Introduction to Hands-on

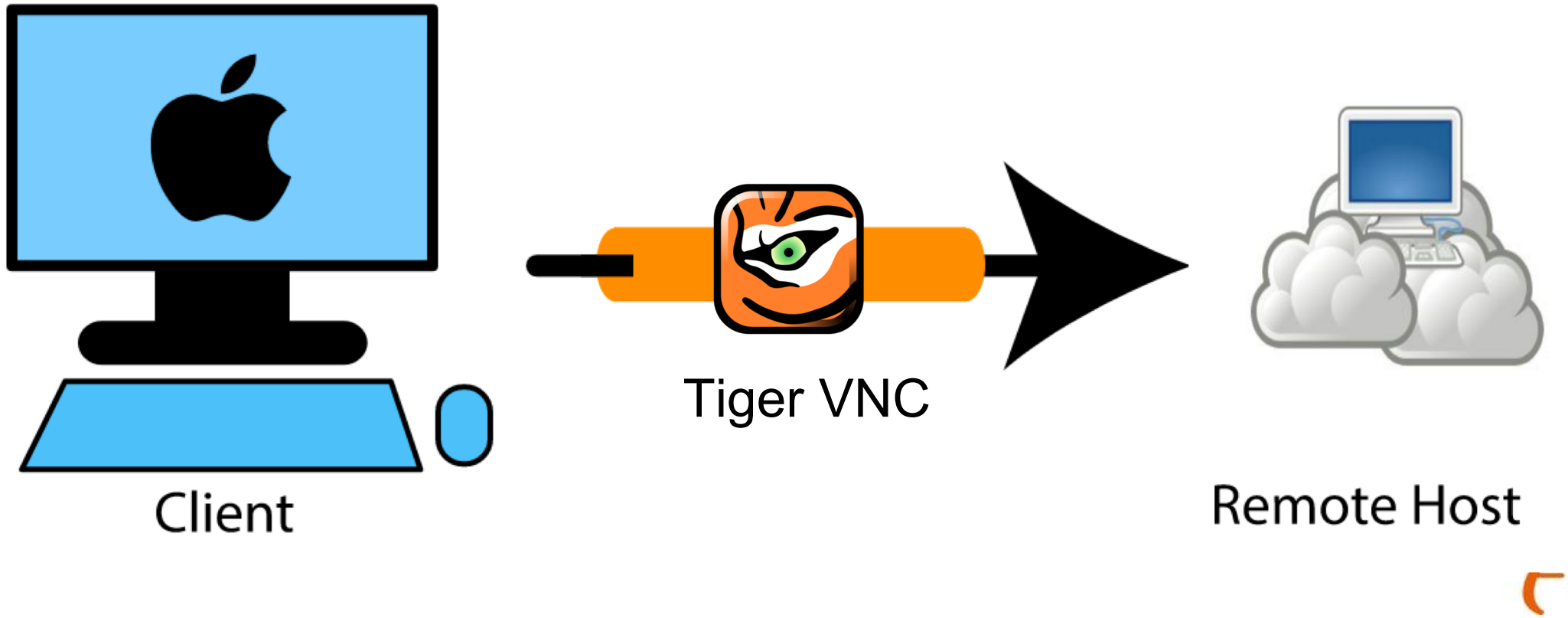
Tromsø November 2018

www.elixir-europe.org

Introduction to virtual machines in the cloud

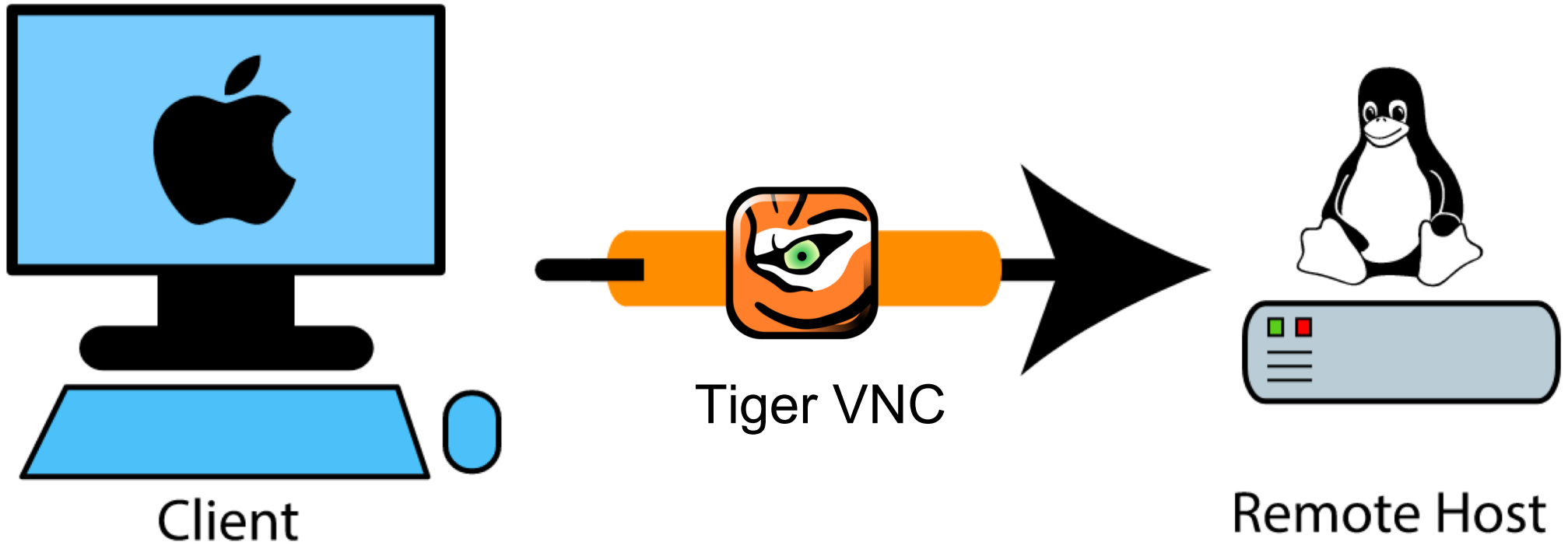
