Final Project INFO 5100

An Integrated View of Healthcare Data

**Due Date: Dec 9 at 11:59 PM**

The objective of this final project is to test your ability to address problems of extreme complexity from inception to full implementation.

You are required to look at the problem integrating data coming from different courses in the healthcare system. Biogen is a bio-technology company of global scale with focus on the development and marketing of new drugs for treatment of disease in healthcare patients anywhere in the world. The company owns subsidiaries manufacturers in chemical compounds, drugs, clinical trials, as well as having access to healthcare and hospital facilities where treatment is administered. The company owns huge amounts of data in all areas for the healthcare value system. The company wants to understand the connection between the chemical compounds (active ingredients used to manufacture drugs) and treatment of certain disease. In other words, an active chemical compound effective in targeting a certain gene in a disease, will the chemical compounds be effective in targeting other diseases that share the same gene? The company wants to build a big data platform and do analytics to analytics on data it owns in all phases of the healthcare value chain from chemical compounds to all the way to patient’s treatment and recovery.

Your job is to come up with a prototype system and a proposal to Bio-gen explaining to them how they could accomplish such a gigantic task. Use the system methodology we developed in the class to build an integration platform that encompass all facets of Bio-Gen that are involved in the value chain (see figure below) to establish an eco-system that glue together all its data assets.

1. You can work in a team of one, two, or three. Each member of the team must be responsible for full implementation of programmed modules that are working.
2. You must deliver a fully functioning application involving multiple enterprises, organizations, countries, collaboration of people involved as creators and consumers of the clinical data.
3. Must implement a data model that starts with chemical compounds, drugs, clinical studies, medications, patient treatment history.
4. Must build analytics with dashboards to show cause effect relationships.

