is the HOSP\_ID.

CREATE TABLE FBUILDING

(

HOSP\_ID NUMBER(38,0),

BUILD\_ID NUMBER(38,0) NOT NULL ENABLE,

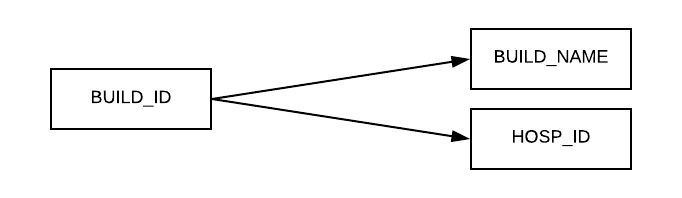
BUILD\_NAME VARCHAR2(26 BYTE),

CONSTRAINT FBUILDING\_PK PRIMARY KEY (BUILD\_ID)

CONSTRAINT F\_K\_HOSP\_I\_D FOREIGN KEY (HOSP\_ID) REFERENCES FHOSPITAL (HOSP\_ID)

);

**Third Normal Form Justification:**



## Insurance

The Insurance table is used to simply keep track of the various Insurance companies that the patients could potentially have. The Patient table is connected here via the INS\_ID which is the primary key and only constraint on this table. It is possible for there to be nulls in the patients INS\_ID record if they do not have insurance. (“No insurance” is not a value in this table instead nulls are used in the patient table).

CREATE TABLE FINSURANCE

(

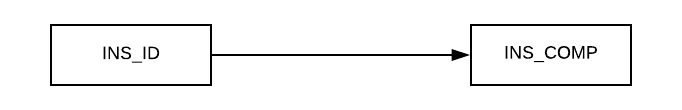
INS\_ID NUMBER(38,0) NOT NULL ENABLE,

INS\_COMP VARCHAR2(26 BYTE),

CONSTRAINT FINSURANCE\_PK PRIMARY KEY (INS\_ID)

);

**Third Normal Form Justification:**



## Admittance

The Admittance table is used mainly to track when the patients were admitted to the hospital as well as if/when they are discharged from the hospital. It also adds the EQUIP\_ID and TREAT\_ID which are two of the table’s foreign keys. This is listed here so that we can see what the particular patients needed treatment wise and what equipment was needed for the treatments. The primary key is also a foreign key and is the PAT\_ID.

CREATE TABLE FADDMITANCE

(

PAT\_ID NUMBER(38,0) NOT NULL ENABLE,

TREAT\_ID NUMBER(38,0),

EQUIP\_ID NUMBER(38,0),

ADD\_ADDMITTED DATE,

ADD\_DISCHARGED DATE,

CONSTRAINT FADDMITANCE\_PK PRIMARY KEY (PAT\_ID),

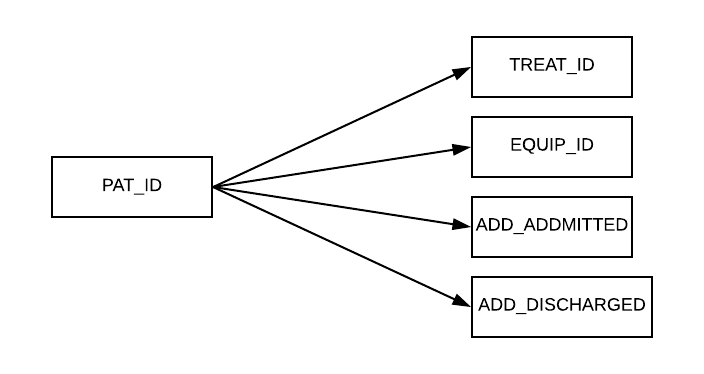
CONSTRAINT FK\_PAT\_ID FOREIGN KEY (PAT\_ID) REFERENCES FPATIENT (PAT\_ID),

CONSTRAINT FK\_TREAT\_ID FOREIGN KEY (TREAT\_ID) REFERENCES FTREATMENT (TREAT\_ID),

CONSTRAINT FK\_EQUIP\_I\_D FOREIGN KEY (EQUIP\_ID) REFERENCES FEQUIPMENT (EQUIP\_ID)

);

**Third Normal Form Justification:**



## Treatment

The Treatment table is to organize the various aspects of what goes into a treatment. Each treatment is identified by the primary key which is the TREAT\_ID. Along with the id is the treatments name. The TREAT\_COST is located here but is factored into the total amount of the bill. The EQUIP\_ID is a foreign key here because treatments need to have certain equipment that correspond to it.

