

CA170: Week 12

Windows command-line

Windows command-line

- The Windows command line (or DOS command-line) on Microsoft Windows also has commands you can type at a prompt.
- Windows command line
- Windows commands (Microsoft reference pages)

Customisation

- Change prompt:
 - Prompt
 - prompt `vsgs`
 - default is probably: prompt `pg$s`
- Change colour:
 - Color
 - color `f0` (black on white)
-

Demo in lecture

- To demo Windows command-line in lecture, we download the Works of Shakespeare to the C drive.
- Freebyte Zip - to unzip without install.

Demos

- `cls` (like UNIX clear)
- `cd` (works like in UNIX)
- `cd` (with no argument) (is like UNIX `pwd`)
- `find` (like `grep`)
 - `find "Henry" home.html`
- Wildcards
 - File wildcards work. Go into "richardii" and try:
 - `find "Ireland" *.html`
 - Lists all files plus matches. Lists files even if they have no matches.
 - Some directory wildcards work.
 - From the home Shakespeare directory:
 - `cd macb*`
 - Some directory wildcards don't work.
 - From the home Shakespeare directory, this works:
 - `find "Ireland" richardii*.html`
 - but this does not work:
 - `find "Ireland" **.html`
 - You can get around this by writing a batch file with a FOR loop.

Reference

- List of DOS commands
- Microsoft reference pages:
 - Windows commands
 - Search for reference pages
- Ss64.com
 - Command-line reference
- UnixHelp
 - DOS to UNIX quick reference
- Advanced Bash-Scripting
 - DOS syntax v. UNIX syntax

Windows batch files

Windows batch files

- You can write scripts on Windows command line.
- You put your commands in a "batch file" with a name like PROG.BAT, and then to run it type PROG.
- Windows batch files
- Windows Batch Scripting tutorial

```
@echo off
rem the above line prevents the script echoing back the commands
rem is a comment

dir
```

Some features

- Demos using the Shakespeare files as before.
-
- Pipes:

```
dir | find "string" | sort
```

- Example:

```
Go into henryiv_1
find "Scot" act*.html
find "Scot" act*.html | find "Scots"
find "Scot" act*.html | find /v "Scots"
```

- Redirection:

```
dir > file
```

- IF and command-line arguments and string compare:

```
if '%1'==' ' echo no arg

if '%1'==' ' ( echo no arg ) else ( echo arg )
```

- FOR loops and CALL of another batch file:

```
for %%i in (*.html) do call secondprog %%i
```

- Environment variables:

```
set myvar=string
echo myvar is %myvar%
```

```
echo path is %path%
```

```
copy %1 %homepath%\backup
```

- multiple statements in block:

```
for %%i in (*.*) do (
echo %%i
dir %%i
)
```

- IF EXIST

```
IF EXIST "C:\Program Files\Mozilla Firefox" (
echo Firefox exists
) ELSE (
echo Firefox missing
)
```

- Cannot change this layout around too much.

- We can get around the lack of directory wildcards with a FOR loop:

```
@echo off
for /d %%d in ("r*") do find "Ireland" %%d\*html
```

- This is the equivalent of:

```
grep Ireland r*/*html
```

The BAT scripting language is generally simpler than UNIX/Linux Shell, and the standard utilities are fewer, and have less options, than on UNIX/Linux.

- But there are more powerful Windows command-lines.

More powerful Windows command-lines

More powerful Windows command-lines

- PowerShell
 - Windows PowerShell
 - Run - powershell
 - Aliases give multiple names to some commands - including some Unix names - ls, cat, cp, rm.
 - Has directory wildcards.
 - PowerShell tutorial
 - Ss64.com
 - PowerShell reference
- Other Scripting
 - Windows Script Host - write scripts in JScript (Microsoft JavaScript) and VBScript
 - Windows Resource Kits - many command-line tools.

Proper Linux on Windows

- Windows Subsystem for Linux introduced on Windows 10.
- Proper Linux compatible environment. Linux binaries can run in it.
- Real bash shell with real Linux command-line utilities.
- Install:
 - Windows - Search for "Turn Windows Features On Or Off" - Enable "Windows Subsystem for Linux"
 - Start - Microsoft Store - search for "Linux" - install whatever Linux distribution you want, e.g. Ubuntu
- Gives command-line.
 - Linux files are under root dir / with home directory: /home/userid
 - Modify Linux files with Linux tools only
 - Windows files are under drive letters like: /mnt/c
 - Can modify Windows files with either Windows tools or Linux tools
- For GUI, install an X server
 - e.g. Xming
- and add DISPLAY to .bashrc
 - could use command-line editor
 - or just do this:

```
echo "export DISPLAY=localhost:0.0" >> .bashrc
```
- update applications
 - sudo apt update
 - sudo apt install gedit

Windows Terminal

- Windows Terminal
- Integrates with Windows Subsystem for Linux.