Course Project
Final Deliverables

Due date: Tuesday, December 6 (final exam time)

Project Deliverables: Overview

Your quarter-long project comes with the following deliverables:

1. **Code.** All code developed by your team shall be submitted to the SVN repository created specifically for the purpose on the `cplop.cosam.calpoly.edu` server. The repository will be created during the week of the Thanksgiving and information about it will be distributed to you once it is available and tested.

2. **Project Report.** Each team will submit one project report that describes in detail the work done by the entire team. Individual portions of the report document can be written by subteams responsible for the respective parts of the overall project, but the report must have coherent organization and good flow. Use of LaTeX is highly preferred.

3. **Project Presentation.** Each team is alotted 55 minutes for presentation and discussion. The presentations will take place during the final examination time, on Tuesday, December 6, starting at 9:10am.

4. **Team Report.** Report of the distribution of duties and contributions of individual team members to the overall project.

Specific details about each deliverable are provided below.

Code

Your respective projects represent initial steps in putting together software solutions for the problems our customers really want solved. We hope that development of some/all of these solutions will be continued in the near future by either some of the students from this course (e.g., as part of senior projects and/or M.S. thesis work) or by future generations of students interested in bioinformatics.

To make sure we can continue work on these projects, all code created by each team needs to be archived and documented.

In the next couple of days we will create an SVN repository on the `cplop.cosam.calpoly.edu` server and will provide you with access to it. Each team shall create a project in this repository and, when ready, shall submit all code.

The requirements for the code submission and documentation are as follows:

1. **Organization.** Each team has full freedom as to how their code base is organized, but some organization shall be present in all submissions.

2. **README.** The root of each submission shall contain a project README file with the following content:

   - Names of all people who contributed code to the project.
   - Notes on the programming language/languages of choice.
   - Description of the overall structure of the submitted code.
   - List of source code files with short note about the purpose of each one (organized according to the overall structure of the submitted code).
   - List of all executable programs (i.e., all programs that, (after compilation, if necessary) can be executed) and compilation/running instructions for each of them.
   - Known bugs.
   - Release/Licensing information.

3. **Documentation.** Your code shall be well-documented both internally and externally. Remember, that any part of the code you submit can be later put to use by some of you and/or by others. Internal documentation refers essentially to comments in the code. They shall be well-written and shall document the source code properly. External documentation refers to proper documentation of any APIs, classes, methods etc. developed by your team. E.g., for code in Java, Javadocs are expected for any major APIs you create. Each source code file shall contain a comment header listing all contributors to the code in it and the general purpose of the file.

4. **Licensing/Release.** Because your work on this project is NOT work for hire, you maintain intellectual property on the code you create and thus, you make decisions concerning the release of the code and licensing terms. In order to pass the course, you must grant myself,

your customers, and any students working with me or with your customers a non-exclusive license to use and modify all submitted code and release both open source and commercial products that include your code or any code derived from it. (Many open source licenses, although not all, automatically grant such permissions to anyone. If you choose not to release as open source, explicit permissions must be granted. Some open source licenses, e.g., GPL, might not be appropriate as they require all derivative work to be open source, and we cannot guarantee it).

Project Report

Each team shall submit one comprehensive report documenting all team achievements. All team members shall be listed as co-authors of the report, although there is not a requirement that all team members contribute to actual writing (you are allowed to separate duties related to code submission and documentation, report writing and presentation preparation in a way that does not require everyone to participate in every task).

The report shall have the writing and the content quality of a technical report. Technical reports are non-peer reviewed academic publications, typically released by academic departments and research labs. A technical report allows its authors to associate a time stamp (day of issue of the tech. report) with a piece of novel work. Usually, technical reports are early versions and/or more complete versions of papers that eventually get peer-reviewed and published in either conference proceedings or journals.

For your work, we are going for the "early version" quality. All reports that pass the general quality check will be released as a formal technical report by the CS department.

It is preferred that you use LaTeX in preparation of your project report, although I will accept the reports in other formats as well.

The overall structure of the report shall be as follows:

1. **Title.** Pick an appropriate title for your report.

2. **Authors.** Include all members of your team. Typical order of authorship in Computer Science papers is alphabetical. If one or more members of the team played (in the eyes of everyone) a crucial role in the project, their names can appear first, followed by the names of everyone else in alphabetical order.

3. **Abstract.** A short, 1-2 paragraph narrative outlining your project and its achievements.

4. **Introduction.** A concise overview of the problem/problems your team has addressed and of the specific achievements of each team.

5. **Background/Related work.** Any background information necessary to understand your work. Any related work you may have found while working on the project.

6. **Overall description of contributions.** A roadmap of all contributions documented in the report.

7. **Individual contributions.** Individual contributions towards the overarching project goal. Describe any design decisions, algorithms and data structures used, etc.

8. **Evaluation.** This is, perhaps, the hardest, but also, the most important part of your paper. For each major contribution that produces a deliverable for the customer (i.e., an executable program that can be run to produce some results), some sort of evaluation must be presented. Describe any experiments you used to evaluate/validate your solutions. Present the results of any experiments, analyze them.

