Project Plan
Taking Firefox Screenshots Testing Suite to 11

The Capstone Experience

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Fall 2017
Functional Specifications

- Improve Firefox Screenshots Testing Suite to make it easier for developers to catch visual bugs and unintentional changes
- Increase functionality and reliability of screenshot testing tool
  - Add automated cropping
  - Add screenshot test cases
  - Better integrate output with Mozilla’s testing frameworks
  - Reduce intermittent failures
Design Specifications

• The graphical components of the tool are outside the scope of the project
• The screenshot tool is command line based
Screen Mockup

• Like design specifications, screen mockups are not applicable to the project
• Mozilla’s testing infrastructure does have tools to visualize test results, but are not part of this project
Technical Specifications

• Mozscreenshots extension
  ▪ Ran by Mochitest
  ▪ Manipulates Firefox UI
  ▪ Responsible for taking and saving screenshots
  ▪ Will apply cropping to these screenshots here
  ▪ Will improve output to be more interpretable by other testing tools

• Mozilla’s testing infrastructure
  ▪ Web UI and command line tool for interpreting mozscreenshots’s output
  ▪ Largely outside the scope of this project
System Architecture

Entry Points
- mozscreenshots CLI
- Local

Mozscreenshots Extension
- Configurations
- TestRunner.jsm
- HTML5 cropping canvas
- Screenshot.jsm

End Points
- Compare screenshots
- Local Data
- Fetch screenshots
- S3 Bucket
- Try Server Or CI Server
- Web UI

Try Server
- mach try
- Nightly Continuous Integration

Continuous Integration
System Components

• Hardware Platforms
  ▪ The project does not require specific hardware

• Software Platforms / Technologies
  ▪ JavaScript, HTML5 Canvas, XUL, Python
  ▪ Mercurial (VC), Bugzilla, IRC
  ▪ Mochitest, Try servers
  ▪ Largely implemented as Firefox legacy extension
Testing

• There is no testing framework for this tool
• Our contributions are reviewed by other developers of Firefox
• If there are problems with the tool, the Nightly community may be able to catch them
• Developing tests for the tool is not part of the specification, but could be a stretch goal
Risks

• Debugging intermittent failures
  ▪ Recreating intermittent failures is difficult, and certain scenarios won’t allow us to access the log files directly
  ▪ Focus on fixing locally replicable issues, test on a broad range of systems, and client has agreed to attempt to provide copies of restricted log files

• Limited and disorganized documentation
  ▪ Documentation is dispersed and sometimes non-existent
  ▪ Communication with developers via IRC with questions concerning the software is vital. Also, all code written for this project will be kept in personal documentation

• Learning Mozilla specific technologies
  ▪ Mozilla has many in-house technologies: JSM, XUL/XBL, Mach, Try servers, Mercurial
  ▪ Identify the relevant technologies and restrict our focus to those
Questions?