Final Project

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This course, unlike other courses, has a major component based on team work using Agile methodologies. Agile will be taught in the course. You will be taught in a timely manner all concepts necessary to manage a software project using Agile.

For this project you need to work on teams of minimum 5 students and maximum 7 students. Please start forming your teams quickly. Before joining a team, please do consider the following and choose wisely:

- Once you join a team, you will work in this team for the rest of the semester. There is no option to go back and create/join another team. In the extreme case the need for this arises, keep in mind that you will lose the mark for the components of the project that have been due before the date you created/joined a new team.
- Keep in mind that the evaluation scheme has been built around the concept that everyone should contribute approximately equal amounst of work toward the project. If some members of the team will underperform, this will affect the quality of the work for the whole team.
- Additionally, different students have different objectives. Some people simply want just to pass the course. Some people want to earn 100%. Some may aim to something in between. Please do select a team whose members have goals similar to yours. Keep in mind, the evaluation scheme does not favour heroic individuals who want to earn 100% by doing all the work themselves. This course aims to educate you to work in a team. So your best bet to earn a good grade in the project, is to motivate members of your team put an effort comparable to your effort.

Invitation link

Declare your team members in the file `team.md` which you need to put in your repository folder `doc/sprint0`. The deadline to declare your team is Jan 22,2021.

At the same time (deadline Jan 22, midnight!), sign up for Jira.

We will enforce this by checking the initial commit date on the file `doc/sprint0/team.md` and your Jira signup. This deadline is imposed so we can set up your Jira team account by Monday, Jan 25, so you can start filling in user stories there. Any delay in declaring your team, will delay the whole process and impact your grade on the sprint0.

At the same time, we need your team to create a discord chat and put an invitiation for us at the bottom of `team.md`. Your TAs will regularly join your team meetings and you instructor may join your meetings on occasion. An important piece of information in `team.md` is a quick way how your team mates can get a hold of you (phone number, whatsapp, etc). This is very important, because if you become nonresponsive at key moment, your team may loose marks. We do understand that sharing personal info is not preferred by some people, but here we are in a work environment. Remember, your repos are private so no one but your team mates will use it. Instructors and TAs will NOT use it to contact you. The only way we will contact you is your shcool email.

Here is a template for `team.md`:

```
Full Name          UTORID     Student ID Email (utoronto only)    Best way to contact
=============      ======     ========   =================        ===========
Software Engineer  seng123    12345678   seng@mail.utoronto.ca   (phone number is best, but other ways are OK)
```

...

`(Your discord chat invite goes here)`

Keep in mind phone number will not be used by instructors. It is necessary so your team mates can contact you in case you become nonresponsive to team work requests. It is mandatory you provide a way how you can be contacted. In case you decline to offer your team mates a way to contact you quickly, our suggestion is that no team should hire you.

The weight of the **Final Project** is 45% of your final grade. As such, this project will be completed in phases, and it does include a presentation and a peer evaluation component. Three key requirements are:

- The topic needs to be one of the topics offered in the course website. No other topics will be accepted.
- Your solution must conform one of the following software architecture paterns:
  - MVC: `https://en.wikipedia.org/wiki/Model-view-controller`
  - Microservices: `https://martinfowler.com/articles/microservices.html`
  - Three-tiered architecture: `https://www.linuxjournal.com/article/3508`
- Architectural patterns will be covered in lecture notes in the first few of weeks.
- Your solution must be produced using some kind of full stak (MEAN, MERN, etc). The reason for that requirement is that your solution must include a back end, fron end, and software that connects both front end and back end. See here: `https://www.w3schools.com/whatis/whatis_fullstack.asp`.

Phases

- Sprint 0: Start the project by identifying key objectives of the project.
  - Weight: 5% of your final mark.
  - Due date: Jan 29, 11:59pm, on Github.
- Sprint 1: Complete Sprint 1.
  - Weight: 9% of your final mark.
  - Due date: Feb 12, 11:59pm on Github. Software presentations: During tutorials Feb 12.
  - Peer eval: Quercus, Feb 12, 11:59pm.
- Sprint 2: Complete Sprint 2.
  - Weight: 9% of your final mark.
  - Due date: Feb 26, 11:50pm, on Github. Software presentations: During tutorials, Feb 26.
  - Peer eval: Quercus, Feb 26, 11:59pm.
- Sprint 3: Complete Sprint 3.
  - Weight: 9% of your final mark.
  - Due date: Mar 12, 11:59pm on Github. Software presentations: During tutorials, Mar 12.
  - Peer eval: Quercus, Mar 12, 11:59pm.
- Sprint 4: Complete Sprint 4.
  - Weight: 9% of your final mark.
  - Due date: Mar 26, 11:59pm on Github. Software presentations: During tutorials, Mar 26.
  - Peer eval: Quercus, Mar 26, 11:59pm.

