

CS351 Final Project Information

Students will propose and run a final project, ideally in groups of 2-3. It is fine to use your existing research project if it is relevant to the course and the instructor approves. You will present the project at the end of the course and write a 8-10 page report.

Project timeline:

- Project proposal: May 22nd
- Presentation: in class and labs in 10th week
- Final report: 11:59:59 PM on June 11th

Proposal

Your project proposal should be 1-2 pages long (single column, minimum 10pt font size). The proposal should include the following information:

- The team members (names and email address)
- The problem you want to address including some background information on the topic (e.g., a few key references)
- The specific goals you want to achieve (expected results)
- The methodology and required resources

The instructor will start discuss with everyone/every group about your final project. The following are several examples you can consider:

Convert a Real Application to the Cloud. Take a real application that you use in your research, classes, or for fun, convert it to parallel form using a cloud programming model such as Hadoop, or Spark, and get it to run on as many processors as possible. Be sure to carefully measure the performance at a varying number of processors to produce a good speedup graph. What is the scalability limit of the system, and why?

Build a Scalable Website. Design a simple interactive web site that lets you upload stories and images, like a social networking site.

Cloud Head-to-Head Evaluation. Everyone wants to know which cloud provider is the "best" in terms of performance, scalability, and cost. To answer this question, compare two cloud providers (pick from Amazon EC2, Google App Engine, Windows Azure, or IBM Cloud) head-to-head in a variety of basic operations: time to start a virtual machine, CPU performance, upload/download speed, storage operations per second, and so forth.

Serverless real-time chat application on Amazon EC2

Come Up With Your Own. These are only ideas to get you thinking! Come up with your own idea, or modify one of these above.

www.qwiklabs.com (advanced or expert projects)

<https://www.awseducate.com/educator/s/pathways> (AWS Cloud Career Pathways)

Final Presentations

We suggest the following outline for your talk:

- The problem
 - The idea
 - Design and implementation
 - What works/status
 - A key measurement/experiment
- Feel free to deviate if needed for your projects but make sure you stick to the main points (do not try to cover all your results) and do practice.

Final Reports

Submit a 8-10 page project report covering the motivation, design, and results of your work by 11:59:59 PM on June 11th. The paper should be 8-10 pages long, single-spaced, with 12 pt. font, and single-column layout. If you are using latex, you could try [IEEEtran template](#) and specify the template in your document:

```
\documentclass[journal, onecolumn, 12pt]{IEEEtran}
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