Introduction to Unix

Melbourne Bioinformatics

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BIOINFORMATICS + DATA SERVICES + INFRASTRUCTURE, FOR LIFE SCIENCES TODAY

Workshop written by Steven Morgan
Special thanks to Gayle Phillip, Bernie Pope and Andrew Robinson

About this workshop

This workshop is for people new to Unix.

We aim to teach you the basics.

We hope that afterwards you will have the tools to discover the rest of the system on your own.
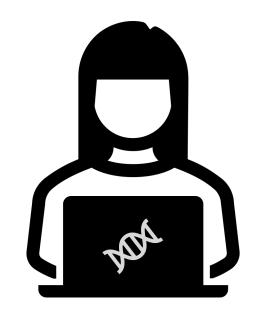
About this workshop

The workshop will consist of:

- Introductions to each topic.
- Some code along activities.
- Hands-on tasks.

This workshop is split into 8 sections.

What is Unix?

Unix is an operating system that consists of a set of programs that act as a link between a computer and users.

Unix is everywhere. Apple MacOS, iOS, Linux and Android OS are all derived from Unix.
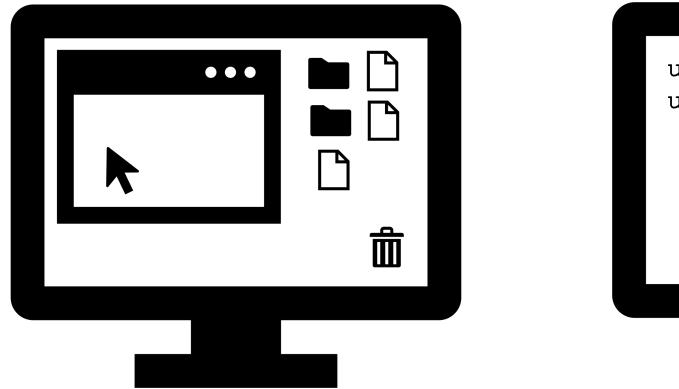
Why Unix?

Unix is flexible and robust.

Philosophy: Do one thing and do it well.

Use these simple tools together to achieve complex tasks.
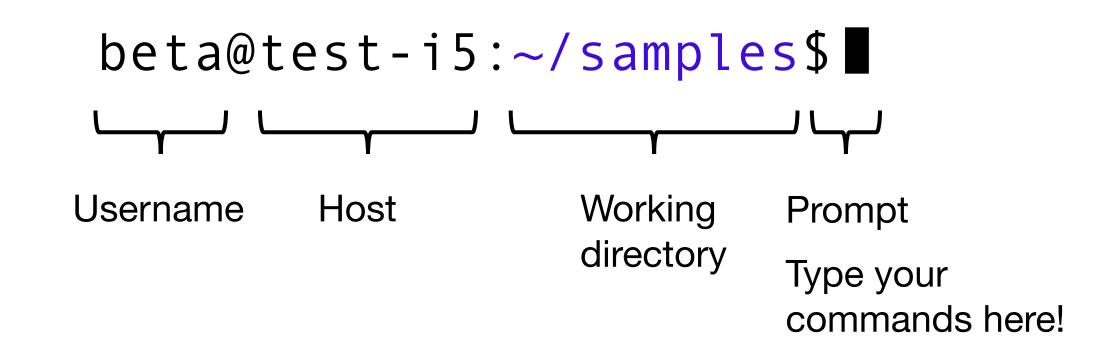
Command line interface

