Genetic Diversity Centre Zurich

701-1425-00L - Genetic Diversity: Analysis

Terminal

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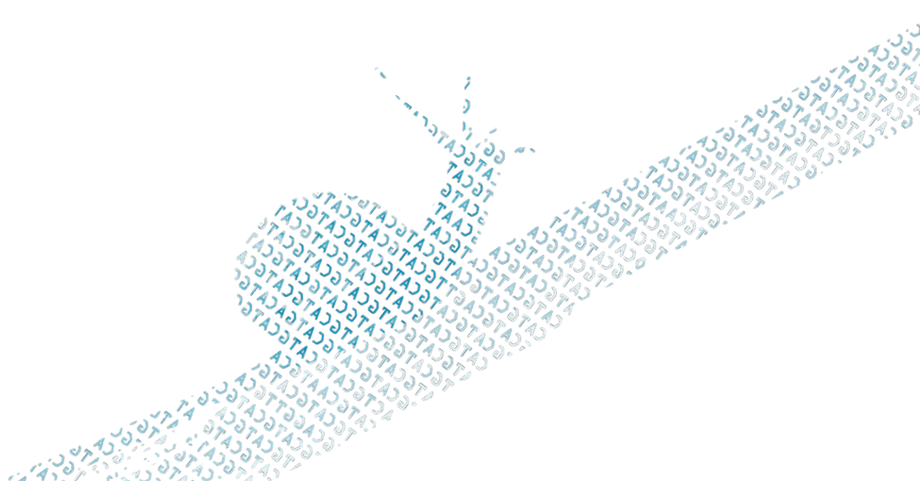

Terminal ▷ Introduction

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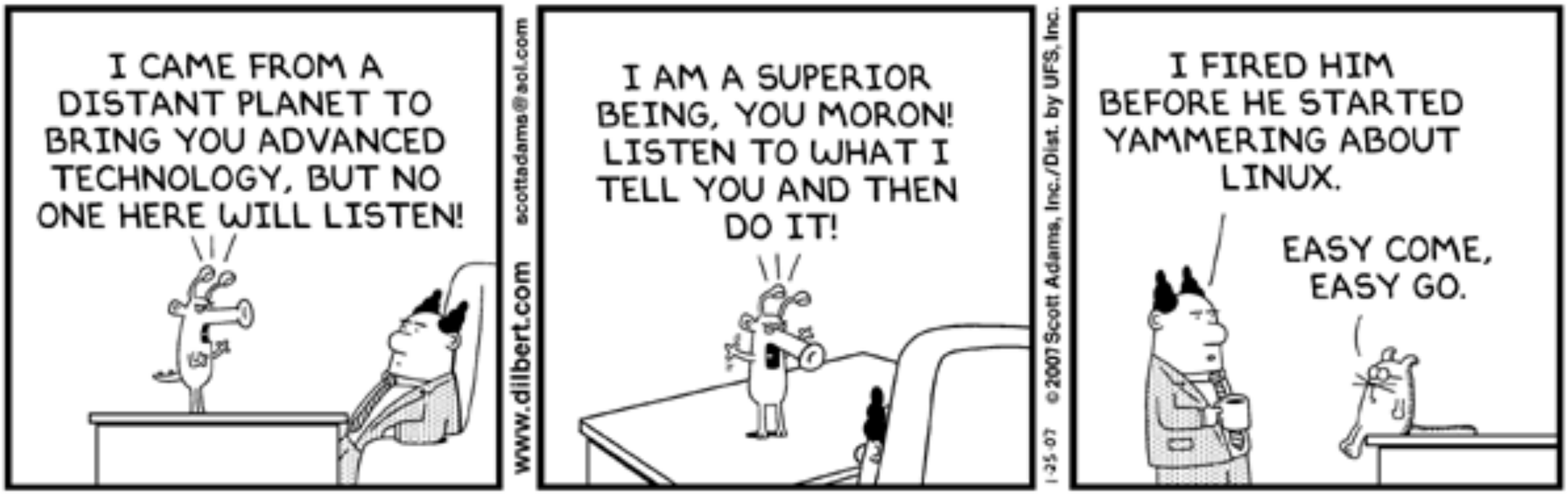

