Guidelines for writing the report for milestone 2

Deadline: December 19th

The report does not need to be extensive but it must be concise, complete, and correct. Conciseness is important in terms of content and explanations, focusing on what has been done and explanations of the results. A long report is not necessarily a better report, especially if there are aspects of the design or the experiments that remain unexplained. Completeness implies that the report should give a comprehensive idea of what has been done by mentioning all key aspects of the modeling and analysis effort. You are allowed to modify the system designed in Milestone 1 (changes must be explained in the report) and you can run new experiments. If you have been told that something must be corrected in your system as a result of the evaluation of Milestone 1, please do so and indicate the corrections in the report. Limited analysis because of flaws in the system or lack of experimental data from milestone 1 are not valid arguments for an incomplete report. If bugs or lack of data prevent you from doing a correct analysis, the system must be debugged and new data collected.

Remember that this is a report about modeling and analyzing the system you have designed and built, using the experimental data you have collected. There is no unique way to do the report and you may choose to focus on different aspects of the system as long as you deliver a complete analysis of its behavior. Please do not contact us seeking confirmation and assurances about, e.g., whether the report is sufficient, your interpretation of the data, validation of concrete aspects of your model, or whether you have done enough experiments. Making those decisions is your job and part of what the course will evaluate.

The milestone is worth 300 points.

The report should be organized in sections as indicated below and each section should address at least the questions mentioned for each point. You might be called for a meeting in person to clarify aspects of the report or the system and to make a short presentation of the work done. By submitting the report, you confirm that you have done the work on your own, the data used comes from experiments you have done, you have written the report on your own, and you have not copied neither text nor data from other sources.

1. System as one unit
   - M/M/1 model of entire system based on trace
   - Characteristics and behavior of the model built
   - Comparison with the experimental data
   - Analysis of the model and the real behavior of the system (explain the similarities, the differences, and map them to aspects of the design or the experiments)
2. **Analysis of system based on scalability data**
   - Queuing models for different configurations (as requested in milestone 1)
   - Characteristics and behavior of the models built (this will be a series of models)
   - Comparison with the experimental data
   - Analysis of the model and the real scalability of the system (explain the similarities, the differences, and map them to aspects of the design or the experiments)

3. **Modeling of the components as independent units**
   - M/M/m models of database and middleware
   - Characteristics and behavior of the model built
   - Comparison with the experimental data
   - Analysis of the model and the real behavior of the component (explain the similarities, the differences, and map them to aspects of the design or the experiments)

4. **Model of systems as a network of queues**
   - Model
   - Characteristics and behavior of the model built
   - Comparison with the experimental data
   - Analysis of the model and the behavior of the system
   - Bottleneck analysis and identification
   - Explanation of the bottlenecks

5. **Apply interactive laws to experimental data from milestone 1**
   - Check validity of experiments using interactive law
   - Analyze results and explain them in detail

6. **2^k analysis if not done in milestone 1**