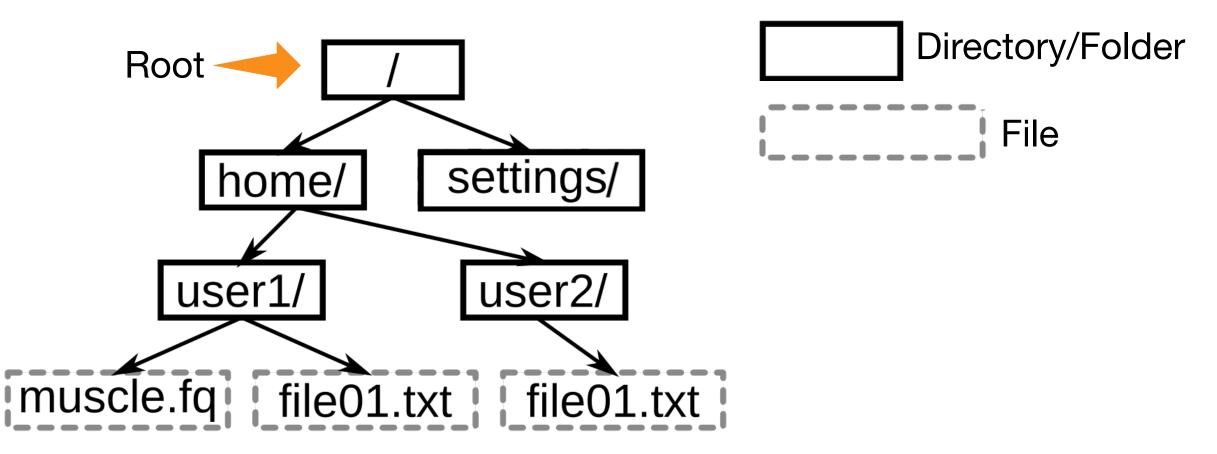Graphical User Interface (GUI)

Command Line Interface (CLI)

Command prompt

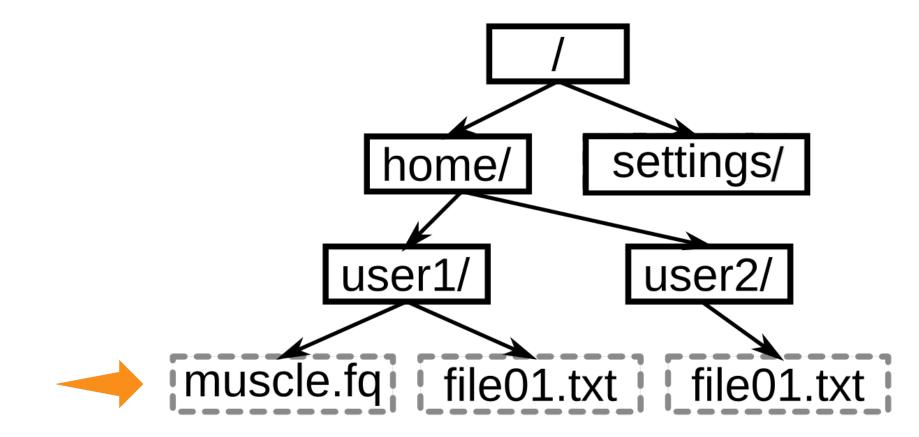`beta@test-i5:``~/samples``$`█

Username   Host   Working directory   Prompt

Type your commands here!

Command syntax

$ cal

Command

Command syntax

```
$ cal -j
```

Command   Flag

Command syntax

$ cal -j -m february

Command   Flag   Option

File system

Absolute paths

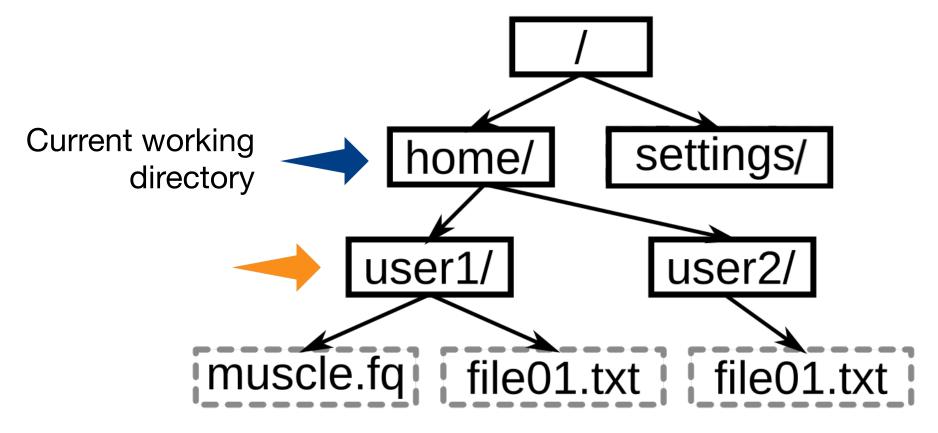Absolute (full) path to muscle.fq: `/home/user1/muscle.fq`