CREATE TABLE FTREATMENT

(

TREAT\_ID NUMBER(38,0) NOT NULL ENABLE,

TREAT\_NAME VARCHAR2(26 BYTE),

TREAT\_COST NUMBER(38,0),

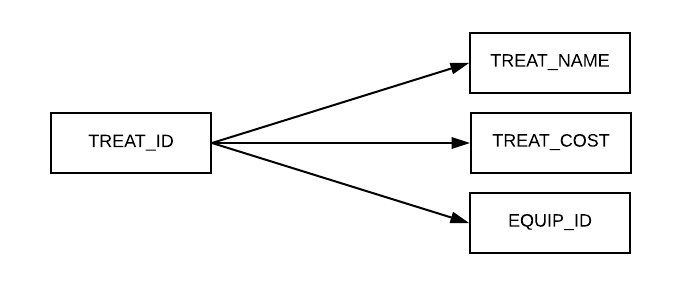
EQUIP\_ID NUMBER(38,0),

CONSTRAINT FTREATMENT\_PK PRIMARY KEY (TREAT\_ID),

CONSTRAINT FK\_EQUIP\_ID FOREIGN KEY (EQUIP\_ID) REFERENCES FEQUIPMENT (EQUIP\_ID)

);

**Third Normal Form Justification:**



## Equipment

The Equipment table is used to identify equipment and its cost that will get factored into the patient’s bill. The EQUIP\_ID is the primary key as well as the only constraint for this table. The EQUIP\_NAME is also included.

CREATE TABLE FEQUIPMENT

(

EQUIP\_ID NUMBER(38,0) NOT NULL ENABLE,

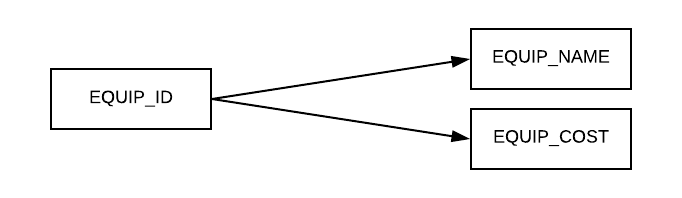
EQUIP\_NAME VARCHAR2(26 BYTE),

EQUIP\_COST NUMBER(38,0),

CONSTRAINT FEQUIPMENT\_PK PRIMARY KEY (EQUIP\_ID)

);

**Third Normal Form Justification:**



## Bill

The Bill is used to tie together more Patient information that is not directly given in the patient table. This is separate because the information here is indirectly about the patient but more about how the information can appear on the bill. The PAT\_ID makes up the two constraint for this table since it is the primary key as well as a foreign key. The patients billing addresses are listed here. This is where it is shown whether or not the insurance covered any, all, or none of the TOTAL\_DUE.

