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Jacob
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Schedule

Result

Lessons

Demo

ExplainShell for Chrome

Justin Gallagher, Ted Li, Jacob Zimmerman, Howard Chen

Carnegie Mellon University

December 2, 2014

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- 2 Rationale
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Project Overview

- Chrome extension to provide easy lookup of bash commands using explainshell.com
- Backend analytics site to show trending commands, referring sites, popular pages, etc.

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Rationale Behind ExplainShell

- Random bash commands found online pose threat to unsuspecting users
 - people have a risk of running malicious or insecure commands

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Rationale Behind ExplainShell

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 - people have a risk of running malicious or insecure commands
- Often difficult to look through man pages for bash command usage
 - ExplainShell for Chrome attempts to reduce the effort of lookup to bare minimum

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Rationale Behind ExplainShell

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 - people have a risk of running malicious or insecure commands
- Often difficult to look through man pages for bash command usage
 - ExplainShell for Chrome attempts to reduce the effort of lookup to bare minimum
- Helps users discover and explore more bash commands

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- Develop Chrome Extension that identifies and extracts bash commands from web pages
 - Add a link to each bash command that redirects users to the usage explanation on explainshell.com
 - Display friendly in-page popup of command usage when users hover over a bash command

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 - Display friendly in-page popup of command usage when users hover over a bash command
- Develop backend analytics site to keep track of bash commands that users lookup
 - Provides analytics based on what commands are being searched for
 - Helps users explore and discover commands they are not familiar with

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- Contribute to ExplainShell API

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- Develop backend analytics site to keep track of bash commands that users lookup
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 - Helps users explore and discover commands they are not familiar with
- Contribute to ExplainShell API
- Eventually publish on Chrome Web Store for people to use

ExplainShell for Chrome

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Technologies Used

- Chrome Extension: HTML/CSS/Javascript
- Backend analytics site: Node.js
- VC with Git (on Github)

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• Rudimentary version of Chrome extension: Allow users to select text and lookup selected command. Goals

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• Rudimentary version of Chrome extension: Allow users to select text and lookup selected command.



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• Rudimentary version of Chrome extension: Allow users to select text and lookup selected command.

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- Rudimentary version of Chrome extension: Allow users to select text and lookup selected command.
- 2 Develop heuristics to identify and extract bash commands automatically from a web page

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- 3 In-page link to jump to explainshell.com

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You can force grep to ignore word case i.e match boo, Boo, BOO and all other combination with the -i option:

\$ grep -i "boo" /etc/passwd

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- Rudimentary version of Chrome extension: Allow users to select text and lookup selected command.
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- **5** Develop backend analytics site

Demo

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- 2 Develop heuristics to identify and extract bash commands automatically from a web page
- 3 In-page link to jump to explainshell.com
- 4 Insert in-page summary on hover
- 6 Develop backend analytics site
- 6 Integrate analytics site with Chrome extension

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Original Schedule

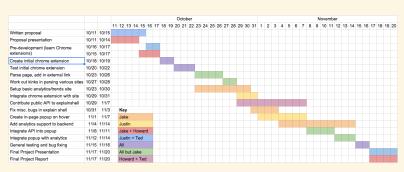


Figure 1: Gantt Chart of original plan

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Revised Schedule

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|---------------------------------------|-------|-------|------------|-----|----|----|----|----|-----|----|-----|------|-----|------|----|----|------|-----|----|---|----|----|------|-----|-----|
| | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Fix final bugs in chrome extension | 11/15 | 11/16 | Te | ed | | | | | | | | | | | | | | | | | | | | | |
| Integrage chrome extension with site | 11/17 | 11/20 | Jake + Ted | | | ed | | | | | | | | | | | | | | | | | | | |
| Contribute public API to explainshell | 11/15 | 11/20 | Howard | | | | | | | | | | | | | | | | | | | | | | |
| Integrage public API with trends site | 11/21 | 11/24 | | | | | | | Jak | e+ | How | vard | | | | | | | | | | | | | |
| Integrate public API with extension | 11/25 | 11/26 | | | | | | | | | | | Jus | stin | | | | | | | | | | | |
| General bug fixes and maintenance | 11/27 | 12/2 | | All | | | | | | | | | | | | | | | | | | | | | |
| Final Project Presentation | 11/20 | 12/2 | | | | | | | | | | | | | | Ju | stin | + T | ed | | | | | | |
| Final Project Report | 12/3 | 12/7 | | | | | | | | | | | | | | | | | | | Ja | ke | + Ho | owa | ard |

Figure 2: Gantt Chart of revised plan

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Results

- Chrome extension supports embedded links and popups
 - Still no public API for explainshell.com
 - Popups pull up the full explainshell website
 - HTTPS not supported
 - Reports correctly to the trends website

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Results

- Chrome extension supports embedded links and popups
 - Still no public API for explainshell.com
 - Popups pull up the full explainshell website
 - HTTPS not supported
 - Reports correctly to the trends website
- Fully functional trends website
 - Track number of uses of extension
 - View clicks by time, source page, domain, and command
 - No authentication, API call in plain text Javascript

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Demo

Lessons Learned

- Plan lots of extra time to accommodate for changing schedules
 - We were often behind deadlines, causing others to be held up by bottlenecks
 - Keep people accountable to deadlines

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Lessons Learned

- Plan lots of extra time to accommodate for changing schedules
 - We were often behind deadlines, causing others to be held up by bottlenecks
 - Keep people accountable to deadlines
- Contributing to open source software is a large undertaking
 - Need to read lots of documentation and unfamiliar code
 - Pull requests take time
 - A lot of work is necessary to do it properly

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Lessons Learned

- Plan lots of extra time to accommodate for changing schedules
 - We were often behind deadlines, causing others to be held up by bottlenecks
 - Keep people accountable to deadlines
- Contributing to open source software is a large undertaking
 - Need to read lots of documentation and unfamiliar code
 - Pull requests take time
 - A lot of work is necessary to do it properly
- Documenting your code is essential
 - We often had problems running each others' code
 - Time is wasted trying to decipher what code is doing rather than adding to it

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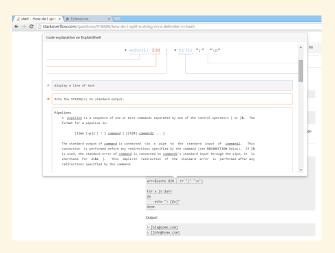


Figure 3: Screenshot of ExplainShell Chrome Extension