Absolute paths

Absolute (full) path to user2: `/home/user2/`

`pwd` command prints the full path of the current working directory

Relative paths

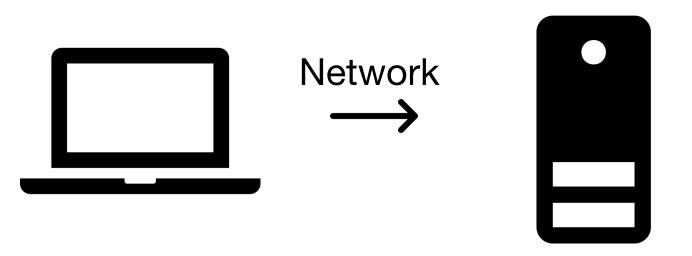Current working directory

Relative path: `user1/`

Current working directory

Relative path: `user1/muscle.fq`

Special file names

/   Root directory

~   Home directory

.   Current working directory

..   Parent of current working directory

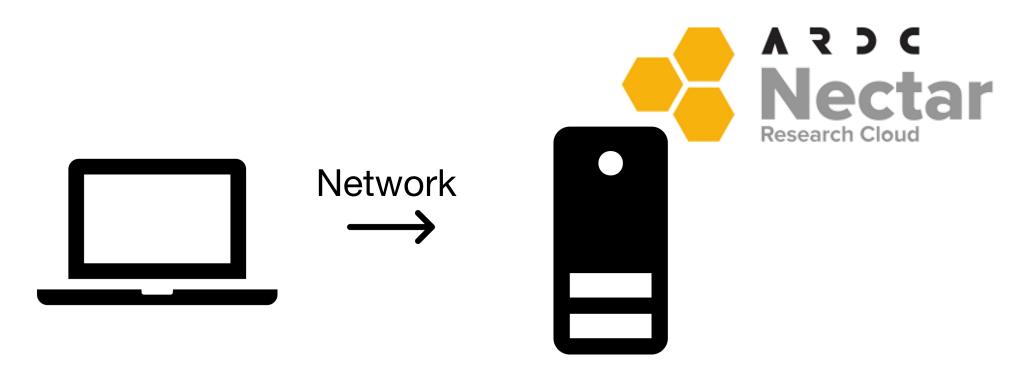Local computer   Network   Remote computer
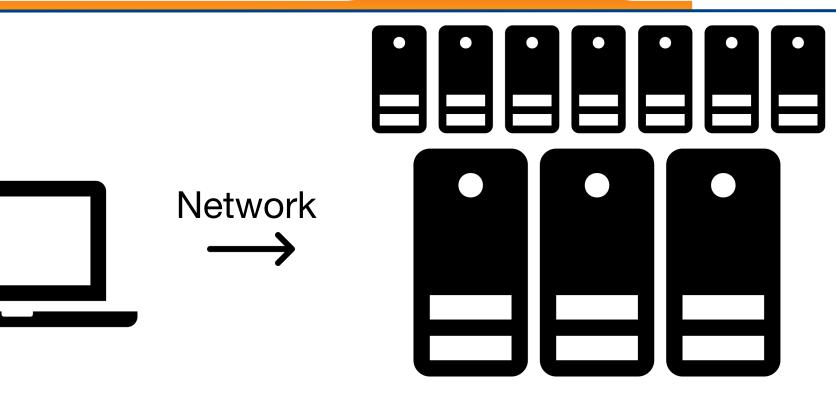
Remote login

Network

→

Local computer

Remote computer

https://ardc.edu.au/services/nectar-research-cloud/

Special thanks to Simon Gladman and Catherine Bromhead for supporting this workshop.

Remote login

Local computer

Network →

High performance computing system

Tips

- Commands are case sensitive

- Avoid whitespace in filenames
  - try_underscores

- Pay attention to error messages.

- Help is just an internet search away.

Your turn

To the training material!