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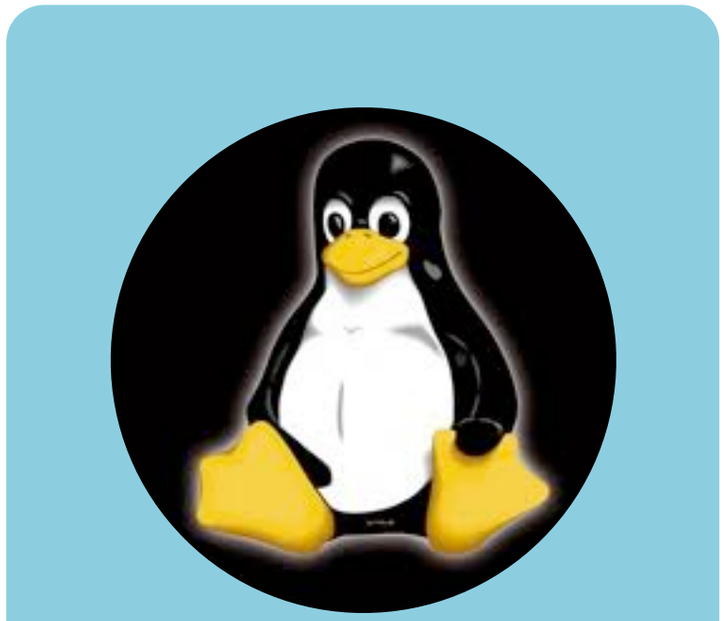
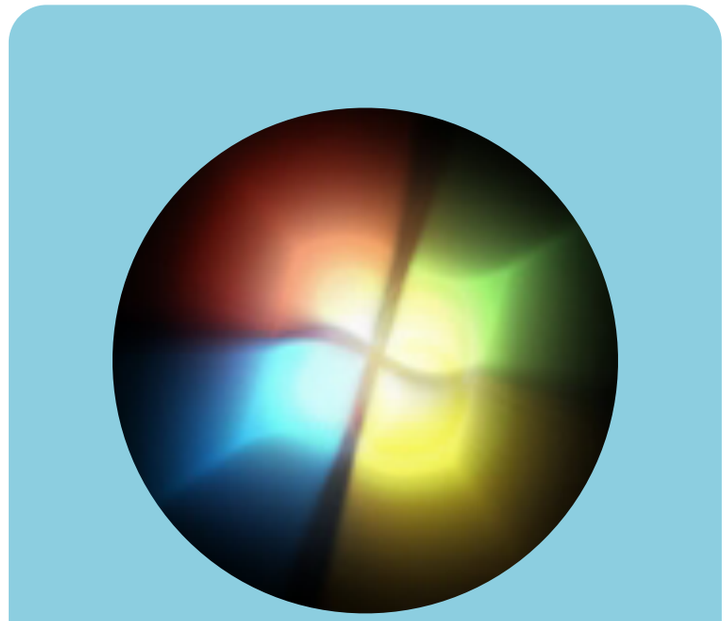
The war of the OS and the conflict of the V

