**Five Business Rules:**

1. Each volunteer will work for a single care center
2. A Patient must have an insurance policy.
3. A Resident patient can only have one visitor per day.
4. Each technician is certified to work with hazardous materials.
5. Each staff member must possess at least one college degree if their job title requires intensive computer tasks.

**Class Descriptions:**

**Facilities:** A Facilities is a place for where the employees and physicians and volunteers of a hospital go to do something for the purpose of their jobs. This is also the parent of the subtypes Care Center and Labs.

**Care Center:** A Care Center is a type of facility where the nurses and physicians take care of the patients for the purpose of taking care of them and making them feel better.

**Bed:** A bed is an object a patient uses for when they are in the hospital for the purpose of resting and to be taken care of.

**Lab:** A Lab is a type of facility where the technicians work for the purpose of doing testing on blood samples and doing tests to check out new types of medication.

**Insurance:** An insurance is a policy a patient has to have to able to go the hospital and for the purpose of being able to payoff the medical bills they incur.

**Patient:** A person who receives treatment from a doctor for any medical issues.

**Outpatient:** A person who receives medical care, but is not hospitalized and does not require for them to stay overnight.

**Resident:** A person who receives medical treatment and needs to stay at the hospital under supervision and stays one or more nights.

**Visit**: Is a point in time where an outpatient is visited by a physician for the purposes fulfilling a the visits purpose.

**Person**: A person is an individual who interacts with Mimi’s GetWell Hospital for the purpose of employment, volunteering, or to receive services.

**Employee**: An employee is an individual who is either a staff, nurse, or technician at Mimi’s GetWell Hospital.

**Physician**: Is a person who is a doctor at Mimi’s GetWell Hospital.

**Volunteer**: Is a person who works for free for a Care Center at Mimi’s GetWell Hospital for the purpose of providing various services.

**ZipLocation**: Is a location in the United States in a specific city and state that is completely unique.

**Nurse:** Person trained to care for the sick or injured that works at an institution which provides medical or surgical services.

**Registered Nurse:** A person trained to care for the sick or injured that works at an institution which provides medical or surgical services. This person has completed a bachelor’s degree in a university and possesses a state certificate that shows they have passed the state nursing exam.

**Technician:** Person employed to work on a facility to perform blood sample testing and research on new types of medication.

**Staff:** People employed in an institution that provides medical or surgical services who do not share roles with employees that specialize in medical work.

**LabAssigned:** Designated research or technical facility for any technician.

**Visitor**: A person who goes to a hospital to see a resident patient

**VisitData**: Is the information of a visitor who visited a patient at the hospital.

**Class Associations:**

A Care Center contains zero to many Beds.

A Bed is contained by one and only one Care Center.

Each insurance insures zero to many patients.

Each patient is insured by one and only one insurance.

Each ZipLocation contains one to many Persons

Each Person is contained in one and only one ZipLocation

Each Physician cares for zero to many Patients

Each Patient is cared for by one and only one Physician.

Each Bed is assigned to zero to one Residents.

Each Resident is assigned to one and only one bed.

Each outpatient is examined by one to many visits.

Each visit examines part of zero or one outpatient.

Each physician sees zero to many visits.

Each visit is seen by one and only one physician.

Each technician works in one to many LabAssigns.

Each LabAssign is worked by one and only one technician.

Each lab assigns one to many LabAssigns.

Each LabAssign is assigned by one and only one lab.

Each Care Center assigns one to many nurses.

Each nurse is assigned to one and only one Care Center.

Each nurse is supervised by zero to one head nurse.

Each head nurse supervises one to many nurses.

Each nurse in charge manages one to many care centers.

Each care center is managed by one and only one nurse in charge.

Each Resident patient receives zero to many VisitData.

Each VisitData is received by one and only one Resident

Each Visitor visits one and only one VisitData.

Each VisitData is visited by zero to many Visitors.

Each Volunteer volunteers at one and only one CareCenter.

Each CareCenter employs zero to many Volunteers.

**Used Denormalization? If So State What You Did And Why? If You Didn’t State That And Why:**

We didn’t use denormalization on Facilities because if we did, we would have so much redundant data from the names and locations of the Labs and Care Centers that the assumed reduction of data retrieval would be trivial compared to the data retrieval of a normalized Facilities.

Denormalization was used on Person since including an entire address would cause some attributes to not depend of the PK. So, we broke up Persons into itself and ZipLocations. This allowed us to have a properly normalized class.

**Attribute Descriptions:**

ZipLocation

* zipCode- a postal service code use to describe an area in the U.S.
* City - is that name of a city in a state in the U.S.
* State - is one of the 50 entities that shares its sovereignty with federal government.

