

CS 60-311

Course Project

Description

Students will complete a semester-long project that involves robust software design, implementation, and testing. Students work in groups. Every group (3 - 5 students per group) will design, implement, and document a given software system. Another group will evaluate and test the software system, produced by a different group. The grading will be done at the group and individual levels.

Objectives

The proposed project should be big enough to justify a group of 5 students but at the same time small enough to complete it in one semester. The main propose of the project is to help you apply and practice what you will learn in the course.

Project Topics:

Discuss your project idea with the instructor or the course TA to agree on a topic, and make sure it is of a complexity and scale that does not exceed the intentions of this course. However, you are strongly encouraged to come up with your own project ideas. The TAs and I will be very happy to discuss your ideas and make comments/suggestions.

API Based Project

One way to get inspired and come up with project ideas is your from your own experience. Think about your daily activities or tasks and how you could use software to improve them. Do not assume you will build everything from scratch. You should take advantages of available public APIs. There is an enormous number of application programming interfaces (APIs) that are available to the public

Nowadays APIs are widely used by software developers. A software developer is either implementing an API or using an API in his/her application. Developers are using APIs to implement new features in their software. They simply use a simple API call within their software to implement complex features instead of having to code it by themselves.

Real Life Example¹: **Pokemon Go** has been one of the most popular smartphone games. But in order to build such a game taking into account the large ecosystem, one requires complete information of routes and roads across the globe. I'm sure the developers of the Pokemon Go must have faced a dilemma if they should code the maps of the entire world or use the existing Google maps to build their application on top of it. They choose the latter, simply because it's practically not possible to create something similar to Google maps in a short span of time.

¹ Source <https://www.analyticsvidhya.com/blog/tag/api-based-projects/>

Knowing that a particular APIs exist and provide one or more services could be the first step in your inspiration to come up with your project idea. Think about Google APIs (Gmail APIs, Maps APIs, Geolocation APIs, Google Drive APIs, etc). Most of the social network platforms provide public APIs.

For example, one of your daily activities are driving to school and most of the time you forget where did you park your car. Now, you know there is many Maps and geolocation APIs, so maybe you could develop a mobile app to help you find your car in a parking lot.

To find more information about public APIs check <https://any-api.com/>

If you are interested in specific APIs e.g. Machine Learning APIs, check with myself or the TA.

Important Dates

1. **Sept 14, 2018** - Submit Project Proposal & Group Formalization (3%):
2. **Oct 5, 2018** - Submit Project Specs and requirements (14%)
3. **Nov 2, 2018** - Submit Project Project Desing and Implemetation (14%)
4. **Nov 30, 2018** - Submit Project Project Implemetation and Testing (14%)