

# Project Milestone

Andy Vu, Brian Liu

February 27, 2018

## 1 Abstract

### 1.1 Background

In summary, this is a simpler version of a symptom checker that uses a watered-down disease ontology for the following instructional purposes:

- better visualizing diseases,
- observing an easy to understand and modify disease ontology, and
- having a less powerful but more understandable tool.

### 1.2 Methodological Approach

We plan to use OWL, Protégé, and Python with a Tkinter GUI.

### 1.3 Results

None, as we are behind schedule.

### 1.4 Discussion

We plan to meet much more often and to visit TA Office Hours as much as possible.

## 2 Background/Motivation

Web services such as WebMD's symptom checker are helpful modern tools that allows anyone on the web to type in their symptoms and see what diseases match their inputs. Although they have been criticized as overly broad with users self-diagnosing themselves with rare diseases, they can be helpful tools to see what the possible diseases are for different symptom sets. Our project aims to replicate some of this functionality in a disease ontology capturing the 50 most common diseases patients have.

As a simpler version of more complicated disease ontologies used in clinical practice and in research groups, this project is less powerful but more understandable. It can be used for instructional purposes to better visualize related diseases, to expose students to some of the most common diseases facing patients, and to observe an easy to understand and modify disease ontology.

## **3 Methods**

### **3.1 Ontology**

The tools we plan to use to model the ontology are:

- OWL
- Protégé frames
- Python UML Diagram (possibly)

The tools we plan to use to access the ontology are:

- OWL API
- Python Data Structure

### **3.2 Problem Solving Methods**

We plan to use the following problem solving methods:

- OWL reasoner
- Python program

### **3.3 Evaluation**

We have not yet fleshed out which evaluation methods to use.

## **4 Results**

There are none yet, as the project is still in an early stage, much behind schedule.

## **5 Discussion/Future Work**

The main impetus is to flesh out the ontology to work in OWL and Protege, and to generate a UI that allows users to answer questions concerning their diseases and conditions. As we are behind track and schedule, we plan to visit lots of office hours henceforth.

## 6 References

### References

- [1] Centers for Disease Control and Prevention: Diseases and Conditions, Popular Health Topics,  
<https://www.cdc.gov/diseasesconditions/index.html>

## 7 Division of Labor

The proposed division of labor is the following:

- Andy
  - Handle GUI and user interaction
  - Poster
- Brian
  - Data gathering of different diseases
  - Digital construction of ontology

## 8 Appendix/Program submission

All files for the project can be found here: <https://github.com/bliutwo/disease-ontology>