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## Overview

This contains **some instructions for creating an ext2-formatted volume** plus some initial code that we're going to be using to inspect the volume that we've created.

## Creating a volume

Before we can take a look at an ext2-formatted volume, we need to *create* an ext2-formatted volume. Creating a volume (on Linux!) is straightforward:

```
# Create an empty file of a certain size using `truncate`:
truncate --size 256k ext2-volume

# Then format the volume as an ext2 file system:
mkfs.ext2 -d ext2-files/ -L comp3430-w25 -I 128 ext2-volume
```

These two commands will:

1. Create an empty file that's 256KB in size.
2. Format that empty file with an ext2 file system with the following properties:
  - The files in the directory `ext2-files/` will be put into the root directory (`/`) of the ext2 volume (this is the `-d` option).
  - The ext2 super block will have a label of `comp3430-w25` (this is the `-L` option).
  - The inodes in this volume will be 128 bytes in size (this is the `-I` option; the default is 256 bytes; take a look at the warning that `mkfs.ext2` prints when we specify that the inode size is 128 bytes!).

You should take a quick look at the file(s) in the directory `ext2-files/` beside this `README.md` file just to get a sense of what the content of these files is.

You may want to refer to the manual pages for the commands to get a more comprehensive description of their options.

## Inspecting the volume

We're going to start working with this volume on the command line using a program called hexdump. hexdump... [does exactly what it says on the tin](#): it will print out the contents of a file as hexadecimal values.

We're going to start by running:

```
hexdump -C -v ext2-volume | less
```

This says:

1. Print out the file in “canonical” form (this is the `-C` option). This is a display option for how hexdump will print out the bytes.
2. Don't skip printing out long sections of zeros (this is the `-v` option). There are long stretches of `0x00` in an ext2-formatted volume, and at least for now I want us to be able to see them.
3. Pipe the output to `less`: printing out 256,000 bytes (even if there are 16 bytes per line) will quickly fill our terminal. `less` will let us page through and search for strings.

In class we will be working with [Dave Poirier's ext2 documentation](#) to inspect this volume.