Mac

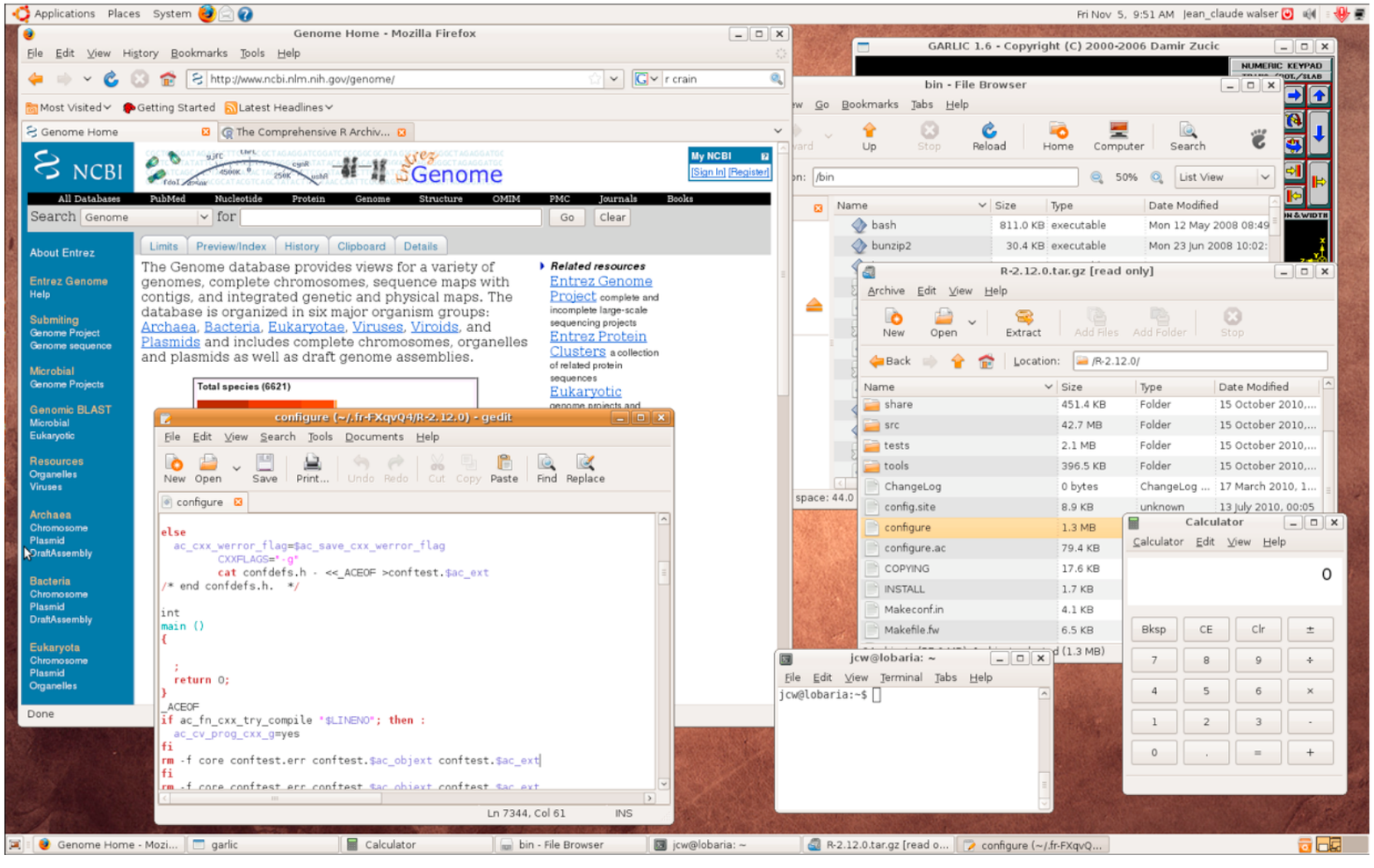


Linux



Windows

A **graphical user interface (GUI)** - often pronounced gooey - an interface that allows the user (you) to interact with programs in more ways than typing.



GUIs are nice but don't be afraid of the terminal!

GUIs were introduced in reaction to the steep learning curve of **command-line interfaces (CLI)**, which require commands to be typed on the keyboard. Since the commands available in command line interfaces can be numerous, complicated operations can be completed using a short sequence of words and symbols. This allows for greater efficiency and productivity once many commands are learned.

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Shell - Terminal

Shell is a UNIX term for the interactive user interface with an operating system. The shell is the layer of programming that understands and executes the commands a user enters.