All practical exercises will be done on a virtual machines (VM)

You can access the VM through the remote desktop viewer Tiger VNC



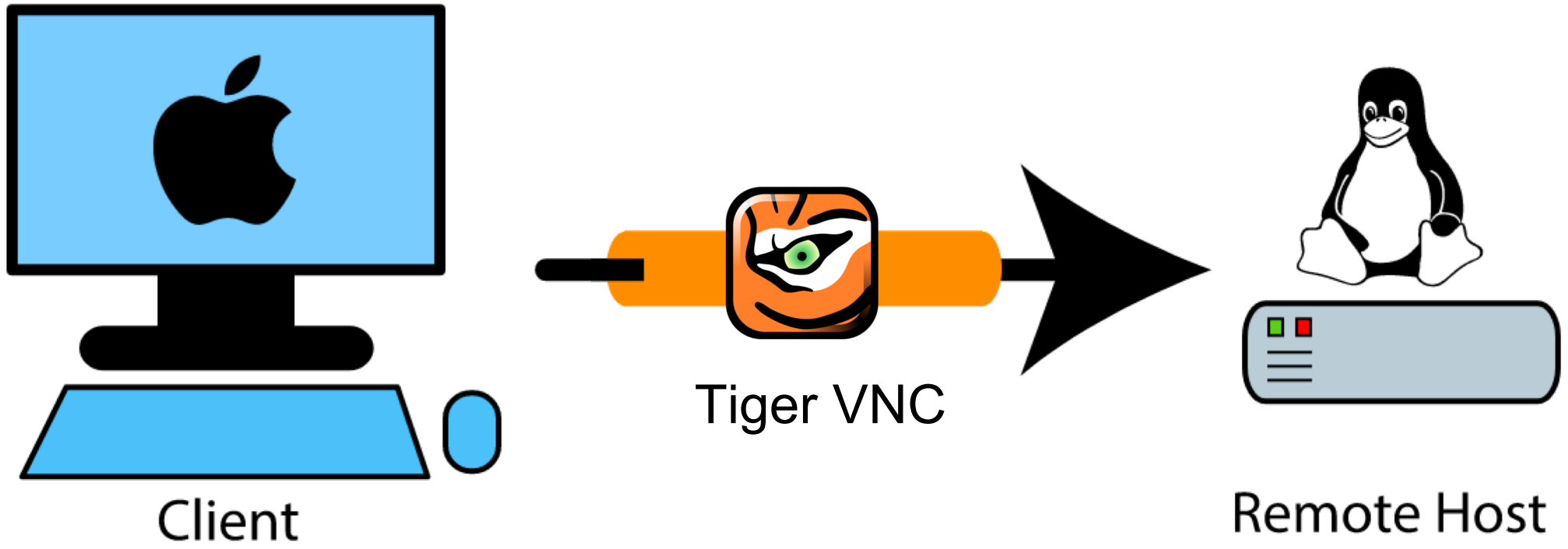
Installing Tiger VNC on your own computer

