ECE4574 FA23 – Prof. Jones – Course Project

Multiple due dates (see below) – All work is due at 11:59 PM via Canvas

For the semester-long course project, I want you to develop a software system for an engineering application or use. As an Engineering application, your project should involve some form of control, data analysis, computation, performance requirements (throughput or accuracy, for example) or other engineering aspect. You are working in teams of three or four; the teams will be assigned in Canvas as Groups.
For this project, you MUST use the scrum methodology as I have explained it. Of course, there are variants of scrum in use, but it's required that you use the following approaches:

a) Product backlog and sprint backlogs
b) Three 3-week sprints
c) Scrum meetings (for this course, I am OK if you only have three actual meetings per week, to ask the three questions, but exchange status by email on other days of the working week).
d) Sprint wrap-ups and retrospectives
e) Most importantly, incremental deliverables at the end of each sprint

Here are the important due dates, and some information on what I am looking for:

- Project Proposal – Group assignment
  - 25 points; the Scrum Master submits on behalf of the team
  - A single Word document containing the following information:
    - Team name, names of members and title of project
    - Name of the designated Scrum master
      - Which team member will run the meetings and make sure everything is recorded?
    - A one-page description of the desired result (the completed project), its use and why you want to do it
    - Project backlog: the list of requirements for the entire system
      - Include both functional (what the code will do) and non-functional requirements (for example, what language(s), what platforms or APIs, what data, etc.)
      - Use good form for your requirements
      - Remember to include priority
    - Your sprint backlog for sprint 1
      - What requirements will you tackle in the first sprint, who will do them in what order
    - What tools and/or communication methods will you use to track your work
      - git for code control? Slack, a Wiki or something else for communication? Email?
  - <u>Due Monday, September 11 at 11:59 PM</u>

- Sprint 1 wrap-up report – Group assignment
  - 10 points; the Scrum Master submits a single document for the team, containing:
    - Sprint wrap-up: address each item on the sprint backlog: did you get it done? How did it go? Any changes to the product backlog? This is best done by adding a "disposition" column to the sprint backlog.

- Sprint retrospective: any changes needed to how you are doing things?
- Your sprint backlog for sprint 2

▪ Due Monday October 9 at 11:59 PM

➢ Sprint 2 wrap-up report – Group assignment
- 10 points; the Scrum Master submits a single document for the team, containing:
- Sprint wrap-up: address each item on the sprint backlog: did you get it done? How did it go? Any changes to the product backlog?
- Sprint retrospective: any changes needed to how you are doing things?
- Your sprint backlog for sprint 3

▪ Due Monday, October 30 at 11:59 PM

➢ Sprint 3 wrap-up report – Group assignment
- 10 points; the Scrum Master submits a single document for the team, containing:
- Sprint wrap-up: address each item on the sprint backlog: did you get it done? How did it go? Any changes to the product backlog?
- Sprint retrospective: any changes needed to how you are doing things?

▪ Due Monday, November 27 at 11:59 PM

➢ Brief project presentation
▪ 30 points; all team members participate equally
▪ Walk through and ideally demonstrate your project
▪ I would like 3-6 slides to use as a framework for your presentation
▪ These will be submitted via Canvas by November 27; all team members submit the same
▪ Occurs on November 29, December 4 or December 6 during class (schedule to be determined randomly)

➢ Project final report
▪ 50 points; each team member submits their own report
▪ The final report should contain:
- A one-page executive summary of your final deliverable
  - ♦ What does it do? How is it used? What are the benefits from its use?
- Summarize the project:
  - ♦ How did the final deliverable work out? Many differences from what you planned?
  - ♦ Your reflection on the process of doing the project: methodology, teamwork, anything
- A copy of all code written in your project, pasted in plain-text as an appendix
- An attached zip file of all of your code (source and project files only, no compiled code or libraries). Of course, all team members submit the same code.

▪ Due December 7 at 11:59 PM

IMPORTANT NOTES:

Each team member is expected to contribute to the development. Be SURE and insert comments in the code to record who wrote which class, function or file. All source and header files MUST contain a good file header. Here is one example, but other formats are acceptable:

```
/*  main.cpp    Creed Jones     Virginia Tech       August 22, 2020
 *  This is the main app for the HW1 distribution display project
 *  Qt creator, using UI form design
 *  Modified August 29, 2020 to add bounds checking
 */
```

All submissions are to be a SINGLE WORD OR PDF FILE, with the exception of the final report which will be accompanied by a zip file of all of your code (source and project files only, no compiled code or libraries).

What is the right size or scope of a project? The task should be about the effort of three homework assignments for each of the team members. So, roughly, something about ten times as involved as one of the homework assignments.

Note that each team member submits something for each deliverable. In most cases they are the same, but don't fail to submit your work.

You are encouraged to rename your team if you wish.