

Monte Carlo Project: Scoring Criteria

Due Date: Friday, 5/22/2015

Later submissions, up to June 1, are permitted only if approved in your milestones. However, June 1 is a hard deadline, since your grades have to be submitted early on June 2. It is strongly recommended that you choose an earlier date in your milestones.

Points Possible: 200 per pair (300 for the 3-person groups)

Points will be divided equally among the group members unless there is a compelling reason to override. If you have a group member who is not pulling his or her weight, please speak to that person and describe your concerns. If, after speaking to the person, there is not sufficient improvement, you may speak to Mr. Hansen and discuss a possible reallocation of points. *No points will be reallocated in situations where you have not first spoken to the other person.*

Project Components

There are four required components to your project, and each component will be weighted as 25% of the overall project score. *Important:* All four components must be submitted in hard copy so that comments can be written in the margins.

Component I: Requirements Document

Describe the analysis you intend to perform. This should be a reasonably detailed document (target: 1½ to 2 pages) describing the aspects of the project that are nonstandard and proposing what types of analysis you intend to perform. You do not need to describe the standard aspects of your analysis (e.g., the rules of Scrabble). Be sure to describe the unknown parameter(s) of the problem that you hope to estimate through your analysis; these will normally be means or probabilities. For example, the probability of winning at Scrabble when a certain strategy is used in competition with another strategy would be an example of an unknown parameter that you hope to estimate. Describe approximately how many runs you intend to perform for each aspect of your analysis. If you are computing confidence intervals (recommended but not required) for your parameters, be sure to consult Mr. Hansen for the correct formulas to use.

Component II: Detailed Design and Milestones

Charts and diagrams are recommended. Flowcharts, if used, do not need to conform to formatting standards, except that decision blocks should always be diamonds. Your document should clearly lay out the design (e.g., class names, inheritance structure, general flow) of your proposed project. Block diagrams of your program structure (classes, methods, etc.) would be helpful. Milestones (approximately 4 to 7 of them) should be accompanied with target dates. Later adjustments to milestone dates and/or project requirements are possible but must be negotiated in a timely fashion with Mr. Hansen. No last-minute changes!

You may request feedback for any of your components before you submit them for grading. If you choose to take advantage of this (a strategy that is virtually guaranteed to improve your grade), be sure to include at least one extra day in your milestone dates for each document that requires preliminary feedback.

Component III: Source Code

Use all the things we have talked about all year long: clear coding conventions, consistent indentation style, self-documenting variable names (except for loop counters, which can be i, j, k), methods that have logical names, and boolean flags that make sense. No dead code is allowed, obviously. Comments (*helpful* and *sparse*) must include your names, the date, the version number (if applicable), and a short description of purpose. At least one “snazzy” comment block resembling the following should be included:

```
/******\
|                                     |
|      comment text goes here      |
|                                     |
\*****/
```

Component IV: Final Report

Target length is about 3 pages, but a shorter report may be perfectly acceptable. The use of charts and graphs (e.g., scatterplots, bar graphs, time series) is strongly encouraged. Hand-drawn graphs are acceptable. Describe your findings, and if any were surprising, be sure to explain why they surprised you.

Target due date is May 22. Later dates are acceptable if listed in your milestones. However, nothing received after June 1 can be graded, since grades have to be turned in early on the morning of June 2.