cut

cut - remove sections from each line of files

```
echo "Welcom:to:embedded:linux" | cut –f 4 –d':'
echo "Welcom to embedded linux" | cut –f 4 –d' '
```

sed

sed is basically a find and replace program. It reads text from standard input (e.g from a pipe) and writes the result to stdout (normally the screen). The search pattern is a regular expression (see references). This search pattern should not be confused with shell wildcard syntax. To replace the string *linuxfocus* with *LinuxFocus* in a text file use:

```
cat text.file | sed 's/linuxfocus/LinuxFocus/' > newtext.file
```

This replaces the first occurance of the string *linuxfocus* in each line with *LinuxFocus*. If there are lines where *linuxfocus* appears several times and you want to replace all use:

```
cat text.file | sed 's/linuxfocus/LinuxFocus/g' > newtext.file
```

> A *regular expression*, or *regexp*, is a way of describing a set of strings.
>
> Regular expressions are such a fundamental part of awk programming.

awk

Most of the time awk is used to extract fields from a text line. The default field separator is space. To specify a different one use the option -F.

```
 cat file.txt | awk -F, '{print $1 "," $3 }'
```

Here we use the comma (,) as field separator and print the first and third ($1 $3) columns. If file.txt has lines like:

Adam Bor, 34, India
Kerry Miller, 22, USA

then this will produce:
Adam Bor, India
Kerry Miller, USA

There is much more you can do with awk but this is a very common use.
`awk '/test/ {i=i+1} END {print i}' file.txt`

Exercise:
book.txt

Linux	James	20.0
Java	Tracy	30.0
ARM-SoC	Morris	45.3

A regular expression can be used as a pattern by enclosing it in slashes. Then the regular expression is tested against the entire text of each record. (Normally, it only needs to match some part of the text in order to succeed.)

`awk ' /James/ {print $0}' book.txt`

`awk ' $2 ~ /se/ {print $0}' book.txt`

`awk ' $2 !~ /se/ {print $0}' book.txt`

`awk ' $3 > 20.0 {i=$3+i;} END {printf("totaal price %d\n",i)}' book.txt`