

CS246—Deliverables, Group Project (Spring 2016)

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Due Date 1: Friday, July 15, 5pm

Due Date 2: Monday, July 25, 11:59pm

Your project will be graded based on correctness and completeness (60%), documentation (20%), and design (20%). Grading will proceed in two phases, outlined below:

Correctness and Completeness

The correctness and completeness component of your project will be assessed via a live demo in front of a TA. You will need to sign up for a 20-minute demo slot with a TA; both group members should show up, and you should plan a demo that takes the TA on a tour through all of the required features of the project. Be prepared to explain to the TA how you implemented the various parts of your project. At any time, the TA may ask you to demonstrate a particular element of your project (e.g., whether some boundary case is handled properly). If there is a component of your project that is not working, advise the TA, rather than pretend that it does.

After you have demonstrated the core requirements, you may demonstrate any additional features of the project that you may have implemented, for extra credit. The TA will assess the worth of your additional features after your demo is over.

Documentation and Design

The design of your project is an important part of your overall assessment. For top grades, it is not enough that your program simply work; it must demonstrate a solid object-oriented design. Thus, you will need to spend considerable time planning out your classes and their interactions, aiming to minimize coupling while maximizing cohesion. You must plan for change in your program. Imagine that the specification will change on the day before the final due date (it won't, but imagine it will). How easily can you accommodate change?

As part of your design, you should anticipate various ways your project could change. Perhaps a change in rules, or input syntax, or a whole new feature—who knows? Plan all of your project features to accommodate change, with minimal modification to your original program, and minimal recompilation. In your final design document, outline the ways in which your design accommodates new features and changes to existing features. Be specific. You may wish to implement some of these for extra credit.

Your documentation and design will be assessed via written documents that you will submit to Marmoset as pdfs.

On Due Date 1

Submit a plan of attack. This should include a UML that describes how you anticipate your system to be structured (even if you complete the project by due date 1, the UML you submit must be

one that you built prior to starting the project).

Your UML should show the classes that make up your project and the relationships between them. You only need to show public methods (i.e, you can leave out private fields and protected/private methods, unless you need to show them to illustrate a point, e.g., a design pattern). You will not be graded on the degree to which you adhere to this model, but you will be asked to account for any differences that arise between this model and your final submission. File: `uml.pdf`.

In addition, your plan of attack must include a breakdown of the project, indicating what you plan to do first, what will come next, and so on. Include estimated completion dates, and which partner will be responsible for which parts of the project. You should try to stick to your plan, but you will not be graded by the degree to which you stick to it. Your initial plan should be realistic, and you will be expected to explain why you had to deviate from your plan (if you did).

Finally, your initial plan of attack must include answers to all questions listed within the project specification itself. You should answer in terms of how you would anticipate solving these problems in your project, even though you are not strictly required to do so. If your answers turn out to be inconsistent with your final design, you will have an opportunity to submit revised answers on Due Date 2.

Your plan should be no more than 5 pages long.

On Due Date 2

On Due Date 2, you must submit all of your code to Marmoset, together with a Makefile, such that issuing the command `make` builds your project. Your executable should be called `watopoly` for Watopoly, `cc3k` for ChamberCrawler 3000, or `chess` for Chess.

In addition, you must submit a final design document. It must outline the final, actual design of your project, and how it differed from your design on Due Date 1 (if it did). You should include an updated UML, reflecting the actual structure of your project. Do this even if it is the same as the original UML.

Your document should provide an overview of all aspects of your project, including how, at a high level, they were implemented. If you made use of design patterns, clearly indicate where.

Your system should employ good object-oriented design techniques, as presented in class.

Include all answers to questions posed within the project specification, and indicate how they differ from the answers you gave on Due Date 1 (if they did).

You should not expect the TA's to read through all of your code. Therefore, your design document should stand alone – the TA should not need to have your code open in order to understand your document. However, if you wish to highlight certain aspects of your design, you should indicate clearly where they can be found in your code, if the TA wants to have a look.

The most important aspect of your design document is a discussion of how your chosen design accommodates change, as described earlier in this document. You should also discuss the cohesion and coupling of your chosen program modules. Most of the design portion of your grade will be based on this summary.

Finally, answer the following questions:

1. What lessons did this project teach you about developing software in teams? If you worked alone, what lessons did you learn about writing large programs?
2. What would you have done differently if you had the chance to start over?