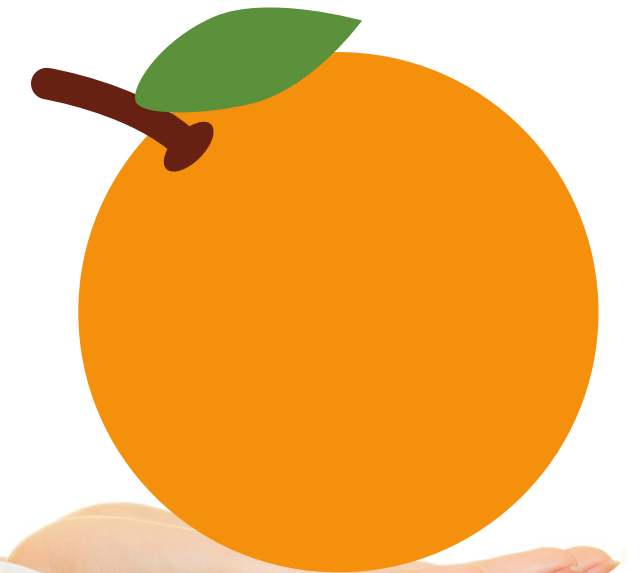


Comparisons With Git Diff





Git Diff

We can use the **git diff** command to view changes between commits, branches, files, our working directory, and more!

We often use git diff alongside commands like git status and git log, to get a better picture of a repository and how it has changed over time.





git diff

Without additional options, **git diff** lists all the changes in our working directory that are NOT staged for the next commit.



Compares Staging Area and Working Directory





git diff

git diff HEAD lists all changes in the working tree since your last commit.



What Does It Mean?



```
diff --git a/style/helpers.scss b/style/helpers.scss
index d530522..1a31a11 100644
--- a/style/helpers.scss
+++ b/style/helpers.scss
@@ -19,3 +19,14 @@
   @function pow($base, $exponent) {
     @return exponent($base, $exponent);
   }
+
+// Transition mixins
+@mixin transition($args...) {
+  -webkit-transition: $args;
+  -moz-transition: $args;
+}
+
+@mixin transition-property($args...) {
+  -webkit-transition-property: $args;
+  -moz-transition-property: $args;
+}
diff --git a/style/main.css b/style/main.css
index e05c4fe..8d875b1 100644
--- a/style/main.css
+++ b/style/main.css
@@ .6 +22,10 @@ h1 {
   width: 500px;
   margin: 0 auto;
   text-align: center;
   padding: 15px;
+  cursor: default;
+  -webkit-touch-callout: none;
+  -webkit-user-select: none;
+  -moz-user-select: none;
   background: #bbada0;
   border-radius: 6px;
   width: 500px;
```

Last Commit



red
orange
yellow
green
blue
purple

rainbow.txt

New Changes



red
orange
yellow
green
blue
indigo
violet

rainbow.txt

Git Diff Output

```
diff --git a/rainbow.txt b/rainbow.txt
index 72d1d5a..f2c8117 100644
--- a/rainbow.txt
+++ b/rainbow.txt
@@ -3,4 +3,5 @@ orange
yellow
green
blue
-purple
+indigo
+violet
```

Compared Files

For each comparison, Git explains which files it is comparing. Usually this is two versions of the same file.

Git also declares one file as "A" and the other as "B".

```
diff --git a/rainbow.txt b/rainbow.txt
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+++ b/rainbow.txt
@@ -3,4 +3,5 @@ orange
    yellow
    green
    blue
-   purple
+   indigo
+   violet
```


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+++ b/style/main.css
@@ -22,6 +22,10 @@ h1 {
     margin-top: 50px;
     position: relative;
     padding: 15px;
+  cursor: default;
+  -webkit-touch-callout: none;
+  -webkit-user-select: none;
+  -moz-user-select: none;
     background: #bbada0;
     border-radius: 6px;
     width: 500px;
```

File Metadata

You really do not need to care about the file metadata.

The first two numbers are the hashes of the two files being compared.
The last number is an internal file mode identifier.

```
diff --git a/rainbow.txt b/rainbow.txt
index 72d1d5a..f2c8117 100644
--- a/rainbow.txt
+++ b/rainbow.txt
@@ -3,4 +3,5 @@ orange
yellow
green
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+indigo
+violet
```

Markers

File A and File B are each assigned a symbol.

- File A gets a minus sign (-)
- File B gets a plus sign (+)

```
diff --git a/rainbow.txt b/rainbow.txt
index 72d1d5a..f2c8117 100644
```

```
--- a/rainbow.txt
+++ b/rainbow.txt
```

```
@@ -3,4 +3,5 @@ orange
```

```
yellow
```

```
green
```

```
blue
```

```
-purple
```

```
+indigo
```

```
+violet
```

Chunks

A diff won't show the entire contents of a file, but instead only shows portions or "chunks" that were modified.

A chunk also includes some unchanged lines before and after a change to provide some context

```
diff --git a/rainbow.txt b/rainbow.txt
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index e05c4fe..8d875b1 100644
--- a/style/main.css
+++ b/style/main.css
```

```
@@ -22,6 +22,10 @@ h1 {
    margin-top: 50px;
    position: relative;
    padding: 15px;
+   cursor: default;
+   -webkit-touch-callout: none;
+   -webkit-user-select: none;
+   -moz-user-select: none;
    background: #bbada0;
    border-radius: 6px;
    width: 500px;
```