Bourne-Shell (sh)

Korn-Shell (ksh)

C-Shell (csh)

TC-Shell (tcsh)

Bourne-Again-Shell (bash)

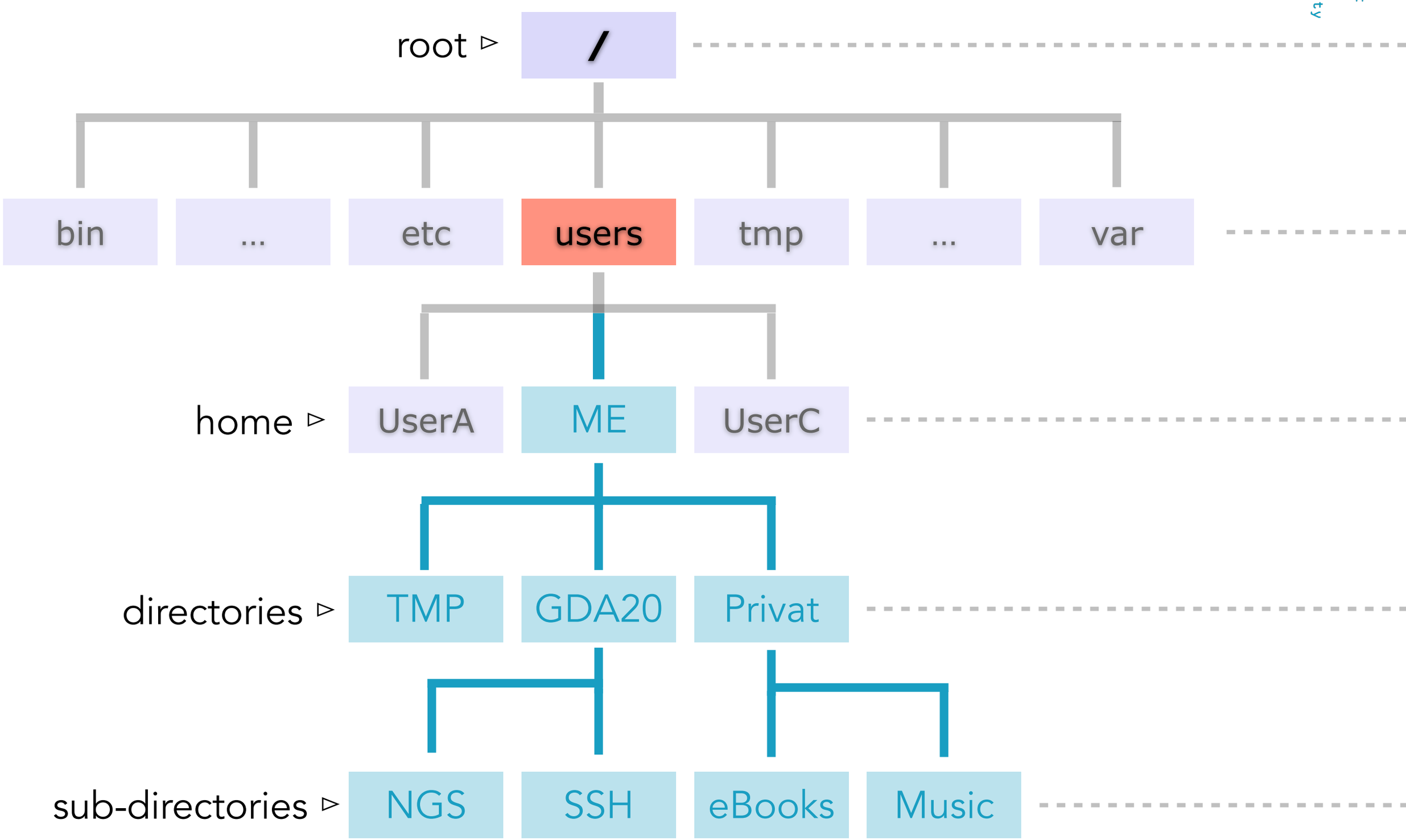
Debian Almquist Shell (dash)

