

Differencing Files

 coursera.org/learn/git-distributed-development/supplement/VhJce/differencing-files

The common UNIX **diff** command is part of the standard toolbox. It can show the difference between any two files, or applied recursively, two complete directory trees.

As a simple example, suppose **file1** contains:

This is the
contents
of a simple
file.

and **file2** contains:

This is the
contents of a slightly
different
file.

Simply comparing the files gives:

```
$ diff file1 file2
```

```
2,3c2,3
```

```
< contents
```

```
< of a simple
```

```
---
```

```
> contents of a slightly
```

```
> different
```

However, this is not the most useful form of output. One usually applies the **-u** option, to give what is termed the unified output which is used in **patch** commands:

```
$ diff -u file1 file2

--- file1      2010-01-03 15:48:15.933974603 -0600

+++ file2      2010-01-03 15:48:11.621507573 -0600

@@ -1,4 +1,4 @@
```

This is the

-contents

-of a simple

+contents of a slightly

+different

file.

Note the following:

- The --- notes the first file and +++ the second file.
- The @@ line gives the line number context for both files.
- Lines that have been removed in going from **file1** to **file2** are denoted by - and lines that have been added are denoted by +.
- The output also shows the context of the differences by showing the unmodified lines before and after the patch.

When comparing two directory trees the form used is often:

```
$ diff -Nr directory1 directory2
```

where the **-r** option forces a recursive descent into the trees, and the **-N** option forces files which have been added or deleted to appear in the differencing, instead of just generating a warning that a file is in only one directory tree.