CREATE TABLE FBILL

(

PAT\_ID NUMBER(38,0) NOT NULL ENABLE,

BILL\_ADDR VARCHAR2(26 BYTE),

DOCTOR\_COST NUMBER(38,0),

INS\_COVERED NUMBER(38,2),

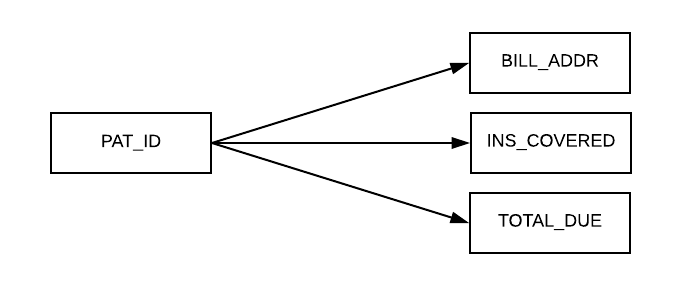
TOTAL\_DUE NUMBER(38,2),

CONSTRAINT FBILL\_PK PRIMARY KEY (PAT\_ID),

CONSTRAINT FK\_PAT\_ID\_ FOREIGN KEY (PAT\_ID) REFERENCES FPATIENT (PAT\_ID)

);

**Third Normal Form Justification:**



# Queries

## Query1FinalEvery

**English statement:**

For every patient that is in building Foy get the hospital name

**SQL:**

SELECT fpatient.pat\_name

FROM fpatient

WHERE NOT EXISTS

(SELECT \*

FROM fbuilding

WHERE fbuilding.build\_name = 'Foy'

AND NOT EXISTS

(SELECT \*

FROM fhospital

WHERE fbuilding.hosp\_id = fhospital.hosp\_id));

**Table:**

|  |
| --- |
| **PAT\_NAME** |
| Sam Beson |
| Sam Berenberg |
| Nico Agostini |
| Tobi Omotoso |
| Matt Gronert |
| Laura Tucker |
| Chris Lauria |
| Ben Mazza |
| Michael Leitner |
| Pat Dilloin |
| Ethan Black |
| Jack Andrus |
| Scottie German |
| Jared Babsky |
| Laura Moelis |
| Amy Sky |
| Matt Kretz |
| Chris Ravosa |
| Miller Fink |
| Luke Skywalker |
| Han Solo |
| Indiana Jones |
| Boba Fett |
| Chuck Kautz |
| Kaitlyn Durso |
| Andrew Crawford |
| Sarah Crawford |
| Larry David |
| Jerry Seinfeld |
| Arthur Morgan |

**Cardinality:** 30

## Query2FinalOnly

**English Statement:**

Name the staff who are only nurses in a hospital other than Monmouth Medical.

**SQL:**

SELECT fstaff.staff\_id

FROM fstaff

WHERE fstaff.staff\_id NOT IN(

SELECT fdoctor.staff\_id

FROM fdoctor

WHERE fdoctor.hosp\_id NOT IN(

SELECT fhospital.hosp\_id

FROM fhospital

WHERE fhospital.hosp\_name = 'Monmouth Medical'));

**Table:**

|  |
| --- |
| **STAFF\_ID** |
| 2016 |
| 2017 |
| 2015 |
| 2011 |
| 2002 |
| 2010 |
| 2014 |
| 2008 |
| 2005 |
| 2018 |
| 2001 |
| 2007 |
| 2012 |
| 2013 |
| 2019 |
| 2003 |
| 1001 |
| 2006 |
| 1002 |
| 2009 |
| 2020 |
| 2004 |

**Cardinality:** 22

## Query3FinalNone

**English Statement:**

Name patients not in Jersey Shore.

**SQL:**

SELECT fpatient.pat\_name

FROM fpatient

WHERE fpatient.hosp\_id NOT IN(

SELECT fhospital.hosp\_id

FROM fhospital

WHERE fhospital.hosp\_name = 'Jersey Shore');

**Table:**

|  |
| --- |
| **PAT\_NAME** |
| Arthur Morgan |
| Jerry Seinfeld |
| Larry David |
| Sarah Crawford |
| Andrew Crawford |
| Kaitlyn Durso |
| Chuck Kautz |
| Boba Fett |
| Indiana Jones |
| Ben Mazza |
| Chris Lauria |
| Laura Tucker |
| Matt Gronert |
| Tobi Omotoso |
| Nico Agostini |
| Sam Berenberg |
| Sam Beson |

**Cardinality:** 17

## Query4FinalLeftJoin

**English Statement:**

Give all patient names along with the name of their Insurance company if any.