```
@@ -63,8 +67,12 @@ h1 {
    background: #eee4da;
    text-align: center;
    line-height: 116.25px;
-   font-size: 60px;
-   font-weight: bold; }
+   font-size: 55px;
+   font-weight: bold;
+   -webkit-transition: 200ms ease;
+   -moz-transition: 200ms ease;
+   -webkit-transition-property: top, left;
+   -moz-transition-property: top, left; }
.tile.tile-position-1-1 {
    position: absolute;
    left: 0px;
```

Chunk Header

`@@ -3,4 +3,5 @@`

Each chunk starts with a chunk header, found between @@ and @@.

From file a, 4 lines are extracted starting from line 3.

From file b, 5 lines are extracted starting from line 3

```
diff --git a/rainbow.txt b/rainbow.txt
index 72d1d5a..f2c8117 100644
--- a/rainbow.txt
+++ b/rainbow.txt
@@ -3,4 +3,5 @@ orange
yellow
green
blue
-purple
+indigo
+violet
```

file a

@@ -3,4 +3,5 @@

file b

red

orange

yellow

green

blue

purple

red

orange

yellow

green

blue

indigo

violet

Changes

Every line that changed between the two files is marked with either a + or - symbol.

lines that begin with - come from file A

lines that begin with + come from file B

```
diff --git a/rainbow.txt b/rainbow.txt
index 72d1d5a..f2c8117 100644
--- a/rainbow.txt
+++ b/rainbow.txt
@@ -3,4 +3,5 @@ orange
```

```
yellow
green
blue
-purple
+indigo
+violet
```


Changes

Every line that changed between the two files is marked with either a + or - symbol.

lines that begin with - come from file A

lines that begin with + come from file B

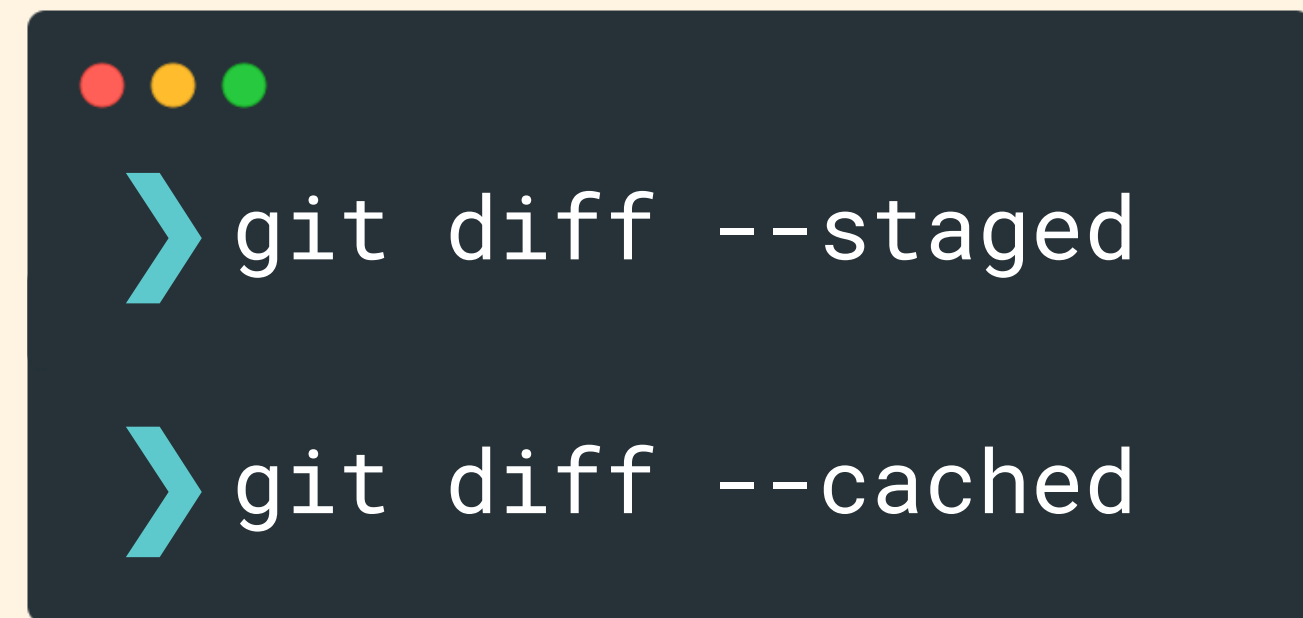
```
diff --git a/style/main.css b/style/main.css
index e05c4fe..8d875b1 100644
--- a/style/main.css
+++ b/style/main.css
@@ -22,6 +22,10 @@ h1 {
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    background: #bbada0;
    border-radius: 6px;
    width: 500px;
@@ -63,8 +67,12 @@ h1 {
    background: #eee4da;
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+   -webkit-transition-property: top, left;
+   -moz-transition-property: top, left; }
    .tile.tile-position-1-1 {
        position: absolute;
        left: 0px;
```



git diff

git diff --staged or **--cached** will list the changes between the staging area and our last commit.

"Show me what will be included in my commit if I run git commit right now"

A dark-themed terminal window with three colored window control buttons (red, yellow, green) in the top-left corner. It contains two lines of text, each preceded by a light blue prompt character (a right-pointing chevron).

```
> git diff --staged

> git diff --cached
```






Diff-ing Specific Files

We can view the changes within a specific file by providing git diff with a filename.



```
> git diff HEAD [filename]
```



```
> git diff --staged [filename]
```





Comparing Branches

`git diff branch1..branch2` will list the changes between the tips of branch1 and branch2

A dark blue terminal window icon with three colored circles (red, yellow, green) at the top left.


```
> git diff branch1..branch2
```





Comparing Commits

To compare two commits, provide git diff with the commit hashes of the commits in question.



```
> git diff commit1..commit2
```

