

# Project Proposal

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In “real life” the first step on many projects is to write a proposal to management within your company or venture capitalists for a startup, describing the project and why it should be funded. Your first assignment for CS194 is to write a project proposal. You should write your CS194 project proposal as if you were writing a proposal for a real life project.

Your objectives in writing the proposal are (1) to describe the product you are planning to build, and (2) to convince the reader that they should provide the resources necessary to allow you to build the product.

This is a group assignment and each team should submit a single proposal (regardless of the WIM status of individual team members). Please e-mail a digital copy in Microsoft Word format to [patrick.young@stanford.edu](mailto:patrick.young@stanford.edu) by 5pm Friday April 14<sup>th</sup>. Proposals should be ~2000-2500 words, which should come out to 5-6 pages (more if you include lots of diagrams).

## Contents

The contents of your proposal will vary, depending on your project. All proposals should include:

**Description of the Project**—This section should explain what exactly you plan to do for your project. Focus on how your product looks from a user’s perspective—*not* on the technical underpinnings of your project. The description in your project proposal should provide enough information so that your reader has a good idea of what your product is trying to do, however, this isn’t a full technical specification of your product.

In addition, your project proposal should include *some* of the following items:

**Need for the Product**—Discuss why your project will be useful.

**Potential Audience**—Highlight the potential audience for your product. How large is the audience? What is their level of technical sophistication?

**Discussion of Competing Products**—Describe any competing products which currently exist in the marketplace. Tell the reader why your project will be different or better than existing products.

**Assessment of Risks**—What are the potential risks involved in your project? What can be done to reduce the risks.

**Resource Requirements**—What do you need to build your project? If you need anything unusual, let your managers know about it.

**Potential Approaches**—Are there different ways to deal with the problem area your product addresses? Why did you choose your particular approach?

**Next Steps**—What do you need to do next in order to build your product?

Feel free to add additional items as appropriate for your project.

## Audience

Assume that your audience includes both technical managers and marketing people. You may assume that the marketing department has some familiarity with technical concepts, but that their knowledge lacks depth. You'll need to explain your ideas carefully in order for them to understand what you're proposing.

To make the audience more concrete, you may consider the CS194 teaching staff and your Alumni Mentor as your technical readers and the WIM tutors as your non-technical readers. The WIM tutors we will be using are assigned to the School of Engineering and are used to reading technical papers. At the same time, they don't have Computer Science degrees. The WIM tutors should be able to understand your project proposal, just as your company's marketing and sales staff should be able to understand a corporate project proposal.

## Hints for Writing Technical Papers

While you have all written papers at Stanford, technical papers are different from humanities papers in a number of important ways. Your manager will probably read your document from cover to cover. However, your document will also likely get passed to other departments, these readers will simply skim through the document and only read the sections relevant to their work. High-level management will probably only read the introductory section and then skim the rest of the document. Those that read the document may want to quickly refer back to particular sections at a later point. You can take advantage of a number of features to make your document more accessible to your audience:

- Use section headings. They will allow the audience to move quickly to appropriate sections in your document.
- Use bullets and description lists.<sup>1</sup> These make the document much easier to use as a reference. At the same time, don't use bulleted lists of buzzwords as a replacement for real content. In most cases, you should use complete sentences—your proposal is a real document, not an e-mail memo between team members. Keep the non-technical members of your audience in mind and make sure you explain everything thoroughly.
- Use tables, diagrams, and graphics where appropriate. These will stand apart from the rest of the document and grab attention. Well done graphics can emphasize points better than simple text. They can also reduce reader fatigue by giving them something to look at other than blocks of text.
- On the other hand, don't overdo tables and diagrams. One or two tables will stand out from the text and make the document more interesting and potentially easier to read. However, a document chock full of tables is hard to read. While there are situations where a technical document should contain pages and pages of tables (e.g., a report on the results of a physics experiment), your product proposal isn't one of them.

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<sup>1</sup> Description lists are lists used to describe terms. Each item in the list typically consists of a term name in bold, followed by a description of that term. In this assignment handout, the list of possible contents for your project proposal in the "Contents" section is an example of a description list

- Consider adding an “executive summary” at the beginning of the document. This section provides a high-level overview of your entire document. This will allow top management in your company to get a feel for your proposal without having to read it all.

Finally, don’t forget your basic writing skills. Technical writing is, of course, still writing. Sections should begin with an introductory paragraph. Paragraphs should have topic sentences. The paper should be well organized, easy to understand, and easy to read. It should also convince the reader that your project is interesting and worth funding.