University of Leicester

PROJECT DESCRIPTION

CFS username: se146

Last name: Ette First name: Shashidar

Project title: Using Games Technology to Mine, Analyse and Visualise Healthcare Data
Note: Decision of using games technology will be reviewed at a later stage.

Project description (typically 100 words):

The main motivation for the project is to develop a methodology to analyse the healthcare data and generate insights. Although there are systems which process the healthcare data in isolation, they lack in correlating the data between 2 related sets. The purpose of this project is to develop a model which can be used to analyse the healthcare data based on a data model and visualize the correlations in more intuitive ways using modern technologies.

As part of the project, there are two data sets considered as a pilot in order of priority.

- NHS prescribing data (UK)

- National Inpatient data (US)

As a scope of the project, for NHS data the scope will be prescription data for practices around Leicestershire City.

In addition to the above data, there are additional data sets available for demographic information from Public Health Profiles and NHS Information Service portals. These additional data sets could be used in conjunction prescription data to generate insights.

Some of the topics under consideration are:

- Understand cost variation between practices

- Analyse prevalence for certain drugs

- Discover correlation between volume of patients with volume of prescription

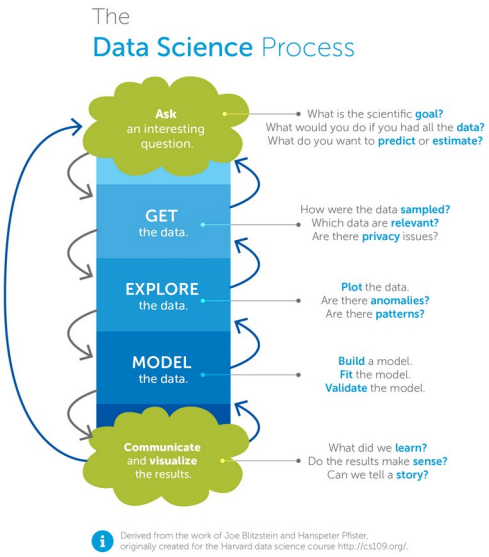
- What proportion of practice population has diabetes, hypertension and heart problems and how does this affect prescription practices?

- Present cumulative view of combined data sets

- Provide practise level insights with respect to prescription as compared to regional and national data

---

As a project we will follow data science process detailed below (ref: class-central):



List of requirements (objectives):

Essential

- To research and gather data sets such as the prescribing data and health profile related data sets for the clinical questions under consideration
- Define data sets and the parameters for consideration
- To prepare localized data sets for pilot
- Explore the data sets with reference to clinical questions under consideration
- Explore and generate correlations of data sets
- Develop a methodology and generate a model to normalize, visualize and correlate the data
- Visualizations for correlations
- Develop a system of architecture which is user-friendly can be used to query and visualize the data.
- Export the correlated data in visually rich formats

Recommended

- Build a technique to predict the demand for volume for a certain drug

Optional

- 3D Visualization for multiple correlated data sets

Date: 16-02-2018