

# Regular Expressions

## A regular expression:

- is a character sequence that specifies a family of matching strings
- combines normal and special characters (metacharacters)
- should not be confused with wildcards for matching files
- *careful*: many of the special characters used in regular expressions are also special to the shell, so *quoting is required*

# Regular Expression Syntax (1)

- match any single character except newline
- \* match zero or more instances of single expression preceding it
- [abc] match any of the characters enclosed
- [a-d] match any character in enclosed range

# Regular Expression Syntax (2)

- [^abc] match any character NOT in the enclosed set
- ^exp regular expression must start at the beginning of the line
- exp\$ regular expression must end at the end of the line
- \ treat the next character literally

# Regular Expression Examples

- one or more spaces:

`/ */`

- blank lines:

`/^ $ /`

- entire lines:

`/. * $ /`

- formatted dollar amounts:

`/\ $ [0-9] * \ . [0-9] [0-9] /`

# Regular Expressions in grep

```
$ grep konev /etc/passwd
```

```
konev:x:1207:123:Boris Konev,Chad.
```

```
1.12,6799:/users/ra/konev:/usr/local/bin/bash
```

```
$ grep "Ko.*v" /etc/passwd
```

```
konev:x:1207:123:Boris Konev,Chad.
```

```
1.12,6799:/users/ra/konev:/usr/local/bin/bash
```

```
u2mk4:x:7232:602:M. Kozarevic,Computer Sci with a Eur
```

```
Lang,200133848:/users/cel02/u2mk4:/bin/ksh
```

```
roman:x:9008:123:Roman Kolpakov:/users/ra/roman:/usr/bin/ksh
```

```
$ grep -v konev /etc/passwd
```

```
root:x:0:3:The Root Of All Evil,G.32,N/A ,:/root:/bin/bash
```

```
croot:x:0:3:The Other Root Of All Evil,G.32,N/A ,:/root:/bin/csh
```

```
daemon:x:1:5:::/bin/sh
```

```
... ..
```