

CMPS 485: Computer Security

Course Project

Spring 2016

Intro

The course project this semester will involve you doing some research on a security topic of your choice and presenting it to the class. In the end you will produce a 7-12 page report and give a 15 minute presentation to the class about your topic.

Project Components

The goal for this project is to let you explore, in more detail, an area of security that interests you. There are three components of projects that I expect to see in a class like this:

1. *Breadth*. Reading a variety of related work to an area and summarizing all of it while showing how it is related.
2. *Depth*. Deeply researching a theoretical topic and distilling the information down to make it more material accessible to your classmates.
3. *Implementation*. Implementing and/or testing a practical topic, being able to demonstrate what you've done, and documenting the results of your tests.

Your project should include 2 of the 3 components described above. If you are taking this class for honor's credit, your project must include all 3 components above.

Possible Topics

I recommend you choose a topic that interests you. You may choose and propose your own. If you are uncreative, here are some potential project ideas:

Random Ideas

- Wardrive a large area in Doha (using a laptop and GPS unit) and present interesting statistics about the access points as well as map. I have a USB GPS and a good USB wireless card for this.
- Run a password cracker on the password hashes leaked during a recent hacking incident. Present interesting statistics about the types of passwords people use, how easy they are to crack, etc.
- Learn about the security of secure messaging apps as well as their security models and put together an in-depth report and solid presentation about them.

- Investigate the scans provided by the ZMap project and find some interesting results by analyzing the portions of the scans relevant to Qatar.
- Learn about HTTPS certificate authorities and the current debate about them. Present the current CA system to the class and discuss the problems associated with it.
- Other. Your own idea! (I recommend this.)

Pre-Proposal

We will spend one class session where you sit with your team and brainstorm potential ideas. At the end of this class, you will submit a brief handwritten summary of your discussions.

Proposal

In order to assign projects, each team must submit a formal proposal containing at least two different project ideas. Your entire proposal (for both ideas) **must** be less than one page in total. Order your ideas according to your preferences. Each idea should clearly state which of the two Project Components (see above) it includes.

After submitting your proposal, the course instructor will evaluate all proposals and assign projects accordingly. Project assignment will be based on...

1. Your preferences
2. The quality of your proposal
3. Your compliance with the page limit.

Your proposals are due Thursday, March 31st at 9:00pm on Gradescope.

Report

You should produce a 7-12 page report with your findings. It should be A4, 12 point Times New Roman font with 1 inch margins. 7-12 pages is not very long, so you need to be strategic about what you present. Projects that have an implementation component should have short reports (closer to 7 pages) while projects without implementation should have longer reports (closer to 12 pages).

Note: When writing your report, you may be tempted to cut and paste pieces of various online sources together into a report or even just parts of your report. This would be unwise, as I will fail you and report you for cheating. For a project like this you are NOT permitted to reuse material from ANY other source in ANY quantity. (No, not even just a sentence or picture. Paraphrasing or rewording is also not allowed.) Brief quotations (1-2 sentences each) properly quoted and cited are acceptable only if

they do not constitute a major portion of any section. Write it yourself! (I take this REALLY seriously...)

Presentation

Your presentations should be 15 minutes long and will be used by you to present your findings to the class. All team members must be part of the presentation.

Grading

Your report, presentation, and other evaluations will be used to determine your grade as follows:

55% - Report

25% - Presentation

15% - Peer evaluations (both performing and receiving)

5% - Pre-proposal and proposal

Teams

You should work in teams of 2-3. Teams larger than 3 are not permitted.

Deadlines

The report is due Saturday, May 28th at 11:59pm on Gradescope. Late days are not applicable for the report. Teams may request an extension of this deadline due to extenuating circumstances (such as having a senior project presentation the next day or having other course project deadlines during that same weekend), but *such requests must be received by the instructor by May 27th*.

The presentations will be during the week of May 22nd. Your presentation slot will be allocated randomly by lottery on the day of the presentation, so you should always be ready. (Students with senior projects will be exempted from the lottery on May 22nd due to the senior project report deadline.)