- Project Presentation:
  - Weight: 4% of your final mark.
  - Due date: Apr 9, presentations to be held Apr 9, detailed schedule TBA on the course web site.

Deliverables For Phase 0

All deliverables should be submitted to the team's repo, under 'doc/sprint0'.

team.md

- Using the invitiation link, register your team.
- Registration due date is Jan 22.
- Commit and push team.md as specified above.

team-contract.pdf

Please do prepare and sign a team contract. Sample contract is provided on the course website.

summary.md

- Short document (2- 5 min' read)
- Identifies project objectives as well as key users, key use cases, and key usage scenarios.
- Intended audience:
  - Your instructors and TAs. We expect to get a good understanding of your planned project, based on this document alone.
  - Your team. You should use this document in the next phase(s), when deciding how to prioritize work
- You may want to follow the template as mentioned here `https://www.uie.com/articles/short_form_creative_brief/`

competition.md

- Short document (2-5 min' read)
- Identifies existing products (and possibly provide URLs) that solve the same (or similar) problem as yours.
  - How is your product different?
  - If your product is better for specific users and/or specific scenarios,
    - Who are the users and/or what are the scenarios?
    - Why do you think the competitors didn't focus on these users and/or scenarios? And, what wouldit take from them to do so?

Personas.pdf

- 2-3 personas
- These are detailed descriptions of the key users you mentioned in `summary.md`
- The personas must be preprared in PDF format. Each persona must be written on an individual page.
- The format should follow `http://www.agilemodeling.com/artifacts/personas.htm`.

Product Backlog `PB.md`

- Identify the most important user stories.
- How many user stories? We are not sure. Enough to give us (and you) a good sense of the scope of the project.
- As a guideline: a user story (usually) corresponds to a feature in your project.
- Any number between 3 and 20 might be appropriate.
- Each user story must obey the format stated in the lecture and it must also contain the criteria of satisfaction.
- For this stage, there is no need to estimate user stories.
- Additionally, all stories in PB.md, need be recorded on Jira.
- Keep in mind, PB must be ready by Jan 29, tutorial time so you can start Sprint 1 planning.

User Experience/User Interface

- An artifact that gives a visual indication of how you imagine the user interface of your system will implement the key scenarios listed in your short form creative brief.
- Focus on the logical flow of the application and the user's experience while going through the key scenario(s), don't worry about "making things pretty" or getting the widgets exactly right.
- Use mockups, storyboards, wireframes, fake command-line session, etc.
- Feel free to use tools like `http://www.storyboardthat.com/` etc.
- Use whichever format you'd like, just make it easy for the TA to evaluate.

Your definition of done: `done.md`.

- The whole team need to agree as to what "done" means for the features you will implement.
- We have standard and additional definitions of done.
- Note the definition of done applies to all user stories.

Process: `process.md`

- Short document (2-5 min read)
- Reflect on how your team worked together.
- Here are a few questions that can guide you
- How did you organize the team? Which tools did you use, if any?
- How did you make decisions?
- How did you define priority and/or points of user stories? How many rounds of voting (on average) did you need to come to a consensus for the point estimate?
- How frequently did you meet?
- What lessons should you take forward to the next phase?

A Note About Evaluation

This phase of the project is very different than what you are used to in other CS courses, so we thought we should make a few extra notes.

- The deliverables may seem "light", but require a lot of thinking.
  - The main point is to articulate the value of your project.
  - This phase is crucial to the success of your project, it It will be difficult to "go back and fix it" later during the term.
  - The evaluation will be based (more or less evenly) on presentation and content
- Presentation
  - Clear and concise writing
  - If you can convey the same information with less words, that's great.
  - Good use of diagrams, links, visuals and other tools
- Content
  - It actually needs to make sense
  - Must answer the questions to the questions posed in the above deliverables.