People

* personID -surrogate key for convenience.
* zipCode - part of a person’s address.
* Street - is the street address portion of a full address.
* firstName - is a person’s first name.
* lastName - is a person’s last name.
* Phone - primary number used for contact information.
* DOB - is the date a person was born on.

Employees

* employeeID - surrogate key inherited from People that identifies an employee.
* hireDate - is the date employment began.

Physicians

* physicianID- surrogate key inherited from People that identifies a physician.
* Specialty - is the main expertise of a physician
* pagerNumber - is the contact number used for paging services.

Volunteers

* volunteerID- surrogate key inherited from People that identifies a volunteer.
* facilitiesID - surrogate key used to identify the care center where the volunteer volunteers.

SkillsVolunteer

* volunteerID- key from Volunteers that identifies a volunteer.
* Skill - an ability possessed by individuals relevant to volunteer work.

Patients

* PatientID - the surrogate key inherited from People to identify a patient
* PhysicianID - the number to identify physician in charge of the patient
* medicalID - the number used to identify the insurance of a patient
* contactDate - the date patient contacted hospital

Outpatients

* PatientID - the surrogate key inherited from Patient to identify an outpatient
* visitReason - why they came to the hospital

Residents

* PatientID - the surrogate key inherited from Patient to identify a resident
* Admitted - the date the resident started to stay at the hospital
* facilitiesID - number to identify which facility they are in
* bedNumber - number to identify which bed the resident will sleep in
* roomNumber - number of the room where the resident will stay

Visitor

* visitorID - The identification number for a Resident visitor
* visitorName - The name of the visitor
* visitorPhone - the visitors phone number

VisitorData

* visitorDate - the date in which a person visited a resident
* patientID - the surrogate key inherited from Resident to identify a resident being visited
* visitorID - the number to identify the person who visits a resident patient

Symptoms

* patientID - the identification number, surrogate key, of the patient who has symptoms
* symptom - the list for what the patient feels

Comments

* patientID - the identification number for a outpatient who will recieve comments
* visitDate - the date the patient and physician met
* Comment - any details for the patient from physician

Visits

* PhysicianID- the surrogate key inherited from Physician to identify a physician
* PatientID - the surrogate key inherited from Patient to identify a patient
* visitReason - the reason why you came for a visit
* visitDate - the date the patient and physician met

Facilities

* facilitiesID - The identification number of said facility (surrogate key).
* name - Is the name of the type of facility.
* location - The location of the facility.

Care Center

* facilitiesID - The identification number of said facility (in this case a Care Center and also an inherited surrogate key from Facilities) .
* careCenterType - The type of Care Center.

Lab

* facilitiesID - The identification number of said facility (in this case the facility the lab is a part of and also an inherited surrogate key from Facilities).
* room - The room number of the lab itself.

Bed

* facilitiesID - The identification number of said facility (the Care Center the bed is in and also an inherited surrogate key from Facilities).
* bedNumber - The number of the bed.
* roomNumber - The room number the bed is in.

Insurance

* medicalID - The identification number of said Insurance company (surrogate key).
* insuranceName - The name of the insurance the patient has.

Staff

* staffID - Surrogate key that used to identify the staff member.
* jobClass - The specific job title that a staff possesses.

Degrees

* staffID - Surrogate foreign key used to associate the degree with the staff member.
* Degree - The degree held by the staff member.

Nurse

* nurseID - Surrogate key used to identify the nurse.
* facilitiesID - Surrogate foreign key used to identify the care center where a nurse is assigned to.
* certificate - The certificate obtained by the nurse, allowing them to work as a nurse.
* headNurseID - A nurse that supervises a group of nurses.

RegisteredNurse

* rNurseID - Surrogate foreign key used to identify the registered nurse.
* degree - A degree earned at an educational institution that allows a person to work as a registered nurse.

NurseInCharge

* rNurseID - Surrogate foreign key used to identify the nurse in charge of a specific care center.
* facilitiesID - Surrogate foreign key used to identify the care center that the nurse in charge is in charge of.

Technician

* technicianID - Surrogate key used to identify the technician.
* certification - A certificate that allows a person to work as a technician.

SkillsTechnician

* technicianID - Surrogate foreign key used to identify the technician with special skills.
* skill - The skill possessed by the technician.

LabAssigned

* technicianID - Surrogate foreign key used to identify the technician that is assigned to the particular lab.
* facilitiesID - Surrogate foreign key used to identify the facility that contains the particular lab.
* department - The hospital department that the lab is part of.