GLASS

Milestone One Progress Report

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Now with a fancy new logo!

Milestone One Task Matrix

Task	Completion %	Tommy	Xander	Todo
Investigate tools	85%	40%	45%	Investigate other parser generators
Hello world demo	85%	45%	40%	Parser generator demos
Resolve technical challenges	60%	30%	30%	Continued research
Requirements Document	100%	80%	20%	
Design Document	100%	20%	80%	
Test Plan	100%	80%	20%	

Task Discussion

Tool Investigation

- Programming Languages
- GUI Frameworks
- XML Querying Frameworks
- Existing Parser Generators

Java

- **Time efficiency:**
  - Variable updating: 0.80 seconds
  - String array population: 1.03 seconds
  - Tree instancing: 0.29 seconds
  - Tree traversal: 0.00541 seconds
- **Memory efficiency:**
  - Integer array: 26.2 MB
  - String array: 5.85GB
  - Large tree: 30.6 MB
- **Familiarity:** 10/10
- **Popularity:** 9/10
- **Readability**: 8/10
- **Scalability:** Very scalable
- **Portability:** Highly portable
- **Functionality:** 8/10

Task Discussion (continued)

Hello World Demos

- Programming language demos for Python, C++, Java, and Rust
- Parser Generator Demos
- XML Querying Demos
- GUI Demos

Task Discussion (cont.)

Resolving Technical Challenges

- Defining syntax specification format
- Syntax specification to parse tree
- Macro system

Research was done investigating all three of these challenges, and we will continue to research these challenges until we have concrete systems in place for all three.

Task Discussion (continued)

Created Documents

- Requirements Document
- Design Document
- Test Plan

Milestone Two Plan

Task	Tommy	Xander
Parser generator intermediary checkpoint	Implement core parser generator features	Test and demo parser generator
Investigate other parser generators	Investigate 2-3 parser generator tools	Investigate 2-3 parser generator tools
Solidify syntax specification format “version one”	Groups members will work together in order to ensure all necessary features are implemented	
Implement, test, and demo XML output	Test and demo XML output	Implement core XML manipulations for macros

Discussion of Planned Tasks

Parser Generator Intermediary Checkpoint

- The parser generator itself should be mostly functional by the end of Milestone Two.
- Syntax specification format may still be clunky. This will be resolved during future milestones.
- Care will be taken to ensure all code components remain modular.

Discussion of Planned Tasks (cont.)

Investigate Other Parser Generators

- Investigate 4-6 competing tools, document the pros and cons of their features.
- The goal here is to see what they get “right” and “wrong”, what feels intuitive and what feels cand use that information to help us design our tool.

Discussion of Planned Tasks (cont.)

Create Syntax Specification Format “Version One”

- Based on investigations mentioned on the previous slide, we will design the first “official” version of our syntax specification format.

Discussion of Planned Tasks (cont.)

Implement, Test, and Demo XML Output

- Successfully output “XML-ized” source code, marked up in a tree like structure based on the structure of the user-specified grammar for the language.

Faculty Advisor Feedback

- Advisor agrees Java is a good choice.
- Advisor emphasized the importance of investigating other tools.
- Advisor recommended XML tools to research.
- Advisor was pleased with progress already made towards parser generator.
- Advisor agreed that the details of the syntax specification format aren't incredibly important to hammer down immediately.

Questions?