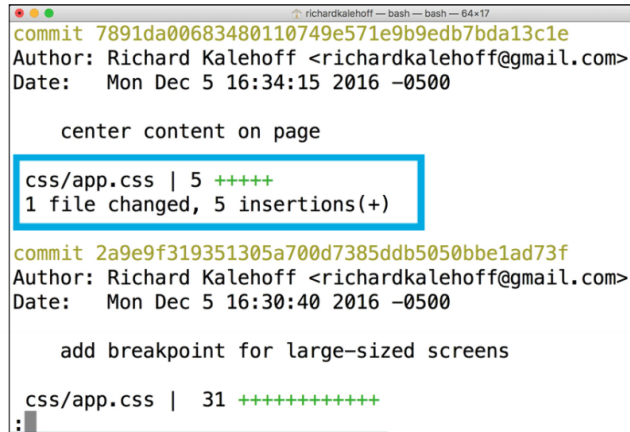


Viewing Changes

We know that `git log` will show us the commits in a repository, and if we add the `--stat` flag, we can see what files were modified and how many lines of code were added or removed. Wouldn't it be awesome if we could see exactly *what those changes were*?

If this isn't the best part of a version control system, I don't know what is! Being able to see the exact changes that were made to a file is incredibly important! Being able to say, "oh, ok, so this commit adds 5 pixels of border-radius to the button!".

For example, in the blog project, the commit `a3dc99a` has the message "center content on page" and modifies the CSS file by adding 5 lines. What are those five lines that were added? How can we figure out what those 5 lines are?



```

commit 7891da00683480110749e571e9b9edb7bda13c1e
Author: Richard Kalehoff <richardkalehoff@gmail.com>
Date: Mon Dec 5 16:34:15 2016 -0500

    center content on page

css/app.css | 5 +++++
1 file changed, 5 insertions(+)

commit 2a9e9f319351305a700d7385ddb5050bbe1ad73f
Author: Richard Kalehoff <richardkalehoff@gmail.com>
Date: Mon Dec 5 16:30:40 2016 -0500

    add breakpoint for large-sized screens

css/app.css | 31 ++++++++
:

```

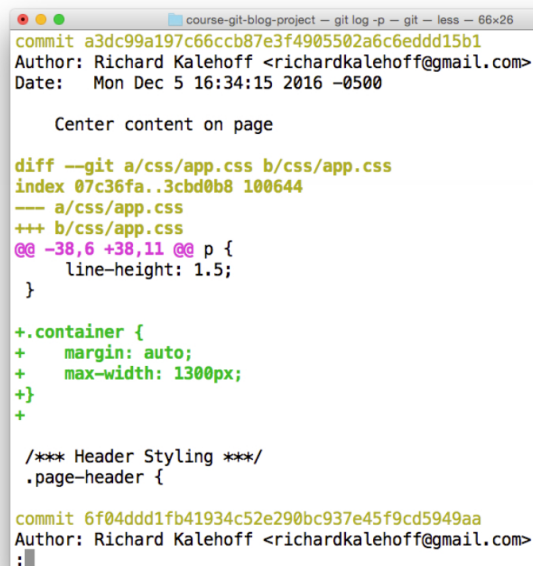
The Terminal application. The command `git log --stat` is run. It displays commits and zooms in on the first commit's stats showing the CSS file with 5 lines added.

`git log -p`

The `git log` command has a flag that can be used to display the actual changes made to a file. The flag is `--patch` which can be shortened to just `-p`:

```
$ git log -p
```

Run this command and check out what it displays.



```

commit a3dc99a197c66ccb87e3f4905502a6c6eddd15b1
Author: Richard Kalehoff <richardkalehoff@gmail.com>
Date: Mon Dec 5 16:34:15 2016 -0500

    Center content on page

diff --git a/css/app.css b/css/app.css
index 07c36fa..3cbd0b8 100644
--- a/css/app.css
+++ b/css/app.css
@@ -38,6 +38,11 @@ p {
     line-height: 1.5;
 }

+.container {
+  margin: auto;
+  max-width: 1300px;
+}
+

/** Header Styling */
.page-header {

commit 6f04ddd1fb41934c52e290bc937e45f9cd5949aa
Author: Richard Kalehoff <richardkalehoff@gmail.com>
:

