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CS 316 - Course Project: CAARE Medical Records Database

Milestone #1

Description:

Our application collects, organizes and keeps track of patient medical records over time for CAARE, a non-profit organization that services the Durham community by providing medical care without charge or co-pay. Patient data such as height, weight, blood pressure, blood glucose levels and A1Cs is input manually by medical care professionals, and that information is stored and used to compute important patient information such as BMI changes, glucose changes, and blood pressure changes over time.

The goal of the application is to replace the paper records currently used by CAARE. This is important because paper records don't allow for tracking progress over time - without that functionality, it is very difficulty for CAARE to assess the effectiveness of their care, and without being able to prove effectiveness of care it is nearly impossible for them to receive government stipends or grant money. This results in understaffing and lack of resources that ultimately impedes their ability to give the best care possible to their patients.

More on CAARE can be found here: http://www.caareinc.org/

The application cannot use real data currently as it contains confidential patient information. Thus, "fake" datasets are being used to populate the database, and queries can be conducted to find important data such as blood pressure changes, glucose changes, BMI changes, height, weight, and many more attributes following the schema of the real data. The data is updated through the web application interface in which doctors can add new information either during each new checkup or when old data needs to be fixed. A CheckupInfo table contains new information for each checkup date currently, and will soon have a timestamp as well to be even more accurate. The data that we are modeling is assumed to fit the schema and constraints given to us by CAARE.

Please see attached html files, SQL files, ,out files, and .txt files.

Schema:

Table 1 – Patient Info

- Patient ID

- First Name
- Last Name
- Date of Birth
- Height
- Weight
- Gender
- Allergies
- Medication History (NULL if none) (Could point to previous medications in Checkup table)

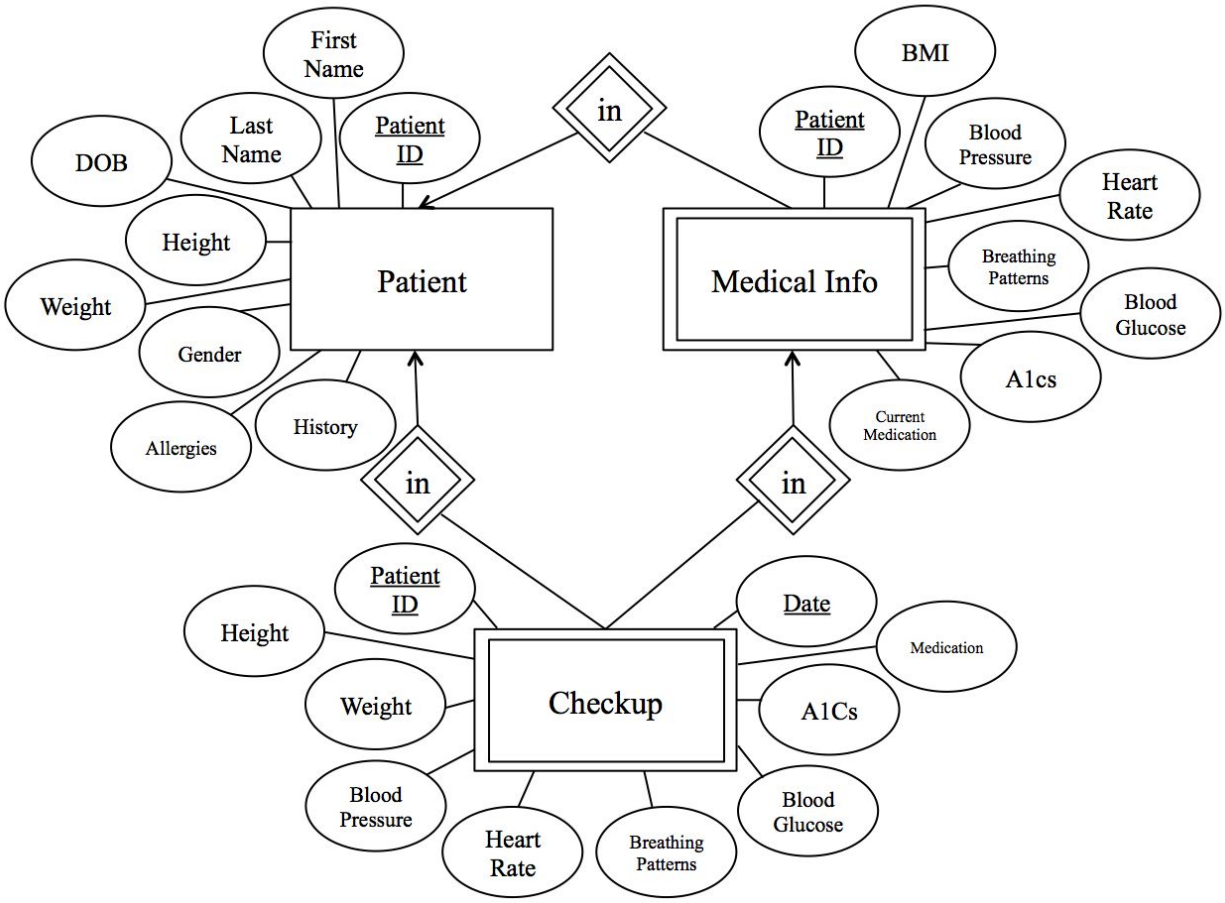
Table 2 – Patient Medical Info

- Patient ID
- Current BMI
- Current Blood Pressure
- Current Heart Rate
- Current Breathing Patterns
- Current Blood Glucose Levels
- Current A1Cs
- Current Medication (NULL if none)

Table 3 – Checkup Info

- Patient ID (Foreign Key)
- Date
- Height
- Weight
- BMI Change
- Blood Pressure
- Blood Pressure Change
- Heart Rate
- Breathing Patterns
- Blood Glucose Levels
- Glucose Change
- A1Cs
- Current Medication (NULL if none)

E/R Diagram:



Milestone #2

E/R Diagram and Tables have not been changed.

Platform: We have decided to use node.js for our webapp, because of previous experience and knowledge. A preliminary version is currently up at https://caare.herokuapp.com/

Changes made to database: updated the type of entities (INT for measurement, for example).