

CMSC B399 Senior Conference - Spring 2023
Milestone #1: Enhanced Proposal
Due: Friday Jan 27, 2pm EST

Overview and Objectives

Your team's first deliverable is a two-page proposal that briefly highlights the important parts of what you plan to do in your project: what problem you'd like to solve, how you'll go about solving it, how you'll know you solved it, and other supporting information.

Think of it as a sales/marketing document: you're trying to convince the reader to "invest" in you and your project by summarizing the important parts and showing that – at this point – you have a good idea of what you want to do and how you're going to do it.

The goals of this assignment are to:

- ensure that you have identified a project to work on
- encourage you discuss and start thinking about some of the most challenging aspects of the project
- give you experience putting together a written document as a team
- give you practice organizing a proposal: what you're going to do, why you're doing it, how you'll know you've done it

Structure

Your proposal should be a PDF document of around two pages (single-spaced, 12-point font) consisting of the following sections:

1. Student Information

List the names and email addresses of all members of the team. If you've come up with a clever/witty name for your project or team, you can list that here, too!

2. Summary

Describe your project in one sentence. This is actually harder than it sounds, but is an important skill for learning how to talk about your work. Think of this as a "what?/who?/how?/why?" sentence, i.e:

- *What* is it? An app, a system, a device, an algorithm...?
- *Who* is it for? Everyone, a certain demographic, CS researchers...?
- *How* will it solve the problem you're trying to solve?
- *Why* is it important that the problem be solved? Why bother solving it?

Here are some examples:

- "AccessiBill is a mobile app for elderly people that lets them keep track of when their utility bills are due so they do not forget to pay them."
- "We will implement a website for small-to-medium businesses that simplifies the process of submitting expense reports so that employees will submit them in a more timely manner and businesses can get a better sense of how much they are spending on travel expenses."

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Hint: although this comes first in the document, you may want to try to write this sentence last after finishing the rest of it!

3. Problem Statement

Anything we design or build in computing should attempt to solve some problem; otherwise, why are we doing it? In this section, briefly introduce the problem area or domain that your project will address. You should consider:

- Why is solving this problem important?
- Why is solving this problem difficult?
- Who will benefit from this problem being solved?

4. Proposed Solution

In this section, talk about how you are going to try to solve the problem you just identified. That is, whereas the previous section asks, “why are you doing this?”, this section asks, “what are you going to do?”

This doesn't need to be super-detailed at this point, but you should have an idea of the major parts of your solution and their functionality. The main idea is to show that you've thought this through and know what you'd like to do.

In addition to describing your solution, you should mention:

- What is your intuition for why this will be a good solution? Show that it is clearly relevant and appropriate for solving the problem you identified.
- How will it address the things you identified as difficult in your problem statement?
- How sure are you that your solution is technically feasible? What makes you think so?

5. Evaluation Plan

Although we often think of a computing project as just “building something,” an equally important part is evaluating what you've built: not just showing that it “works,” but that it actually solves the problem you set out to solve.

In this section, indicate how you plan to assess or evaluate your solution, e.g. through user testing, surveys, a controlled experiment, etc. As with other sections, you don't need a lot of detail here, just a rough idea of what you may want to do.

6. Potential Challenges

No matter how well you plan things out, your team will encounter challenges along the way. In this part of the proposal, we'd like you to start thinking about the different obstacles you may run into, so that you can start considering resolutions as early as possible.

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One of the most important things to consider is: what do you need to learn in order to complete this project? What skills or knowledge do you need to acquire, and how might you go about doing so?

You should also consider: the applicability of your proposed solution to the problem you've identified; technical challenges; gaps in the team's (or your advisor's!) knowledge; access to resources; availability of personnel; etc.

7. Team Bios

This is an opportunity for you to further convince the reader that your project will be successful by describing each team member's skills and talents, particularly as they relate to the challenges you've identified in the previous section.

For each team member, include a short biography describing why they're qualified to take on this project and what applicable skills they bring to it.