Download Tiger VNC from here: http://tigervnc.org/



The OS on the VM is Ubuntu 18.04

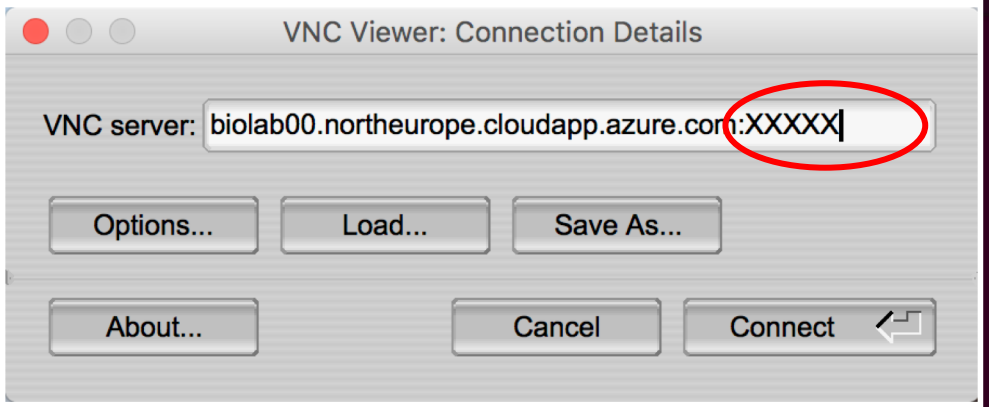
All bioinformatics analysis tools are installed on the VM

