**Homework 5, Smart-City Designs and the Internet of Things Applied to The Framingham Heart Study.**

**Due, Oct 16.**

The objective of this assignment is to drill deeper into the issue of computing using object model design. In this, we will advance our understanding of smart city concept. In addition, you must strengthen your programming and critical and problem solving skills.

Framingham is the largest town in Mass with a diverse computing of inhabitants. The Framingham Heart Study is a world famous institute that tracks heart disease in a population of 5000 people with their children and grand-children. All of the world-wide advances in the prevention of heart-disease are the result of this study.

With the advent of new data engineering techniques and the pervasive nature of mobile devices, we want to see if the Framingham Heart Study can benefit from such advances. Your job is to apply the smart city designs and internet of things ideas we developed in class to the Framingham Heart Study.

In this exercise, develop qualify-of-life metrics that will speak to cardiac health of individuals. Assume that individuals, children, and grand-children will use their mobile devices to record their lifestyle and environmental conditions in their surroundings. The first measurements to include will be the vital signs of the individuals in the study and assume that will be automatically recorded though the individual’s mobile device. One important use case to include is assigning a Risk Score to individuals (Ref: Framingham Risk Score.) This will require that you extend your person and patient profiles to incorporate other attributes such as exercises, smoking, age, gender, etc.

There is no UI for exercise. You must use the command line to run your program. For data-generation, you must use some kind of random generators to create a random population with with all values generated randomly.

This is a team oriented exercise. You must work in a team of three. If you have a problem joining a team, please let us know. If a team member is not constructively contributing, ask them to leave. All of you will receive one grade regardless.