CS 421 Final Project Proposal

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Paper Reference

Brian McNamara and Yannis Smaragdakis. "Functional Programming in C++." In *Proceedings of the Fifth ACM SIGPLAN International Conference on Functional Programming (ICFP '00)*, 2000, pp. 118–129. Association for Computing Machinery, New York, NY, USA. Available at: `https://doi.org/10.1145/351240.351251`

Scope

Explore and summarize the concepts presented in the paper *Functional Programming in C++* by Brian McNamara and Yannis Smaragdakis. The primary focus will be on understanding and explaining what I learn about the FC++ library and functional programming paradigms within the C++ language. In this summary, I will explore and concisely explain many relevant concepts; including the implementation of higher-order polymorphic functions, subtype polymorphism, and the efficient use of reference counted function objects.

Implementation Schedule

- **July 18:**
  - Thoroughly read and understand the paper "Functional Programming in C++."
- **July 19-20:**
  - Outline the key concepts and create a rough draft of the project report summary.

- **July 21-23:**
  - Provide specific examples and explanations based on the paper's content.
  - Use additional references from external resources to supplement the information provided.
- **July 24-25:**
  - Try working with an FC++ library myself and report my findings and understandings in relation to what I've learned from the paper.
- **July 26:**
  - Conduct a comprehensive review of the project report summary, improving it anywhere I can.
  - Ensure clarity, completeness and make sure things flow together overall.
- **July 27:**
  - Finalize everything, ensuring all sections are complete and well-documented.
  - Submit the project report via email to Dr. Beckman.

Responsibility

I will be working alone on this project, thus I will be responsible for all aspects of the research, writing, and documentation done.