

Chapter 3

Patterns

Overview

- BEGIN and END
- Expressions
- Regular Expressions
- Range Patterns

awk Pre- and Post-Input Processing

An awk program may consist of three components:

- Actions to perform before any lines are processed:

```
BEGIN {action}
```

- Actions to perform while processing lines:

```
{action}  
/RE/ {action}  
/RE/
```

- Actions to perform after all lines have been processed:

```
END {action}
```

Expressions

Simple comparisons

```
$1 == "telnet"
$5 <= 100
$2 != 3
(95 - $3) > 10
```

Compound expressions

```
($3 <= 80) && ($5 > 3000)
$3 == 80 || $3 == 40
```

Utilizing regular expressions

Simple patterns

```
/RE/
```

Match patterns

```
expression ~ /RE/
expression !~ /RE/
```

Example:

```
$ ls -l /usr/sbin | awk '
/^-/ && $2 > 1 {print "file:", $9 "\t links: ", $2}'
$ ls -al /sbin | awk '$1 ~ /^d/ {print "dir: ", $9}'
$ awk -F: '$6 !~ /^\/home\/' /etc/passwd
```

Extended regular expressions

ERE metacharacters

```
* +
* ?
* |
* ()
```

Example:

```
$6 ~ /1?(-| )*(?([0-9]+(\. )?|-)*[0-9]+-[0-9]+/
```

Range Patterns

Format:


`pattern, pattern`

- Start from occurrence of first pattern and end from occurrence of second pattern

Example:


```
$ awk 'NR==425, NR==524' file
$ awk '/delaware/,/Mississippi/' States_Info
$ awk '/^\\^*/./\\^*/$/' { next }
{ print }' myprog.c
```

Review Exercises



■ Complete the exercises from the Learning Guide

Topics for Review



- 1 Read the review topics
- 2 Think about what you learned in this Session in the context of your own work environment
- 3 Discuss your answers as a class
