MICHIGAN STATE UNIVERSITY Project Plan Dark Theme Darkening

The Capstone Experience

Team Mozilla

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From Students... ...to Professionals

Functional Specifications

- Expand the Firefox theming API to support theming of additional parts of the browser
 - Bookmarks bar, arrow panel, page-loading indicator
- Increase Google Chrome compatibility
 - Add compatibility for Chrome only theming features to allow for the use of Chrome Themes in Firefox
- Update the Firefox Dark Theme to use the expanded API.
 - Add dark coloration for bookmarks, menus, etc.

Design Specifications

- Users are less likely to switch browsers once personalized
- New theming API will allow developers to create more immersive themes
- In-Product pages
 - Browser settings pages need theming for icons, background, etc.
- Menus
 - Toolbars and select dropdowns are able to be themed
- Autocomplete history pop-up
 - Customizable text and background colors
- Theme Transitions
 - Current state is jumpy and disrupting
 - Users should see a smooth transition between themes

Screen Mockup: In-Product Page

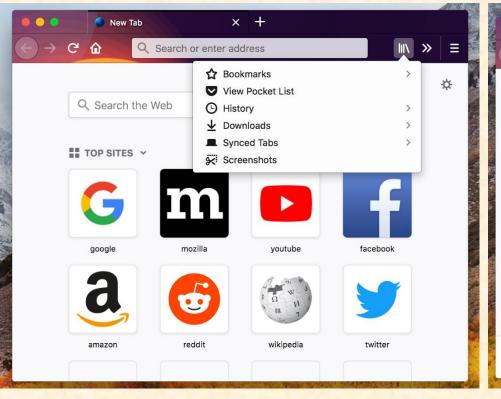
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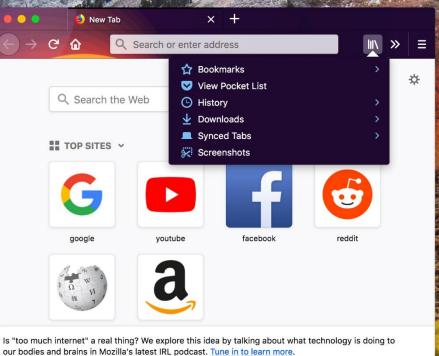
Screen Mockup: Bookmarks Bar

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Team Mozilla Project Plan Presentation

Screen Mockup: Menus

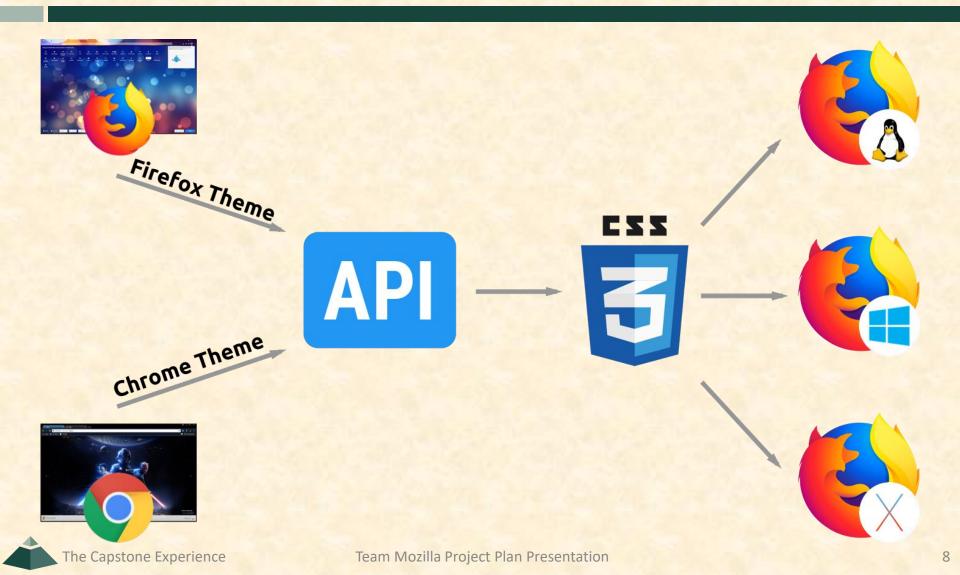




Technical Specifications

- Use JavaScript and CSS to expand theming API
 - Compatible with Chrome and Firefox theme formats
 - Themes are comprised of a JavaScript file and a JSON file
- Use Mercurial to upload files to Bugzilla review board
 - Changes are reviewed by Firefox contributors
 - Once review is passed, changes are pushed to the Nightly version of Firefox
- Use artifact builds to reduce compilation time
 - Download pre-built C++ components rather than building them locally
 - Trade bandwidth for time

System Architecture



System Components

- Hardware Platforms
 - Ubuntu Linux Test System
 - Microsoft Windows Test System
 - Apple MacOS Test System
- Software Platforms / Technologies
 - Mercurial for version control
 - JavaScript and CSS to implement API
 - Bugzilla and MozReview for code review
 - Atom text editor

Risks

Large Repository

- Description: Firefox is over 35 million lines code, finding a place to start is challenging.
- Mitigation: Using the Searchfox web tool to locate files of interest, rather than grep.

Platform Testing

- Description: Need to efficiently code for all platform without breaking compatibility.
- Mitigation: Write unit tests using Mozilla's testing suite / physically test on all platforms.

Cross-Browser Themes

- Description: Compatibility when transitioning themes from Google Chrome to Firefox
- Mitigation: Review resources to get a comprehensive understanding of Google Chrome themes.

Code Optimization

- Description: Need to ensure that any additions that are made do not slow down the browser and meet Mozilla's coding standards.
- Mitigation: Run unit testing on any added code that tests running times against thresholds and submit code for review.

Questions?

