

# Guide to Research Projects in CS 100

**Research Projects.** Each student is responsible for researching and presenting a short research report on a Big Idea in Computing. Each research project will relate to a video lecture on some aspect of computing that is viewable on the Web. These lectures on selected topics give you an overview of what computing is about in addition to programming and problem solving. The research reports are an opportunity for you to delve into these topics and to develop essential communication skills. You may choose from among many related subtopics that the instructor will provide, or you may propose a different topic of your own. Each team must have a different topic. Each report has both a written and oral component.

**Teamwork.** The research projects are done in teams of three (or two, if the class does not divide evenly into three's). The teams are formed by the instructor. (You might prefer to form your own team, but working in an assigned team is good practice for a world in which you usually don't have the luxury of forming your own.) For each report, the team will have a leader. Teams keep the same members for the semester.

**The team leader** is responsible to divide work among the team members, to write and present the written and oral reports. The team leader benefits from utilizing the abilities and creating effective cooperation among the team members. **Team members** have the responsibility of carrying out their assigned share of the work, and of critiquing and improving the team leader's drafts and carrying out other assigned tasks. (Remember: you will have a turn as team leader and can expect the same cooperation as you give.) A single Pass/Fail grade will be assigned to each project. If your report has substantial shortcomings, you may be asked to revise and resubmit it.

**What to Turn In.** The "deliverables" of each research project are a *written report* of 800-1,000 words and a three minute *oral presentation*, with slides, that are presented in class.

## How to proceed

- ◆ **Choose your topic.** from among suggested topics or pick one of your own. Post your choice on Moodle. (Only one team per topic, on a first-come, first-serve basis.)
- ◆ **Research the topic.** You must use at least *three independent sources* and indicate *what material is derived from what source*. The Web or books are good sources. You should evaluate the usefulness and consistency of the sources you consult.
- ◆ **Organize your written report.** Even though your report is short, it still requires a logical structure, indicated by subheads. For example, you will probably want to include a description of the topic and why it is interesting or important; the key ideas you encountered; any significant conflicts among your sources; ideas that are worthy of further study or "open questions" (look up what that means).
- ◆ **Present a draft** of your written report to your teammates. Revise. Be sure to proofread and spell check.
- ◆ **Prepare your oral report.** Three minutes is less than half of 800-1,000 words, so you must pare down your written report to its most important elements. Your slides should contain bullet points or illustrations to enhance the effectiveness of what you are saying. Do not put your oral report on your slides; people should be listening to your words, not reading them.

Practice your report before you give it in class. Remember: presenting your ideas is an invaluable lifetime skill, and your classmates are a friendly audience!

- ◆ **Cite your sources.** You must locate and cite three or more independent sources for your report. You must directly quote (within quote marks) and/or paraphrase each of them. Giving proper credit is a hallmark of research; it gives credit where it is due; it allows the reader to follow up. Using someone else's work without giving credit is plagiarism.