

CS 4100, Fall 2025

Final Project

Modified version of R. L. Zarling's Spring 2005, CS 4100, "Final Projects", used with permission.

Important Dates (details are discussed below):

Monday	September 8	Topic Proposal
Wednesday	October 8	Presentation of Topic
Friday	October 31	Outlines Due
Monday	November 17	Peer Reviews in Class
Wednesday	November 19	Peer Reviews in Class
Friday	December 17 by 10:30 am	Turn in Final Revision

Introduction

As a unifying and enriching exercise in applying what you have learned in this course, you will write a term paper about some aspect of languages and computers. More specifically, your paper will be a factual, accurate, balanced, unbiased report. It should include a comparison of 2-4 programming languages in their use to solve a problem, their design, or the way they handle an issue in programming languages (for example, scope, typing, exception handling). This will involve reading and assimilating material beyond what we cover in class, and presenting it in a carefully written essay. Select a topic that can be handled well in about 2500 words with a carefully organized and incisively articulated presentation.

It is important that you adhere to the style of scientific academic writing (see separate handout). It must, of course, be entirely your own work. You may not use AI for any of the work on your paper. All use of the work of others must be properly cited. The technical level of your paper should be understandable to your fellow students in the class; i.e. students with a computer science background, but not necessarily knowledgeable in the particular area you have chosen as a topic.

Choosing a Topic

Your choice of topic will be of considerable importance to the success of your project, so choose carefully and thoughtfully. Make it something that engages your interest and curiosity. It must also be something about which enough has been written that you can access multiple sources in order to synthesize and write a deep, accurate, and balanced report. However, you must also be careful not to choose too broad a topic, which spans too much intellectual territory. Writing about one particular interesting feature of programming languages might be acceptable, however, you must address alternative approaches, in at least two different programming languages, that might have addressed the same issues and what the relative merits of the various possibilities are.

Your topic needs to deal with languages and computers and needs to go significantly beyond material we address in class. Although you may eventually impose your own emphases, and organization, it should not be your own opinions, but rather a fact-based reporting of some issue. Most good topics will include some complexity in terms of alternative approaches which might lead to different choices under different circumstances, or which have been handled in different ways in the past.

Your paper must also have technical depth, which could include the thoughtful analysis of code. Please refer to the Scoring Rubric for details about depth, accuracy, and structure.

Resources

You will need to use a number of sources in order to fully understand your topic. Our library has many general computer science books and journals which frequently contain contributions about languages, as well as those devoted specifically to programming languages. You may simply browse the periodical shelves, but you may also find it more efficient to use the electronic catalog system to quickly scan multiple journals. You might look through *Computing Reviews*, a periodical dedicated to short summaries of current literature from a variety of sources. The internet is also a rich source of inspiration and information. Your paper must be based at least in significant part on printed sources other than our textbook, however, and not merely internet research. Wikipedia will not be considered an acceptable primary source.

Keep careful records of where you find your information, and document the sources in your paper using APA documentation style (see <http://library.csustan.edu/guides/apa.htm>). Additional resources will be provided.

Schedule

Select a Topic

No two students may work on *exactly* the same topic. Initiate a “claim” to a topic by emailing me briefly supplying a working title and describing your proposed topic, including which issues you intend to address and emphasize and what you intend to leave out and why, and including a tentative list of sources. Your claim will be finalized when I approve your proposal; I may ask you for one or more revisions along the way. Topics will be assigned on a first-come-first-served basis. Hand in your topic proposal no later than **Monday, September 8th**.

Gather and Organize Information

Research your sources, gather and organize your material, and come to class on **Wednesday, October 8th**, ready to present to the class a brief, tentative overview of the content and organization of your paper. This will allow your classmates to see what you are doing and you can benefit from their collective reactions and suggestions. You may present a slideshow or an outline projected from the front of the classroom. Turn in an electronic copy of your overview to me at that time.

Complete an Outline

After your topic presentation, conduct further research to flesh out your paper. Create an outline of the full paper to find the best structure and logical flow of the paper. This will make the paper more readable. The logical flow will make your paper understandable and insure clarity. Turn in your outline to Canvas on **Friday, October 31st**.

Complete the Paper for Peer Review

Bring two hard copies of a complete draft of your paper to class on **Monday, November 17th** which will be a peer review session to help you in your final revisions. Two classmates will read it and make written suggestions. Turn in your draft to me at the end of the class period. You will turn in the peer reviews later attached to your final paper. We will do the second review on **Wednesday, November 19th**. Please note that you cannot pass the course without

submitting your complete draft paper and peer reviews on time. You will need to be in class on November 17th and 19th.

Reflect and Revise

Read the peer reviews of your paper and reflect on the points raised. You may choose to incorporate the suggestions or not, but you should do so with an eye to producing the strongest possible final paper. Write a one- or two-page reaction paper, which addresses the issues raised and indicates, in each case, what if any revisions you will make and why. You will turn in this reaction paper along with your final paper.

Final Revision

No later than **10:30 am on Friday, December 17th**, turn in all of the following:

- A final revision of your paper in electronic form to turnitin.com (through Canvas)
- Two (or more) peer reviews of your paper (details to follow)
- Your written reaction to the reviews as described above (details to follow)

Grading

The grade for your project will be based on measures of progress, timeliness and participation at the intermediate milestones of the writing process listed above, on the quality of the reviews and reaction paper you write in the peer review process, and on holistic readings of the papers you turn in at the end of the semester, both before and after the peer review. In these final readings, I will react to your paper based on the depth and accuracy of what you have to say and the skill you have exhibited in presenting it. Factors like organization, choice of wording, spelling, punctuation, and sentence structure will play an indirect role. I will look for papers that present important, accurate and well-balanced information in a focused and engaging way.

Plagiarism

The Random House College Dictionary (1984 edition) defines plagiarism as “the appropriation or imitation of the language, ideas, and thoughts of another author, and representation of them as one’s original work.” You may not use another person’s words or organization of ideas from written, verbal, or electronic sources, paraphrased or directly, copyrighted or not, except in limited quantity with attribution. The final grading process will include checking for plagiarism, with severe penalties for violations of this ethic. Many of these issues have been discussed in class over the course of the term. If you have questions about how to handle some specific aspect of using someone else’s words, ideas, or organization in your paper, consult with me well in advance of the due date.