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Project Proposal

Opportunity/Problem

Alzheimer's care involves a huge amount of data collection and analysis. In an ideal setting, each patient is monitored and checked in on multiple times per day. Unfortunately, many care centers are still on a pen and paper system, and workers often spend a large part of their time organizing and entering this data. Even if the system is electronic, it is usually no better than a few excel documents that come with all the problems that a DBMS can solve.

Application Description

This application will serve as a relational DBMS for the scheduling and data collection of the patients in an alzheimer's care center. It will consist of entering, storing, and exporting data on the day-to-day activities of Alzheimer's patients. The most important (and challenging) feature of this application is variability. Alzheimer's care is a constantly growing field, and a DBMS supporting it needs to be flexible enough to afford for changing research initiatives and goals. Data views and analysis are outside the declared scope of this application, though rudimentary viewing may be a part of the final product.

Industry

Data collection in Alzheimer's care is done with the goal of monitoring the state of patients and adjusting general care practices to their individual needs. While sophisticated systems exist for this. Smaller, less-connected centers (as well as people practicing home care) do not have the resources to support such systems.

Client Definition

This application's client will be a single care center made up of faculty who are proficient in using but not knowledgeable about computers and applications. It is expected that one person would be kept on staff to maintain the application and train new aides, managers, and researchers.

ER Outline and Explanation

The application will consist of the following entities:

- Aides: workers who care for patients
- Patients: Alzheimer's patients in care

- Outings: any time a patient leaves their room
 - Activities: activities for which the center is capturing data
 - [Variable data tables]: see below
 - Locations: list of locations where activities can occur
- Checkins: data collected by aides at the beginning and end of each day

Relationships

- Aides are connected to the patients they work with and the outings they take patients on.
- Patients are related to the data collected about them (outings and checkins) as well as their aides.
- Activities are related to their outings, the data collected during them, and the location at which they occur.
 - Locations and variable data tables are only related to activities
- Checkins are related to the aides and patients whose data they contain.

On variable data tables: because the research underway could be different at any given time in a center, the data collected must evolve as the research does. The most unique feature of this application will be to afford for such collection.

Business Rules

The application will adhere to the following business rules:

- Each patient must be assigned at least one aide.
- Each aide must be assigned to three or less patients.
- Outings occur at one location and consist of at least one activity.
- Outings must be related to exactly one patient and one or more aides.

Data Acquisition

Being a medical field, real Alzheimer's care data is not easy to acquire. *Realistic* data, on the other hand, should not be too difficult. This team will contact centers such as Wesley Enhanced Living for assistance in this, but if no other options are available, example data can be acquired from past research endeavors.

Research Sources

"Alzheimer's & Dementia - What We Know | Research Center." Alzheimer's Association. N.p., n.d. Web. 16 Feb. 2017.

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