**SQL:**

SELECT fpatient.pat\_name, finsurance.ins\_id, finsurance.ins\_comp

FROM fpatient LEFT JOIN finsurance ON fpatient.ins\_id = finsurance.ins\_id;

**Table:**

|  |  |  |
| --- | --- | --- |
| **PAT\_NAME** | **INS\_ID** | **INS\_COMP** |
| Jerry Seinfeld | 100 | Blue Cross Blue Shield |
| Chuck Kautz | 100 | Blue Cross Blue Shield |
| Boba Fett | 100 | Blue Cross Blue Shield |
| Matt Kretz | 100 | Blue Cross Blue Shield |
| Ethan Black | 100 | Blue Cross Blue Shield |
| Nico Agostini | 100 | Blue Cross Blue Shield |
| Sam Beson | 100 | Blue Cross Blue Shield |
| Arthur Morgan | 200 | Anthem |
| Sarah Crawford | 200 | Anthem |
| Kaitlyn Durso | 200 | Anthem |
| Indiana Jones | 200 | Anthem |
| Han Solo | 200 | Anthem |
| Jack Andrus | 200 | Anthem |
| Pat Dilloin | 200 | Anthem |
| Michael Leitner | 200 | Anthem |
| Tobi Omotoso | 200 | Anthem |
| Sam Berenberg | 200 | Anthem |
| Andrew Crawford | 300 | United Healthcare |
| Scottie German | 300 | United Healthcare |
| Ben Mazza | 300 | United Healthcare |
| Laura Tucker | 300 | United Healthcare |
| Matt Gronert | 300 | United Healthcare |
| Larry David | 400 | Highmark |
| Miller Fink | 400 | Highmark |
| Chris Ravosa | 400 | Highmark |
| Jared Babsky | 400 | Highmark |
| Chris Lauria | 400 | Highmark |
| Luke Skywalker | (null) | (null) |
| Amy Sky | (null) | (null) |
| Laura Moelis | (null) | (null) |

**Cardinality:** 30

## Query5FinalRightJoin

**English Statement:**

Give all Patient names and their discharge date if any.

**SQL:**

SELECT faddmitance.add\_discharged, fpatient.pat\_name, faddmitance.pat\_id

FROM fpatient RIGHT JOIN faddmitance ON fpatient.pat\_id = faddmitance.pat\_id;

**Table:**

|  |  |  |
| --- | --- | --- |
| **ADD\_DISCHARGED** | **PAT\_NAME** | **PAT\_ID** |
| 10-JAN-19 | Sam Beson | 1 |
| 01-MAR-19 | Sam Berenberg | 2 |
| 10-JAN-19 | Nico Agostini | 3 |
| 03-NOV-18 | Tobi Omotoso | 4 |
| 06-JUL-18 | Matt Gronert | 5 |
| 19-JAN-18 | Laura Tucker | 6 |
| 24-JAN-18 | Chris Lauria | 7 |
| 06-DEC-18 | Ben Mazza | 8 |
| 04-MAR-18 | Michael Leitner | 9 |
| 12-MAY-18 | Pat Dilloin | 10 |
| 12-MAY-18 | Ethan Black | 11 |
| 11-JUL-18 | Jack Andrus | 12 |
| 16-MAY-18 | Scottie German | 13 |
| 16-MAY-18 | Jared Babsky | 14 |
| (null) | Laura Moelis | 15 |
| 19-NOV-18 | Amy Sky | 16 |
| 17-NOV-18 | Matt Kretz | 17 |
| 09-AUG-18 | Chris Ravosa | 18 |
| 19-JUL-18 | Miller Fink | 19 |
| 26-AUG-18 | Luke Skywalker | 20 |
| 01-MAR-18 | Han Solo | 21 |
| 29-JUL-18 | Indiana Jones | 22 |
| 24-DEC-18 | Boba Fett | 23 |
| 31-OCT-18 | Chuck Kautz | 24 |
| 01-AUG-18 | Kaitlyn Durso | 25 |
| 02-AUG-18 | Andrew Crawford | 26 |
| 07-AUG-18 | Sarah Crawford | 27 |
| (null) | Larry David | 28 |
| 26-OCT-18 | Jerry Seinfeld | 29 |
| 03-SEP-19 | Arthur Morgan | 30 |

**Cardinality:** 30

## Query6FinalFull

**English Statement:**

Give all Patient names along with Doctor IDs and Names if any.