Z-Shell (zsh)

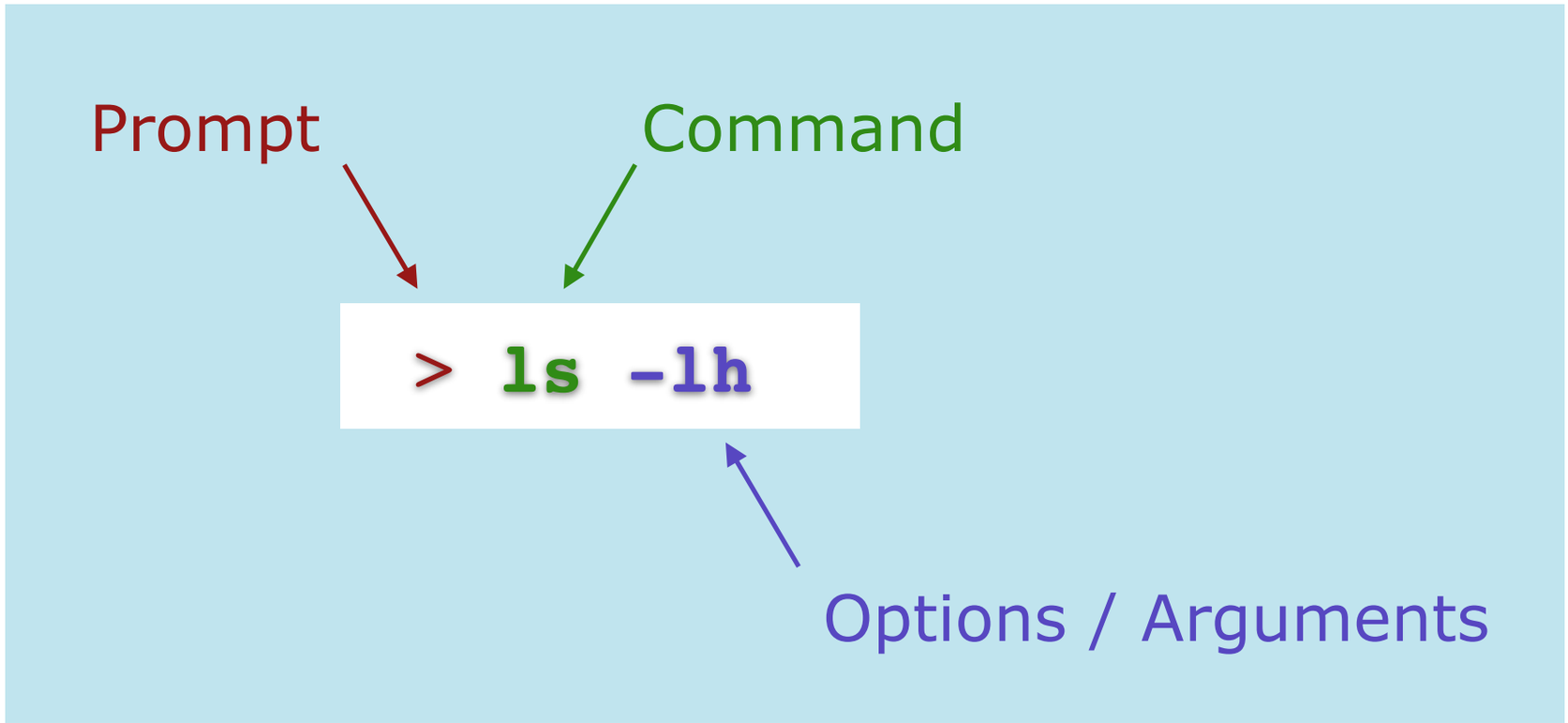
A-Shell (ash)