9. **Future work and conclusions.** Discuss the limitations of your current solutions, outline what can and needs to be extended. Provide a clear and concise conclusion for your project, underscoring any positive and negative achievements and any new knowledge already gained, to be gained from using the results of your work.

A well written final draft of the report is due Tuesday, December 6 at the beginning of the final exam period, although earlier submissions are welcome (this may give me the ability to evaluate your project better). Each team will designate one student as the corresponding author for the paper. I will evaluate the quality of the report and contact the corresponding author with my comments.

The grade for the report will be based on the quality of the final draft submitted on or before December 6. However, this grade will be contingent upon a ***corrected version*** *of the report being submitted to me* ***before the end of the Winter quarter****.*

That is, I will return my comments to the corresponding author for each paper. (S)he will then facilitate one more editorial pass for the report, designed to take care of all the comments. I expect that in most cases, this editorial pass will be relatively short. I will work with the corresponding author and anyone else from the team on the content of the final version of the paper to be submitted. I expect to receive all final versions by the last day of classes for the Winter term. Teams whose final report submission is not ready by that time are subject to grade change requests based on nullifying the score assigned to the paper. I expect, it will not come to that.

Your reports will be evaluated by myself and by your customer. Because the work you engaged in in the course is novel, one of the things we will be evaluating is the novelty and publication potential. Our comments to the corresponding author will, among other things, contain our notes regarding the possibility of submitting the report, or portions of it, for publication. If the team, or a subset of the team is interested in pursuing further publication opportunities, we will work with all interested students on the text and the venue for publication. (At the very least, any novel accomplishments can be submitted to the CSU research competition which has a submission deadline somewhere in February).

Presentation

Each team shall prepare a comprehensive presentation describing the problem the team worked on and any designed and developed solutions. The presenation shall be delivered during the final examination period, on Tuesday, December 6, 9:10am-12:00pm.

We have three teams and 2 hours and 50 mins. Each team receives 55 minutes to present its work and answer instructor, customer and audience questions. As such, I suggest that the presentation time is limited to 40-45 mins, with 10-15 mins left for questions and discussion.

The presentation shall discuss all major contributions of the project, so it is expected that multiple people will present. At the same time, there is NO requirements that every team member participates in the presentation, just as there is no requirement that every team member participates in paper writing. Designation of the presenters is left to each group and should be based solely on who the team percieves to be the best/most appropriate person to discuss the specific aspects of the project.

The presentation will be evaluated by myself and by your customers. It will be evaluated both on style and on content. I will release the instructor's evaluation rubric a few days before the presentation.

Team Report

Team report is a short document describing the structural breakdown of the team and the responsibilities of each individual team member. Because this course involves large teams, a team report document will help me properly evaluate the contribution of each individual team member to the overall project.

Deliverables.

Code. The deliverable is the completed project directory on the SVN server.

Project Report. Both a hardcopy and softcopy submissions are required. Hardcopy can be handed in at the beginning of the final exam. Softcopy submission involves **both** the uneditable version of the paper (Postscript or

PDF format) and the editable version of the paper (LaTeX source files or Word/OpenOffice document).

Presentation. The main deliverable is the oral presentation itself. The secondary deliverable is the slide deck used for the presentation, which shall be submitted to me by the beginning of the final exam. Slides can be submitted in PowerPoint (.ppt is preferred to .pptx format), PDF, or any other popular format.

Team report. A soft copy (a googledoc, a word processor file, a LaTeX source file, a Postscript or PDF file, etc.) and a hardcopy shall be submitted. The hardcopy can be brought to the final exam and submitted together with the project report.

Grading.

The overall grade of the project will be constructed out of the following:

1. **Proper code submission.** I will inspect your code submission on the SVN server to ensure it satisfies the submission requirements.
2. **Project report document.** Quality of writing, coherence, understandability will be evaluated.
3. **Oral presentation.** I will evaluate the style and the content of the presentation.
4. **Quality of project.** The key component of the grade is the overall quality of your project. Has your team produced novel knowledge? Has it advanced state-of-the-art in the field? Has it successfully addressed the problems and challenges set forth by the customer? Is your customer satisfied/impressed? This part of the grade is awarded regardless of the quality of the written report/oral presentation (i.e., if you achieve amazing results but poorly document them, you will get 100/100 for the project quality, but will be docked points for report and/or presentation).

The first three components are common for everyone on the team. The fourth component *may differ* from person to person, and will take into account individual contributions of each team member as reported in the Team Report deliverable. In general, I expect that the grades will be given at the granularity of a sub-team: i.e., if your team divided itself into subgroups responsible for distinct subsets of the initial problem set for your project, the "quality of project" component will evaluate the quality of the solutions to the specific sub-problems in which each team member had a significant hand. If the team did not subdivide and did not employ distinct task subdivision, all members of the team are likely to be evaluated for the overall quality of the project.

Exceptions evaluating individual (documented!) team member performance can always be made when necessary by the internal group dynamics. This can adjust the score up for a team member (who is recognized to be a legit leader of the team) as well adjust the score down (for a team member reported by his/her peers to have had little contribution to the project).

Good luck!