**SQL:**

SELECT fpatient.pat\_name, fdoctor.doc\_id, fdoctor.doc\_name

FROM fpatient FULL JOIN fdoctor ON fpatient.doc\_id = fdoctor.doc\_id;

**Table:**

|  |  |  |
| --- | --- | --- |
| **PAT\_NAME** | **DOC\_ID** | **DOC\_NAME** |
| Sam Beson | 111 | Bob Kelso |
| Sam Berenberg | 111 | Bob Kelso |
| Nico Agostini | 111 | Bob Kelso |
| Tobi Omotoso | 111 | Bob Kelso |
| Matt Gronert | 111 | Bob Kelso |
| Laura Tucker | 112 | Elliot Reid |
| Chris Lauria | 112 | Elliot Reid |
| Ben Mazza | 112 | Elliot Reid |
| Michael Leitner | 113 | Perry Cox |
| Pat Dilloin | 113 | Perry Cox |
| Ethan Black | 113 | Perry Cox |
| Jack Andrus | 113 | Perry Cox |
| Scottie German | 113 | Perry Cox |
| Jared Babsky | 113 | Perry Cox |
| Laura Moelis | (null) | (null) |
| Amy Sky | 114 | John Dorian |
| Matt Kretz | 114 | John Dorian |
| Chris Ravosa | 114 | John Dorian |
| Miller Fink | 114 | John Dorian |
| Luke Skywalker | 115 | Ross Geller |
| Han Solo | 115 | Ross Geller |
| Indiana Jones | 116 | Rachel Green |
| Boba Fett | 117 | Monica Geller |
| Chuck Kautz | 117 | Monica Geller |
| Kaitlyn Durso | 118 | Chandler Bing |
| Andrew Crawford | 118 | Chandler Bing |
| Sarah Crawford | 118 | Chandler Bing |
| Larry David | (null) | (null) |
| Jerry Seinfeld | 120 | Joey Tribbiani |
| Arthur Morgan | 120 | Joey Tribbiani |
| (null) | 119 | Phoebe Buffay |

**Cardinality:** 31

## Query7Final -Six Table query

**English Statement:**

For every patient give their name and the name of their doctor, nurse, hospital, building, and insurance company.

**SQL:**

SELECT fpatient.pat\_name, fdoctor.doc\_name, fnurse.nurse\_name, fhospital.hosp\_name, fbuilding.build\_name, finsurance.ins\_comp

FROM fpatient, fdoctor, fnurse, fhospital, fbuilding, finsurance

WHERE fpatient.doc\_id = fdoctor.doc\_id

AND fpatient.nurse\_id = fnurse.nurse\_id

AND fpatient.hosp\_id = fhospital.hosp\_id

AND fpatient.build\_id = fbuilding.build\_id

AND fpatient.ins\_id = finsurance.ins\_id;

**Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PAT\_NAME** | **DOC\_NAME** | **NURSE\_NAME** | **HOSP\_NAME** | **BUILD\_NAME** | **INS\_COMP** |
| Sam Berenberg | Bob Kelso | Jon Snow | Monmouth Medical | Marian | Anthem |
| Sam Beson | Bob Kelso | Jon Snow | Monmouth Medical | Marian | Blue Cross Blue Shield |
| Nico Agostini | Bob Kelso | Jon Snow | Monmouth Medical | Marian | Blue Cross Blue Shield |
| Matt Gronert | Bob Kelso | Kit Harrington | Monmouth Medical | Marian | United Healthcare |
| Tobi Omotoso | Bob Kelso | Kit Harrington | Monmouth Medical | Marian | Anthem |
| Laura Tucker | Elliot Reid | Emilia Clarke | Monmouth Medical | Champ | United Healthcare |
| Chris Lauria | Elliot Reid | Sophie Turner | Monmouth Medical | Champ | Highmark |
| Ben Mazza | Elliot Reid | Arya Stark | Monmouth Medical | Champ | United Healthcare |
| Matt Kretz | John Dorian | Peter Dinklage | Jersey Shore | Foy | Blue Cross Blue Shield |
| Chris Ravosa | John Dorian | Tyrion Lannister | Jersey Shore | Foy | Highmark |
| Miller Fink | John Dorian | Tyrion Lannister | Jersey Shore | Foy | Highmark |
| Han Solo | Ross Geller | Samwell Tarly | Jersey Shore | Fulton | Anthem |
| Indiana Jones | Rachel Green | Khal Drogo | Sacred Heart | Foxrun | Anthem |
| Boba Fett | Monica Geller | Richard Madden | Sacred Heart | Hancock | Blue Cross Blue Shield |
| Chuck Kautz | Monica Geller | Jack Gleeson | Sacred Heart | Hancock | Blue Cross Blue Shield |
| Andrew Crawford | Chandler Bing | Sean Bean | Sacred Heart | Dyson | United Healthcare |
| Kaitlyn Durso | Chandler Bing | Sean Bean | Sacred Heart | Dyson | Anthem |
| Sarah Crawford | Chandler Bing | Joe Dempsie | Sacred Heart | Dyson | Anthem |
| Jerry Seinfeld | Joey Tribbiani | Theon Greyjoy | Sacred Heart | Winterfell | Blue Cross Blue Shield |
| Arthur Morgan | Joey Tribbiani | Hodor Bronn | Sacred Heart | Winterfell | Anthem |

**Cardinality:** 20

## Query8Final

**English Statement:**

name the doctors that have at least one patient with the insurance Blue Cross Blue Shield

**SQL:**

SELECT DISTINCT fdoctor.doc\_name

FROM fdoctor, fpatient, finsurance

WHERE fdoctor.doc\_id = fpatient.doc\_id

AND fpatient.ins\_id = finsurance.ins\_id

AND finsurance.ins\_comp = 'Blue Cross Blue Shield';

**Table:**

|  |
| --- |
| **DOC\_NAME** |
| John Dorian |
| Joey Tribbiani |
| Perry Cox |
| Bob Kelso |
| Monica Geller |

**Cardinality:** 5

## Query9Final

**English Statement:**

Get Patient IDs and Names for those who have a lower total bill than Ben Mazza.

**SQL:**

SELECT patient2.pat\_id, patient2.pat\_name

FROM fpatient patient1, fpatient patient2, fbill bill1, fbill bill2

WHERE patient1.pat\_name = 'Ben Mazza'

AND patient1.pat\_id = bill1.pat\_id

AND patient2.pat\_id = bill2.pat\_id

AND bill1.total\_due < bill2.total\_due;

**Table:**

|  |  |
| --- | --- |
| **PAT\_ID** | **PAT\_NAME** |
| 2 | Sam Berenberg |
| 3 | Nico Agostini |
| 4 | Tobi Omotoso |
| 13 | Scottie German |
| 15 | Laura Moelis |
| 16 | Amy Sky |
| 20 | Luke Skywalker |
| 22 | Indiana Jones |
| 23 | Boba Fett |
| 29 | Jerry Seinfeld |

**Cardinality:** 10

## Query10Final

**English Statement:**

Get the Nurse's ID and Name that is first in the alphabetic list of of the other nurses.(by first name)

**SQL:**

SELECT fnurse.nurse\_ID, fnurse.nurse\_name

FROM fnurse

WHERE fnurse.nurse\_name IN

(SELECT MIN(fnurse.nurse\_name)

FROM fnurse);

**Table:**

|  |  |
| --- | --- |
| **NURSE\_ID** | **NURSE\_NAME** |
| 205 | Arya Stark |

**Cardinality:** 1