

Information Systems and Databases

**Report 2nd Project Assignment**

**Health care center database**

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1. **Create the database**

create table Patient

(patient\_number varchar(255),

patient\_name varchar(255),

birthday date,

address varchar(255)

primary key(patient\_number));

create table Doctor

(patient\_number varchar(255),

doctor\_id varchar(255),

primary key(doctor\_id),

foreign key (patient\_number) references Patient(patient\_number));

create table Device

(serialnum varchar(255),

manufacturer varchar(255),

model varchar(255),

primary key(serialnum, manufacturer));

create table Sensor

(serialnum varchar(255),

manufacturer varchar(255),

units varchar(255),

primary key(serialnum, manufacturer),

foreign key(serialnum, manufacturer) references Device(serialnum, manufacturer));

create table Reading

(serialnum varchar(255),

manufacturer varchar(255),

read\_datetime timestamp,

value float(10,2),

primary key(serialnum, manufacturer, read\_datetime),

foreign key(serialnum, manufacturer) references Sensor(serialnum, manufacturer));

create table Period

(start\_date timestamp,

end\_date timestamp,

primary key(start\_date, end\_date));

create table Wears

(start\_date timestamp,

end\_date timestamp,

patient\_number varchar(255),

serialnum varchar(255),

manufacturer varchar(255),

primary key(start\_date, end\_date, patient\_number),

foreign key(start\_date, end\_date) references Period(start\_date, end\_date),

foreign key(patient\_number) references Patient(patient\_number),

foreign key(serialnum, manufacturer) references Device(serialnum, manufacturer));

create table Request

(request\_number int(10) UNSIGNED,

patient\_number varchar(255),

doctor\_id varchar(255),

request\_date date,

primary key(request\_number),

foreign key(patient\_number) references Patient(patient\_number),

foreign key(doctor\_id) references Doctor(doctor\_id));

create table Study

(request\_number int(10) UNSIGNED,

description varchar(255),

study\_date date,

doctor\_id varchar(255),

manufacturer varchar(255),

serialnum varchar(255),

primary key(request\_number, description),

foreign key(request\_number) references Request(request\_number),

foreign key(doctor\_id) references Doctor(doctor\_id),

foreign key(manufacturer, serialnum) references Device(manufacturer, serialnum));

create table Series

(series\_id int(10) UNSIGNED,

series\_name varchar(255),

base\_url varchar(255),

request\_number int(10) UNSIGNED,

description varchar(255),

primary key(series\_id)

foreign key(request\_number, description) references Study(request\_number, description));

create table Element

(series\_id int(10) UNSIGNED,

elem\_index int(10) UNSIGNED AUTO\_INCREMENT,

primary key(series\_id, elem\_index),

foreign key(series\_id) references Series(series\_id));

create table Region

(series\_id int(10) UNSIGNED,

elem\_index int(10) UNSIGNED,

x1 float(4,3),

y1 float(4,3),

x2 float(4,3),

y2 float(4,3),

primary key(series\_id, elem\_index, x1, y1, x2, y2)

foreign key(series\_id, elem\_index) references Element(series\_id, elem\_index));

1. **Querys**

**1. Query to retrieve the name(s) of patient(s) with the highest number of readings of units of “LDL cholesterol in mg/dL” above 200 in the past 90 days**

**2. Query to retrieve the name(s) of patient(s) who have been subject of studies with all devices of manufacturer “Medtronic” in the past calendar year**

1. **Triggers**

**1. Trigger to ensure that a doctor who prescribes an exam may not perform that same exam**

**2. Trigger to prevent someone from trying to associate a device to a patient in overlapping periods. Additionally, when this event occurs, a text message “Overlapping periods” will be thrown**

1. **Function**
2. **Populate tables**
3. **Expected Results**