```

The Terminal application showing the output of the `git log -p` command. Note - the colors in your terminal might differ.

```
Author: Richard Kalerhoff <richardkalerhoff@gmail.com>
Date: Mon Dec 5 16:34:15 2016 -0500

center content on page

diff --git a/css/app.css b/css/app.css
index 07c36fa..3cbd0b8 100644
--- a/css/app.css
+++ b/css/app.css
@@ -38,6 +38,11 @@ p {
     line-height: 1.5;
 }

+.container {
+  margin: auto;
+  max-width: 1300px;
+}
+
:|
```

```
diff --git a/index.html b/index.html
index 0381211..43f5b28 100644
--- a/index.html
+++ b/index.html
@@ -15,83 +15,85 @@
<h1>Expedition</h1>
</header>






- <main>
-   <h2 class="visuallyhidden">Articles</h2>
+ <div class="container">
+   <main>
+     <h2 class="visuallyhidden">Articles</h2>

-   <article>
-     <header>
-       <h3>Chasing the Snow</h3>
+   <article>
+     <header>
+       <h3>Chasing the Snow</h3>
```

The Terminal application showing the output of the `git log -p` command. Check below for a detailed description of the output.

Annotated `git log -p` Output

Using the image above, let's do a quick recap of the `git log -p` output:

-  - the file that is being displayed
-  - the hash of the first version of the file and the hash of the second version of the file
 - not usually important, so it's safe to ignore
-  - the old version and current version of the file
-  - the lines where the file is added and how many lines there are
 - `-15,83` indicates that the old version (represented by the `-`) started at line 15 and that the file had 83 lines
 - `+15,85` indicates that the current version (represented by the `+`) starts at line 15 and that there are now 85 lines...these 85 lines are shown in the patch below
-  - the actual changes made in the commit
 - lines that are red and start with a minus (`-`) were in the original version of the file but have been removed by the commit
 - lines that are green and start with a plus (`+`) are new lines that have been added in the commit

Further Research

- [Generating patches with -p](#) from the Git docs

QUESTION 1 OF 4

Using what you've learned so far about `git log`'s `-p` flag, look at the commit with the SHA `50d835d`. What line number in `app.css` should you start looking at to see what has been changed?

Tip - don't forget that while looking at the `git log` output, the `d` key will scroll *down* by half a page while the `u` key will scroll *up* half a page.

☐ line 63

☐ line 89

☒ line 127

☐ line 155

SUBMIT

QUESTION 2 OF 4

Using `git log` and any of its flags, what code was added in by commit `4a60beb`?

☐ color: #352d2d;

☐ color: #250808;

☐ color: #333333;

☒ color: #2e3d49;

SUBMIT

QUESTION 3 OF 4

`git log --stat` and `git log -p` are both really helpful commands. Wouldn't it be great if we could have both of their output at the same time? Hmm...

What happens when `git log -p --stat` is run?

☐ it displays only the patch information

☐ it displays only the stats

☐ it displays both with the patch info above the stats info

☒ it displays both with the stats info above the patch info

SUBMIT

In the video above, we looked at a commit that indents a lot of code. The patch output shows all of those lines as having been removed and then added again at their new level of indentation. Showing all of the indent changes makes it hard to tell what was actually added, though.

QUESTION 4 OF 4

What does the `-w` flag do to the patch information? For help, check [this Git docs page](#).

☐ it displays non-whitespace characters in blinking text

☐ it displays non-whitespace changes in bold

☒ it ignores whitespace changes

☐ it shows a separate patch area with just new/removed content

SUBMIT

`git log -p` Recap

To recap, the `-p` flag (which is the same as the `--patch` flag) is used to alter how `git log` displays information:

```
$ git log -p
```

This command adds the following to the default output:

- displays the files that have been modified
- displays the location of the lines that have been added/removed

- displays the location of the lines that have been added/removed
- displays the actual changes that have been made

NEXT