PowerShell / cmd.exe

```
What do I have?
$> echo ${SHELL}
```


root ▷
/
bin
...
etc
users
tmp
...
var
home ▷
UserA
ME
UserC
directories ▷
TMP
GDA20
Privat
sub-directories ▷
NGS
SSH
eBooks
Music

Command - Line



Built-in Help

```
> info <command>
```

```
> info ls
```

```
> man <command>
```

```
> man ls
```

* press Q to leave info or help

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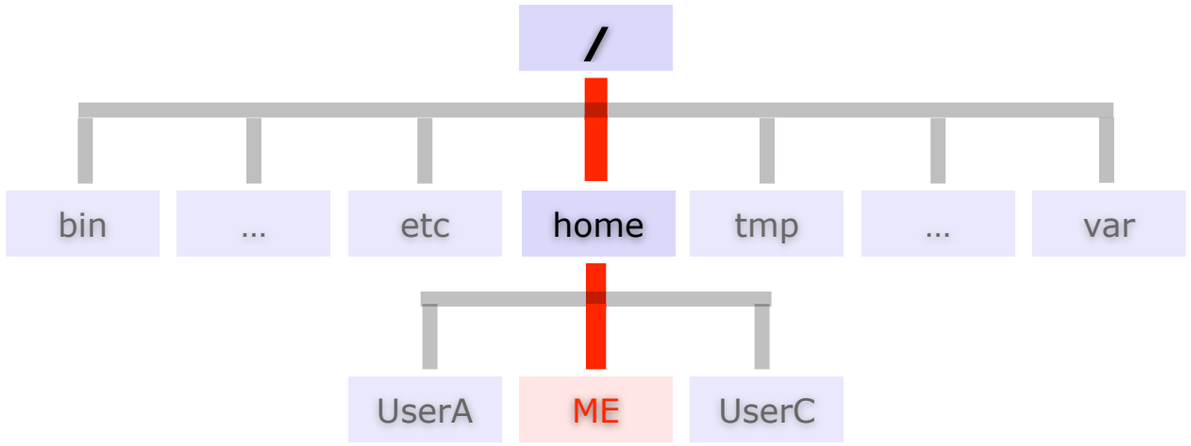
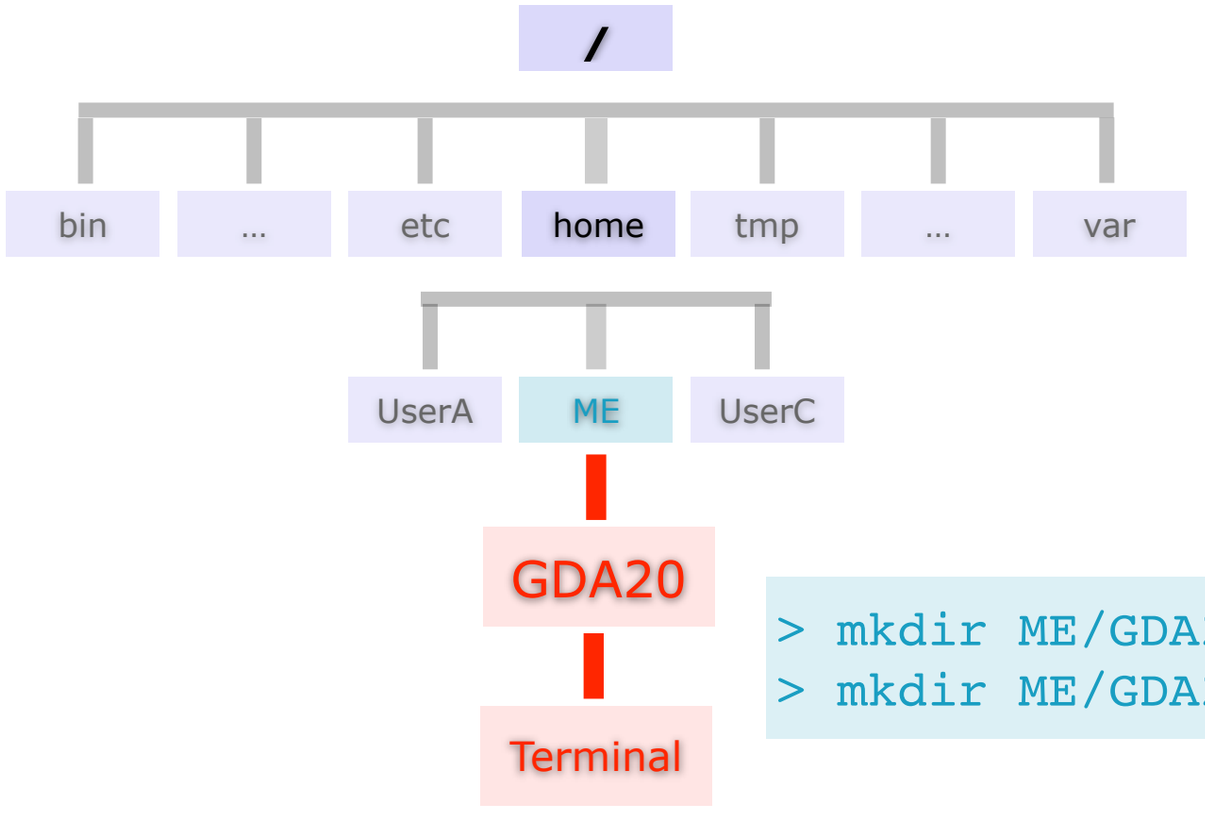
pwd - print name of current/working directory




```
> pwd
/home/ME
```

```
> pwd
/home/ME
> cd ${HOME}
> pwd
/home/ME
> cd ~
> pwd
/home/ME
```

