**INFO 5100 Application Engineering and Development**

Final Project Statement

The purpose of this project is to provide specific instructions to students who are having difficulties conceiving of an application of IOT on their own.

Develop an IOT application that will enable a city to monitor the vital signs and other health conditions of its population (cancer, diabetes, etc). The city residents are required to participate in this initiative. They will be using their phone devices to enter their vital signs at regular intervals. Residents will be given sensors to install in their homes to monitor and broadcast the quality of air and temperature in the house at different times of the day. In addition, the city will install quality of the air sensors in different parts of the city to monitor air quality as well.

You are required to build a swing application to simulate how IOT works for smart city applications. The social benefit here for the city to figure how to allocate its funds for improving the quality of life for its citizens. Since the time is limited it is okay to use pre-prepared data points for all the sensors. Or you can use random number generators for the data points. Each of the points must be within a specified range consistent with the specific data type.

The following are some ideas for what we recommend you add:

1. Use the Eco-system model to implement the following 3 different use-cases such as the user, Health official, Mayor’s office. Two dashboards with summarization, averages, its. For example, for a particular neighborhood, what is the average blood pressure at any given time, etc.
2. Show some kind of communication between people in different roles. For example, health officials might want to warn the Mayor’s office in case a health crisis in the community. The local EPA office might want to warn the community (targeting those of high risk) that the pollution level is at abnormal levels and for those with breathing problems are asked to stay home.
3. Any additional ideas you might see creative or innovative such as analytics of any cause-effect relationships between and health and quality of air in the house and the city.

**The deliverables,**

1. The complete application
2. Object model for the smart city application
3. Presentation
   1. The problem statement
   2. Approach
   3. Implemented Features
   4. Architecture (roles and responsibilities)
   5. Object model of the smart city application
   6. Screen shots of the 5 most important screens in your application