

Elision Based Text Zooming

Project Update

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Motivation

- Computers make a lot of things easier
- Reading with computers
 - The Web
- Is reading easier online than on paper?
 - Reading online requires scrolling
 - Scrolling is hard: Either
 - Scroll too quickly to read the text, or
 - Take forever to find what you're looking for

Scrolling

- Easier than turning pages in a book?
- Page Up & Page Down

Idea

- **Beginnings** of paragraphs are most important
 - Pre-reading
- **Hide** everything else
- Give users **control** over what is hidden
- **Remember** the user's choices

Idea in Detail

- Control “zooming” and scrolling with the mouse
- Hide/show paragraphs a line at a time as zoom increases/decreases
- When zoomed out, display clicked paragraphs in full
- Visually mark clicked paragraphs

Other Approaches

- Zoom out by making text smaller
- Multi-scale Table of Contents
- Source code folding

Dataset

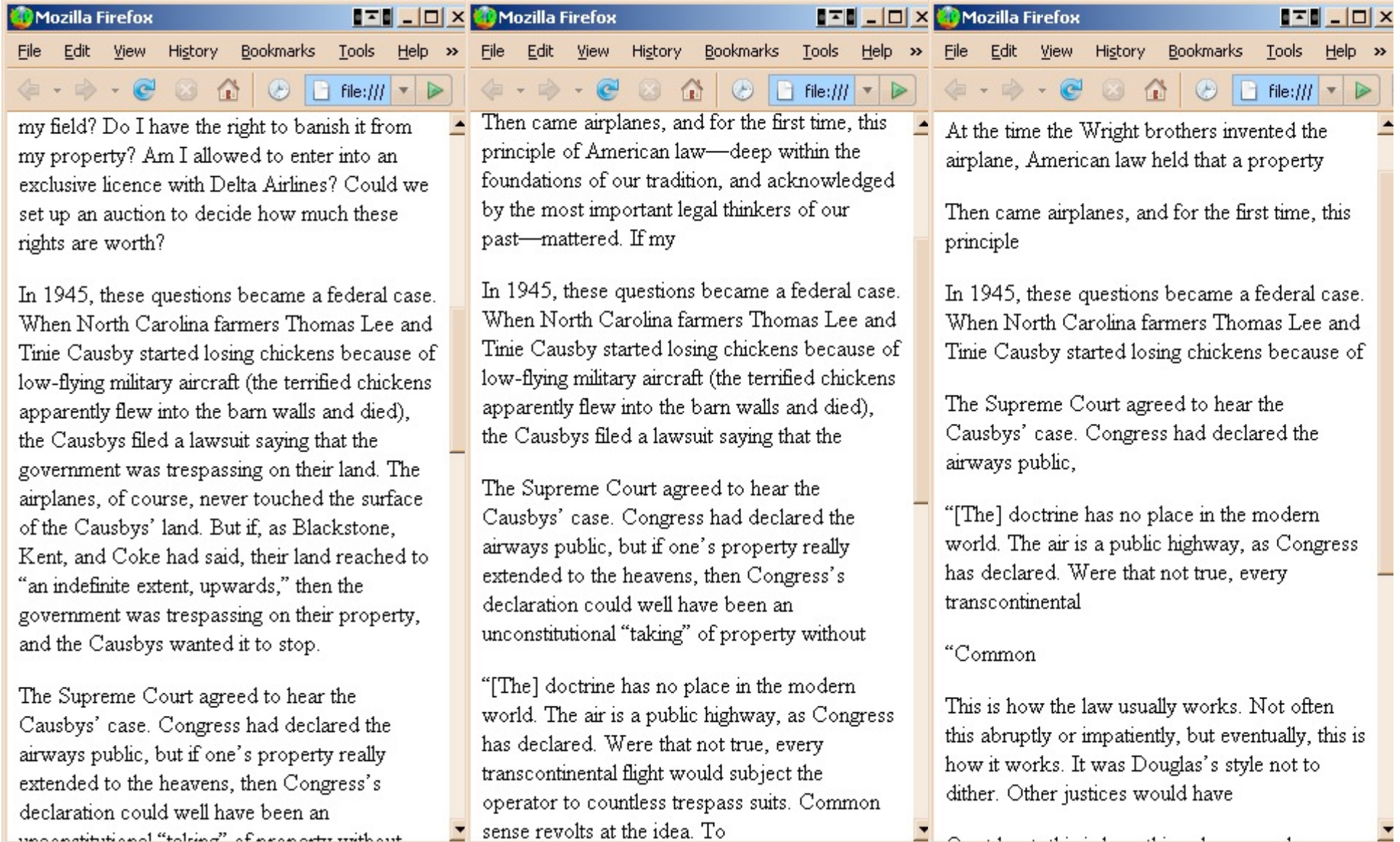
- World Wide Web
 - News Articles
 - Academic Papers
 - Online Books

Implementation

- Extension to Firefox Web Browser
 - JavaScript
 - XML DOM transformations
- Visual Feedback:
 - Dynamically modify page
 - Draw zooming/scrolling widget in front of page

Screen Shots

Zooming in on an excerpt from Free Culture by Lawrence Lessig:



Challenges

- Determine what a **paragraph** is – more than one representation:
 - <p>
 -

 -
 - ...

Challenges (cont.)

- Find line breaks due to wrapping
 - Hard? Easy? Don't know yet.
 - Firefox documentation is incomplete

Challenges (cont.)

- Deciding what to hide
 - Beginnings of paragraphs important, but maybe the ends are as well
 - At some point, need to hide entire paragraphs
 - Which ones?
 - Treat long paragraphs differently than short paragraphs?

Challenges (cont.)

- User choices introduce compromise

Challenges (cont.)

- Not everything is plain text
 - Images
 - Tables
 - Lists
 - Formatting

Challenges (cont.)

- Zooming without Scrolling

Current Progress

- Learned how to write Firefox extensions
- Implemented framework for hiding and unhiding text
- Working prototype
 - Word-at-a-time zooming
 - Only handles `<p>` delimited paragraphs
 - No scrolling
 - No selection of paragraphs

Questions? Suggestions?