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Checksum entire folders

Generate checksum

To generate/calculate MD5 checksums for an entire folder, we can do this recursively with find.

```
find -type f -exec md5sum "{}" + > checksums.txt
```

This will generate the checksum for every file in the folder and save it to a text file.

Technically, MD5 sums aren't the best anymore but it's fast and nothing we're doing needs security anyways, so it's a good quick sanity check.

NOTE: I recommend using SHA-256 or SHA-512 over MD5 for anything important. I have found that SHA-512 is actually faster then SHA-256, so if you have the space, you might as well use it.

```
find -type f -exec sha512sum "{}" + > checksums.txt
```

Verify checksum

To verify that all the files are intact, just make sure it matches.

```
md5sum -c checksums.txt
```

This will run through and verify everything is good.

Alternatively, if you used SHA-512, then just replace md5sum with sha512sum.

```
sha512sum -c checksums.txt
```

Note on hash functions

MD5 is not secure anymore, but I was curious if the speed is a worthwhile tradeoff.

To find out which method is faster, you can use OpenSSL:

```
openssl speed sha256 sha512 md5
```

For me, the results are as follows: MD5 > SHA-512 > SHA-256

```
 The 'numbers' are in 1000s of bytes per second processed.
type             16 bytes     64 bytes    256 bytes   1024 bytes   8192 bytes
16384 bytes
```

```
md5             84098.48k   196370.90k   361047.62k   459072.69k   496273.01k
495352.10k
sha256          42210.06k    94892.37k   165544.29k   200256.39k   211776.94k
212728.10k
sha512          29820.25k   121823.76k   181359.94k   252842.09k   289037.40k
296808.81k
```