HHMS - Home Health Monitoring System

- Date: 2020.10.01
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Overview

1. Problem Statement
2. Understanding of Project
3. Stakeholders

I. Problem Statement

Project Problem

Disadvantaged individuals in such a position that they cannot reliably care for themselves (and thus require the aide of assisted living)

Example Scenarios

- How will the equipment/sensors work with each other and communicate with the patient's family member
- Has the patient moved in the last hour?
- Has the patient been to the restroom in the last 3(?) hours
- Was there a concerningly loud noise in the home?
- Has the patient accidentally left an exterior door open for an extended period of time?
- Is the temperature of the home appropriate?
- Has the patient taken their medication(s)?

- What is the body temperature of the patient?
- Has the patient's stove been left on for too long?
- How much water has the patient drank for the day?
- Has the patient bathed?
- Is their a need for a live view of the patient when the family member/guardian desires?

II. Understanding of the Project

Project Description

Open Source Home Health Monitoring System with an API to ~~allow~~ encourage extensibility to third-party devices

Outcomes/Deliverables

- ECE Graduates: arguably the most important
- HHMS
  - Connector Software
  - API to attach new instrument
  - Demonstrable instruments (likely outsourced)
  - Machine Learning regarding Worrisome Information
  - Documentation for API and Project
- Project Demonstration and Presentations --> UAB Science Fair

III. Investigation

Stakeholders

External Stakeholders

- Disadvantaged/Dependents
  - Elderly
  - Sickly
  - Physically/Mentally Handicapped
  - “Disadvantaged”: broad, near useless term
    - Those restricted in their daily living such that they require a caretaker and constant checking for survival. (?)
- Caretakers (of Disadvantaged)
  - Family/Friends/Loved Ones
    - Responsibility differences? (IE parent

    - Responsibility differences? (IE parent caretaking child vs child caretaking parent)
    - Guardianship vs. Non-Guardianship
  - DIY-ers(?)
  - Specific Examples
    - Myers
    - Terry
- Designers of Health Devices
  - Conformance to Regulations/Interfacing

Stakeholders

Internal Stakeholders

- Senior Design - Mirborzorgi: Acting as representative for the school/department
- Project Mentor - Myers
- Ourselves: as one of the notable work products is our own training in the engineering design process, we have significant personal stakes in learning

Use Cases

Goals

ID	DESC
GO-01	

Requirements

TBD: speak with Myers

ID	DESC
CR-01	

Constraints

ID	DESC
CO-01	Budget of $800

Credit

- Engineering Design, 5th Ed. Dieter & Schmidt.
- Wikibooks - Problem Statements - https://en.wikibooks.org/wiki/General_Engineeri solve problems.,a description of the problem.&te between the engineering,of making a problem st
- Engineering guide to writing correct user stories services/engineering-guide-to-writing-correct-use
- Define the Problem - https://www.sciencebuddie process/engineering-design-problem-statement
- Assisted Living
  - https://en.wikipedia.org/wiki/Assisted_living
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