Term Project Assignment

Project Guide

Unlike other assignments, in the term project you may be richly collaborative in terms of helping each other, including viewing other students' code to help them debug, openly discussing designs and algorithms, etc. Using resources wisely is an important aspect of this term project. However, you still must conceive and understand your entire design and code. Within your team, the work must be shared equally.

You may use any materials, including source code, designs, images, text, sounds, or anything else, from any sources. You just need to clearly cite each use, so it is very clear what is yours and what is not, and in the latter case where the materials came from.

Deliverable: You will deliver weekly videos capturing your work and progress; more guidance will be given on the video format and content separately. For the final deliverable, you will also need to deliver a single zip file with all your code. If you dockerize your project, you need to submit your docker file (Dockerfile) and your docker compose file (docker-compose.yml).

Term Project

We recommend a project based on machine learning and data science. However, we encourage you to pursue your interests and choose a project you are passionate about.

You may use any materials, including any JavaScript libraries (e.g. NPM). You should understand that using such materials requires that you train yourself on their use (presumably through online materials). TA's and instructors will try to assist you, but you should expect less direct support if you use libraries that we did not cover in class.

You may use any code, any graphics, any sounds, anything at all, as long as you clearly cite precisely where it came from and, if possible, who created it.

You have an extended period to finish this assignment, with no other required assignments during the last 3 weeks. You are expected to invest at least 30 total hours per person into this project in this time, and it is further expected that your project will clearly reflect the quantity and quality of design and craftsmanship that goes along with that much time on this task. Most of you will exceed the 30-hour bar, but this is a minimum expectation for passing the term project.

What to submit

You will have 4 weekly video deliverables for this term project, each graded separately, determining the entire term project grade.

We do not expect you to be experts at making videos but be sure to give this serious consideration. We expect a large amount of effort to go into the design of your project, as well as into the actual code and presentation (video).

Videos

Do not show every last software feature. Instead, focus on the most important features, the highlights, and the parts that are distinctive.

You do not need expert production value, and in particular you do not have to do extensive editing of your video (and so you can have pauses, imperfect scene changes, and occasional verbal slips). However, the video should be of sufficient quality, and should clearly demonstrate your project, such that we can use it as part of our grading process (though we will also run your code, and we may ask you to run it for us). Also, critically, your video should meet your own standards so that you could reasonably place it in an online portfolio of your academic work, and submit it to a prospective employer as part of your CV.

Video - Deliverable #0

Due Date:
Wednesday, April 19th, 2017

Project Proposal:
Define the problem you intend to solve and a description of how you intend to solve it. In particular, list all modules/technologies you plan to use.

Team Name:
Submit the name of your team.

Team Members:
Submit the name of your team members.

Video - Deliverable #1

Due Date:
Wednesday, April 26th, 2017

Updates
Explicitly call out any updates you may have made.

Project Proposal:

Clearly define the problem you are solving and a description of how you intend to solve it. In particular, list all modules/technologies you plan to use.

Technology Demonstrations:

For the technology you listed, include a demonstration of your suitable competency with that technology. Note: anyone who cannot demonstrate mastery of their required technologies by this date will have to modify their term project to no longer use those technologies.

Code Artifacts

You need to have some code that clearly is attempting to solve some of the core problems you are addressing. This does not require a working demo, but it does require that you must show some very clear progress in that direction.

Video - Deliverable #2

Due Date:

Wednesday, May 3rd, 2017

Updates

Explicitly call out any updates you may have made.

Working Demo

At this point, you should have a working demo of your project, approximately at what would be considered a C-level final project. It may be missing features, it may have a less-than-polished user interface, it may have bugs, and it may even crash more than desired.

Video - Deliverable #3

Due Date:

Wednesday, May 10th, 2017

The Project Zip File

Submit a single zip file named termProject.zip containing all the files described below except your term project video, which will be handed in as a YouTube link.

Project Source Files and Support Files

Include all your project's files that are required to build and run your project.

Project Readme File

Include a file named readme.txt that explains, at a high level, what your project is and how it should be installed and run. If you use any 3rd party libraries, be sure to either include the library in your submission (preferred), or if this is impossible, to

include very clear instructions on where and how to download and install the library.

Grading

Complexity and Sophistication [15 pts]
Projects should show a level of complexity and sophistication in their design, coding, and user experience, all in keeping with your hard-won programming prowess. They should be neither too simplistic nor too complex. They should also be interesting, though we will take a broad view of this.

User Interface [15 pts]
To the extent that it is appropriate for your particular project, you should have a polished user interface. For projects without an end user experience, these points will be distributed across the other grading criteria.

Effort [15 pts]
Once again: you are expected to invest at least 30 hours into this project, and it is further expected that your project will clearly reflect the quantity and quality of design and craftsmanship that goes along with that much time on this task.

Design [15 pts]
Your design should include well-chosen functions, data structures, and algorithms.

Video & Presentation [40 pts]
Both your video and your oral presentations should clearly highlight the most interesting and important aspects of your project. And while we do not require expert video production value, your video still should be reasonably well done. For example, the voiceover should be very clear, concise, and easy to understand.

Bonus [0 to 10+ pts]
For extraordinary work, we may award bonus points. Please discuss more ambitious bonus attempts with the instructor prior to investing too much time into them!