

## DP Preliminary Report, Spring 2018

The preliminary report in 6.033 has several purposes: to provide a framework within which you can articulate your preliminary design and justifications for design choices; to get feedback from technical instructors which will guide the remainder of the design and/or modifications to the design; and to gain mastery of many of the skills needed to write a systems design paper. Like the final design report, the preliminary report explains how your design works to solve the assigned problem. It further demonstrates that the design meets all the requirements, and justifies design decisions.

You should be able to characterize your proposed system at a high level, and show how it will meet requirements. Doing so may require you to explain some of the implementation details. Your description should be written for a broad range of systems experts from different fields, and should build on key reasoning patterns and concepts (use requirements for behaviors and properties in relevant use cases; techniques used to produce desired outcomes), using specific technical language as appropriate.

The DP Preliminary Report should be approximately 2500 words.

- Title** names/describes your project.
  - I.e. “Wireless Network Optimization” not “6.033 DP”
- Introduction** presents the problem and introduces your solution
  - Introduces the purpose of the system with a brief description of basic features and functions.
  - Defines the problem; identifies needs that current systems do not meet
  - Briefly presents your design approach and how it solves the problem, articulating your major design choices and key or novel techniques
- System design** fully presents your design to solve the main problem
  - Organizes the main body of the text by system outcomes, or other conceptual categories
  - These categories highlight the problem-solution logic that determines design choices
  - Clearly links design choices, techniques, or strategies to the behaviors and properties they produce
  - Justifies your choices with use cases, scenarios, and design principles
  - Identifies major design decisions, tradeoffs, and choices made
  - Includes a system diagram (titled, labeled, captioned, and referenced in the text)
    - May also include figures to illustrate complex or challenging concepts
- Conclusion** briefly summarizes how your design will meet the requirements, and notes problems which remain to be resolved.
  - May be a separate section or may be the final paragraph
- Overall** the language of your report should be professional but not legal or bureaucratic.
  - We expect correct grammar and syntax, careful proofreading, and visually appealing layout