mkdir - creating/making directories




```
> mkdir ME/GDA20
> mkdir ME/GDA20/Terminal
```

Alternatively, use option p to create diretories and sub-directories

```
> mkdir -p ME/GDA20/Terminal
```

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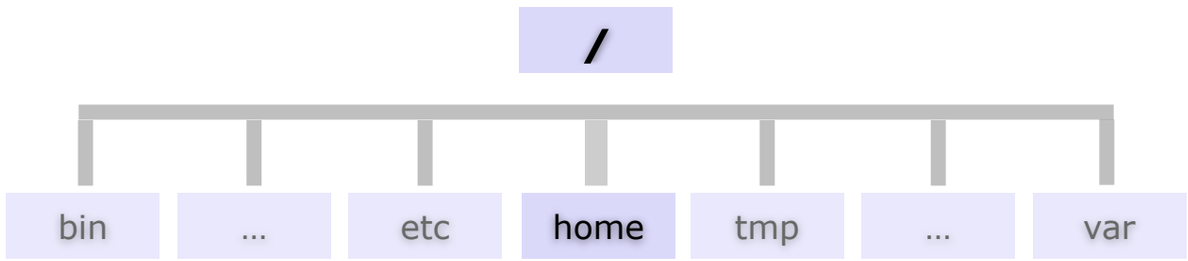
cd - change directory



