Umeå University
Department of Applied Physics and Electronics

Linux as Development Environment 7.5 ECTS
5EL142 HT-16

Assignment 7 - Various Tools: groff, diff, patch, Awk, sed

1 Groff

Below follows the source for generating the man pages. The parsed postscript files are attached as files. They were generated by `man -t command > command.ps`.

1.1 Source man page for *calc_power_i*

```
.\" Manpage for calc_power_i.
.\" Contact lorenzottogerberls@gmail.com to correct errors or typos.
.TH CALC_POWER_I 1 "13 September 2016"
.SH NAME
calc_power_i \- library function to calculate power from voltage and current
.SH SYNOPSIS
.B #include <libpower.h>
.sp
.B float calc_power_i(float volt, float current);

.SH DESCRIPTION
Calculates
.I power in
.I watt
from
.I voltage and
.I current
according
.B volt * current.
.SH RETURN VALUE
function returns the power in watt as a float
.SH CONFORMING TO
C11
.SH BUGS
currently no bugs known
.SH SEE ALSO
.BR calc_power_r(1)
.SH AUTHOR
Lorenz Gerber (lorenzottogerber@gmail.com)
```

1.2 Source man page for *calc_power_r*

```
.\" Manpage for calc_power_r.
.\" Contact lorenzottogerberls@gmail.com to correct errors or typos.
.TH CALC_POWER_R 1 "13 September 2016"
.SH NAME
calc_power_i \- library function to calculate power from voltage and resistance
.SH SYNOPSIS
.B #include <libpower.h>
.sp
.B float calc_power_r(float volt, float resistance);
.SH DESCRIPTION
Calculates power in
```

```
.I watt
from
.I voltage
and
.I resistance
according
.B (voltage)^2 / resistance
in
.I ohm.
.SH RETURN VALUE
function returns the power in watt as a float
.SH CONFORMING TO
C11
.SH BUGS
currently no bugs known
.SH SEE ALSO
.BR calc_power_i(1)
.SH AUTHOR
Lorenz Gerber (lorenzottogerber@gmail.com)
```

2   Diff and Patch

2.1   Common flags for *diff* and *patch*

- **diff -r** recursive, is used to climb recursively down in subdirectories and compare the files.

- **diff -u** the unified display format. It is a variation of the context format which omits reduanant context lines hence it is very compact.

- **diff -N** Does treat inexisting files as empty, hence diff will show the whole existing file as difference

- **patch -p***number* **/ –strip=***number* strips parts of the path from files contained in the patch. By default, only the filename is returned. `-p0` returns the whole path, `-p1` strips one slash, `-p2` strips two slashes etc.

2.2   Diff and patch applied to a directory tree (2b assignment)

A directory directory structe *liborig/subdir/* with *file1.txt*, *file2.txt* in *liborig/* and *file3.txt*, *file4.txt* in *liborig/subdir/* was constructed then copied to *libwork/subdir* still containing the same files. Then *file2.txt* and *file4.txt* in the *libwork* directory were modified.

To check the difference visually on the screen, `diff -ruN liborig/ libwork/` was run. After verifying the changes, a patch file was written by adding the redirection `>` `patch.txt` to the prior diff command. The *patch.txt* file contains now the patches in the respective files with the full path from the directory where diff was called. Hence to apply the patches to the *liborig/* and it's subdirectory, we need to enter *liborig/* and apply the patch however with chopping off the first directory level (*libwork*) by using the *-p1* flag:

`patch -p1 < ../patch.txt.` *../* is used to access the actual patch file which is now one level higher in the directory structure.

3   Awk and sed

3.1   Print user name and comments from */etc/passwd*

```
awk -F : '{print $1, $5}' /etc/passwd
```

3.2   Use sed to replace swedish umlauts

A text from a swedish newspaper was copy/pasted into a file svensktext.txt. Then the following command was applied:

```
sed 's/[äÄ]/ae/g ; s/[åÅ]/aa/g ; s/[öÖ]/oe/g' svensktext.txt > modified.txt
```