

# Some Unix Commands

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# Outline

Man pages

Listing files

File commands

Wildcards

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# Man pages

If you do not know how to use a command, type

```
man command
```

Also

```
apropos keyphrase
```

lists manual entries containing `keyphrase`

# Listing files

<b>pwd</b>	shows current directory
<b>ls</b>	lists files in current directory
<b>ls -a</b>	shows hidden files, e.g. files starting with "."
<b>ls -l</b>	outputs in long format
<b>ls -lt</b>	sorts by time, oldest on top
<b>ls -lrt</b>	sorts by time, most recent at the bottom
<b>ls -lS</b>	sorts by size, largest on top
<b>ls -r1S</b>	sorts by size, largest at the bottom
<b>ls -F</b>	marks directories with "/"

# Showing file content

<b>cat</b> file	outputs the content of a file
<b>more</b> file	similar
<b>less</b> file	similar

## File commands

<b>cp</b> old new	copies old file to new file
<b>cp</b> -i old new	prompts for confirmation before copying
<b>mv</b> old new	moves old file to new file
<b>mv</b> -i old new	prompts for confirmation before moving
<b>rm</b> file	removes/deletes file
<b>mkdir</b> dir	creates a directory
<b>rmdir</b> dir	removes a directory

The above commands, except **mkdir**, with option `-r` work recursively on subdirectories

## Finding files

**locate** `file` finds where `file` is located

**which** **command** tells where **command** is; e.g. **which** `gcc`

# Wildcards

- `*` matches one or more characters; e.g. `ls *` lists all files
- `?` matches single character; e.g. `ls file?`
- `[...]` matches any sequence inside `[]`; e.g. `myfile.[co]` matches `myfile.c`, `myfile.o`, `myfile.co`, `myfile.oc`

# File permissions

## Examples

```
drwxr-xr-x 33 nednedialkov staff 1122 Jan 7 09:57 3F03
```

directory, first symbol is **d**

```
-rw-r--r-- 1 nednedialkov staff 336970 Jan 7 09:57 gen.pdf
```

regular file, first symbol is **-**

first symbol	meaning
-	file
<b>d</b>	directory
<b>b</b>	block device, e.g. hard disk, CD-ROM
<b>c</b>	character device, e.g. mouse, keyboard
<b>s</b>	socket device, file for inter-process communication

symbol	meaning
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r	read
---	------

w	write
---	-------

x	execute
---	---------

- ooo ggg aaa  
owner group all

```
-rw-r--r-- 1 nednedialkov staff 373775 Jan 7 09:57 virtdb.pdf
```

I can read and write, others can read only

```
-rw----- 1 nednedialkov staff 373775 Jan 7 09:57 virtdb.pdf
```

I can read and write, others do not have access

# Changing permissions

**chmod** **who** *op perm file(s)*

**who** meaning

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**u** user, file owner

**g** group

**o** others, not group and not user

**a** all, same as `ugo`

**op** meaning

---

**+** add permission

**-** remove permission

**perm** is **r**, **w**, **x**

**chmod** `go-rwx` *directory*

does not allow others to see your directory

# grep

- ▶ **grep** `string file`
  - ▶ searches for `string` in `file`
  - ▶ shows lines where it appears
- ▶ **grep** `-v string file`
  - ▶ shows lines where it does not appear
- ▶ Example: **grep** `main *.c` searches for `main` in all C files in the current directory

# Pipes

- ▶ The output of a command can be the input to another command
- ▶ Example: **who** | **grep** nick
  - ▶ **who** lists all users
  - ▶ **who** | **grep** nick selects nick if present
- ▶ Example: **cat** file | **lpr** sends file to the print queue

## Execution control

- ▶ **ps** lists all processes
- ▶ **kill** kills a process
- ▶ To run a program in background, use `&`  
E.g. `emacs &`
- ▶ To bring to foreground
  - ▶ get the job number with **jobs**
  - ▶ **fg** `%number`
- ▶ `Ctrl-Z` suspends execution; **fg** restores it
- ▶ `Ctrl-C` stops a program
- ▶ **nice** changes priority
- ▶ **nice nohup** `program &`  
`program` executes (with lower priority) even if you logout