BIL 101 – Introduction to Computer Science

PROJECT

Important dates:

- **11.11.15 is due for the proposals**
- **02.12.15 is due for the final reports and posters**
- **16.12.15 is the date of oral presentations, poster presentations and potluck party**

Your task is to design (no implementation is required) a system to solve a problem selected by you within the scope of one of the following 4 topics (other topics are possible with the consent of Dr. Sevilgen). The system must include both hardware and software components. The examples are just to give you an idea. Note that innovative problems and solutions are preferred.

- **Security**
  Examples:
  - Identification and authentication system of a factory for its workers. (The system should include some means other than id cards such as a biometric system)
  - An innovative surveillance system of a shopping mall.
- **Health**
  Examples:
  - Patient information management and medical condition tracking system.
  - An innovative diagnosis system.
  - Technical aids for elder or disabled people.
- **Transportation**
  Examples:
  - An efficient parking system with for example vehicle identification.
  - Innovative payment systems for a transportation (train, bus or airways) company.
- **Education**
  Examples:
  - Innovative education system for a collage such as distance education.
  - Student's affairs system a university including assessment methods.

You will select a topic, find a problem and design your systems in groups of 9 students. The groups will be announced through Moodle system. You need to schedule and realize several meetings to discuss on topics, to select a problem and to design a solution. You need to research on the topics, the systems built to solve a problem in these topics and the technologies makes the solution possible. So, distribution of the work load between group members is a must to complete the project successfully.

If there is a non-contributing member of the group, with the more than 70% majority of votes, the group have the right to get the member out of the project group. These members will get a grade of zero.

Each group will submit a proposal and a final report. The proposal report should be at most three pages long and include at least the following information:

- The problem definition.
  - Importance of the problem.
  - Define and explain the users of the system.
  - Previous solutions for the problem. What do the systems do?
- Enabling technologies
  - How are the technologies used in the current solutions
- Proposed solution
  - High level design

The final report should include all the details of your work. There is no upper limit for the number for pages. It should include at least the following information:

- The problem and detailed explanation of the system.
  - Problem definition. Importance of the problem.
  - Define and explain the users of the system.
  - Previous solutions for the problem. What do the systems do?
- Enabling technologies
  - State of the art
  - How are they used in the current solutions
- Define the requirements.
  - Inputs requirements
  - Output requirements
  - Data storage requirements
  - Processing requirements
  - User interface
- Details of the proposed solution and design
  - User Interface
  - Modules and sub modules of the system
  - The technology used for each module. How is it used?
  - Performance expectations.

Each group should prepare a poster explaining their project, as well. The posters will be presented during final potluck party. You should use report and poster formats, "Örnek Seminer Rapor Formatı" and "Poster Formatı" at http://www.gtu.edu.tr/kategori/1786/0/display.aspx?languageId=1.

After the submission of final reports, six best projects (top three based on innovation and top three based on design quality) will be selected for oral presentation. These groups will have the opportunity to present their work before the party.