

Propositions for Scripting Exercises

These are just ideas, not elaborated propositions. Extend them to your liking. Thanks to Holger Dinkel and Chrysoula Pantzartzi for the ideas.

General “Unpacker”

Purpose:

Unpack a file or a number of files according to their packing or compression format (tar, gzip, zip, bzip, xz, see http://en.wikipedia.org/wiki/List_of_archive_formats for more ideas). This script can be used as a general wrapper around the various compression and packing tools with an uniform set of options

Usage Example:

```
$ ls -F
archive.tar.gz  text.txt  zuppfiler
$ unpack *
archive.tar.gz is a gzip compressed tarfile ... uncompressed and unpacked
text.txt is not compressed or packed ... skipping
zuppfiler is a zip compressed archive ... uncompressed and unpacked
$
```

Required tools and commands:

file, tar, gzip/gunzip, zip/unzip, bzip2/bunzip2, xz, etc.

Things to consider:

- The type of a file is not necessarily deductible from its extension
- What if the file doesn't have an extension at all?
- Depending on tool and how the file has been archived, the inpacking/uncompressing can result in files being created in a subdirectory or directly in the current working directory. Is this, what one wants?
- What if the destination directory already exists?
- Some tools preserve the original archive, others don't

Extendibility:

- Add option to keep/remove the original archives
- Add option to unpack files in a separate directory
- Add option to unpack files in directories named after the archive names. Check for already existing target directories!

Safety Backup Creator

Purpose:

Create a backup copy of a directory/file in a defined location. E.g. as a safety copy/fallback before applying changes to a dataset etc.

Usage Example:

```
$ backup.sh datadir
datadir contains 12 files and is 12 MB in size
Copying datadir to /home/fthommen/safety_backups/datadir_20-MAY-2014 ... done
$ backup.sh datadir2
datadir contains 154 files and is 3 TB in size
Sorry, /home/fthommen/safety_backups/datadir2_20-MAY-2014 already exists ...
aborting
$
```

Required tools and commands:

cp, rsync, du, ls, date

Things to consider:

- Already existing safety backups should not be overwritten
- Do you want or don't you want to keep the full original path in some form? (dirname, basename)

Extendibility:

- Add option to pack/compress the data

Column Chooser (advanced)

Purpose:

Write a script, which takes a textfile with columnar layout and a header line and prints out only columns with the named headers of a textfile with columnar layout

Datafile:

NAME	FIRSTNAME	BIRTHDATE	STREET	NO
Meier	Daniel	30-MAY-1990	Meyerhofstrasse	12
Mueller	Andreas	29-FEB-1960	Bahnhofstr.	1b
Schmid	Ariane	1-DEC-1990	Bahnhofstrasse	13
vonMyra	Nikolaus	15-MAR-270	Dezemberstrasse	6

Usage Example:

```
$ columnchooser.sh FIRSTNAME NO
Daniela 12
Andreas 1b
Ariane 13
Nikolaus 6
$ columnchooser.sh CITY
Sorry, no column "CITY" found
$
```

Required tools and commands

awk, eval

Extendibility:

- Add options to define alternate column separators (awk -F)
- Add option to customize the concatenation of the printed fields