

Design Document for CS142 Project 1: Web Browser Prototype

Overview

This document outlines the design for a prototype web browser that allows users to navigate through a set of plain text files linked by anchors. The browser will facilitate seamless movement between documents using commands while ensuring modularity and clarity in code implementation.

Goals

- Implement a file viewer that supports document navigation through anchors.
- Enable users to follow links between documents via commands.
- Maintain a history of visited files to allow backward navigation.
- Format text according to specified rules to enhance readability.

Features

1. **Anchor Handling**
 - Anchors in the format `<a filename text>` will be detected, and displayed as `<text>[n]`, where `n` is a unique identifier for each anchor within the document.
2. **Navigation Commands**
 - `go`: Opens the file associated with a selected anchor by its number.
 - `back`: Returns to the previous file visited, maintaining a history stack.
 - `open`: Opens a file specified by name.
3. **Text Formatting**
 - Implement line wrapping based on a user-defined maximum line length.
 - Handle `
` and `<p>` elements to control line breaks and paragraph spacing.

System Components

The project will be divided into the following key components: file handling module, anchor processing module, navigation module, and formatting module. Each component will be responsible for a subset of the overall functionality as follows:

1. File Handling Module

- Responsible for reading and parsing text files.
- Parses anchors, line breaks, and paragraph breaks.

2. Anchor Processing Module

- Detects anchors in the text and assigns unique numbers.
- Formats anchors for display as `<text>[n]`.
- Handles special elements like `
` and `<p>` for appropriate spacing.

3. Navigation Module

- Manages file history for `back` command functionality.

4. Formatting Module

- Formats text output based on user-defined maximum line length.

User Interaction

1. Input Flow

- Prompt user for maximum line length.
- Display content of the current file with anchors formatted.
- Accept user commands (`go`, `back`, `open`) to navigate.

2. Output Flow

- Present formatted text in the console.
- Display anchor text with numbering for user selection.

Conclusion

This document serves as a foundational guide for the development process. By adhering to the principles of modularity set forth, I aim to create a robust, maintainable, and user-friendly application.

Team Members

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Status Report

A status report will be included upon project completion to detail functionality and any outstanding issues.