GDA20

Terminal

```
> cd GDA20
```

Alternative

```
> cd GDA20/terminal
```

```
> cd terminal
```

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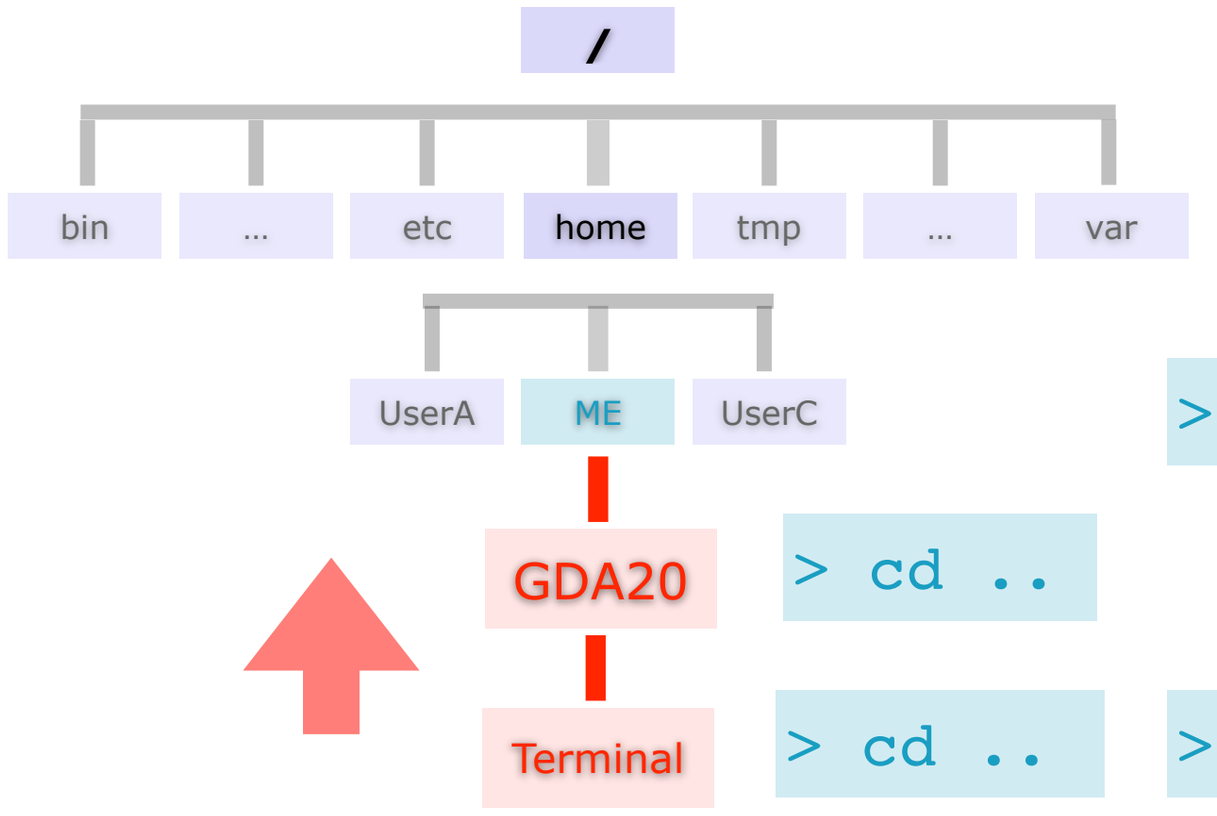
going home again




```
> cd /home/Me/
```

```
> cd ..
```

```
> cd ..
```

```
> cd
```

```
> cd ${HOME}
```

```
> cd ~
```

Local
Software
Managment

Software
Dependencies

Parallel
Versions

*Package, **dependency and environment management** for any language—*

Python, R, Ruby, Lua, Scala, Java, JavaScript, C/ C++, FORTRAN. Conda as a package manager helps you find and install packages. If you need a package that requires a different version of Python, you do not need to switch to a different environment manager, because conda is also an environment manager. With just a few commands, you can set up a totally separate environment to run that different version of Python, while continuing to run your usual version of Python in your normal environment.

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BIOCONDA®

Bioconda is a channel for the conda package manager specializing in bioinformatics software. The conda package manager makes installing software a vastly more streamlined process. Conda is a combination of other package managers you may have encountered, such as pip, CPAN, CRAN, Bioconductor, apt-get, and homebrew. Conda is both language- and OS-agnostic, and can be used to install C/C++, Fortran, Go, R, Python, Java etc programs on Linux, Mac OSX, and Windows.

```
python --version
# Python 2.7.15
bwa
# -bash: bwa: command not found
blast -help
# -bash: blast: command not found
```

```
conda info --envs
source activate aligners
conda info --envs
python --version
# Python 3.6.7
bwa
blastn -help
```