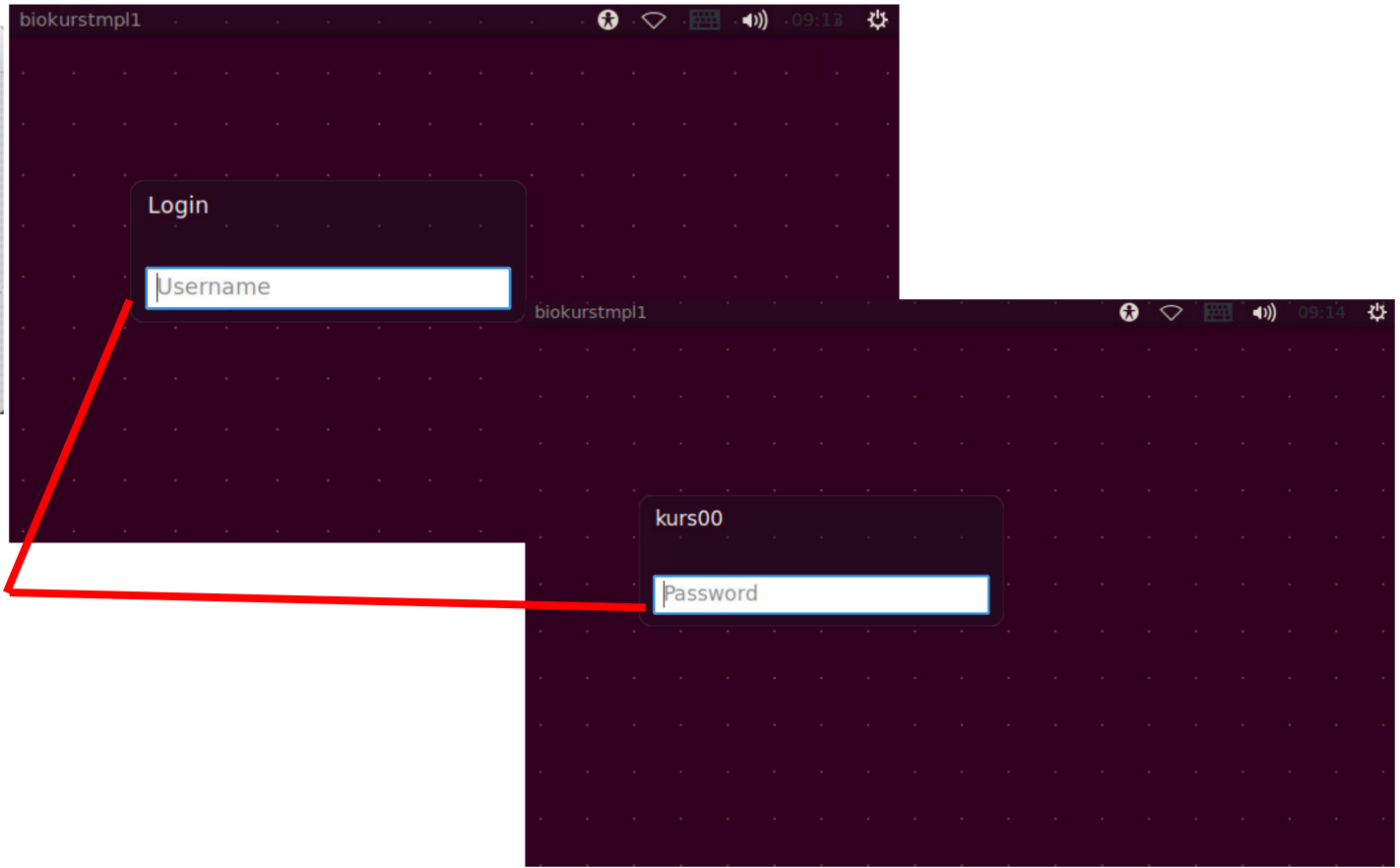


Logging on to the VM through the remote desktop viewer Tiger VNC

Address to VM: biolaboo.northeurope.cloudapp.azure.com:XXXXX

Each student get their own port number and login credentials through the EeLP

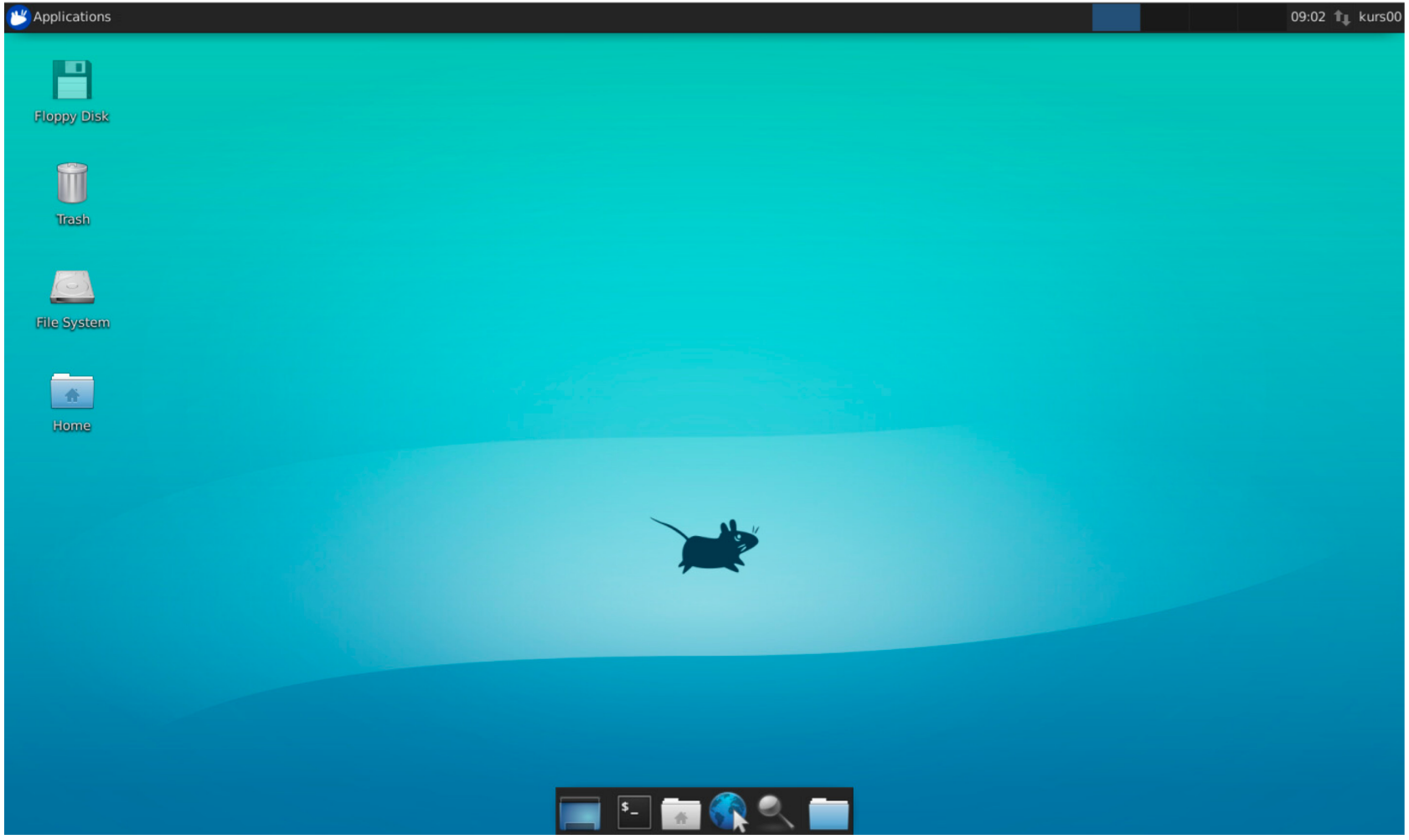




Fill in the login credentials

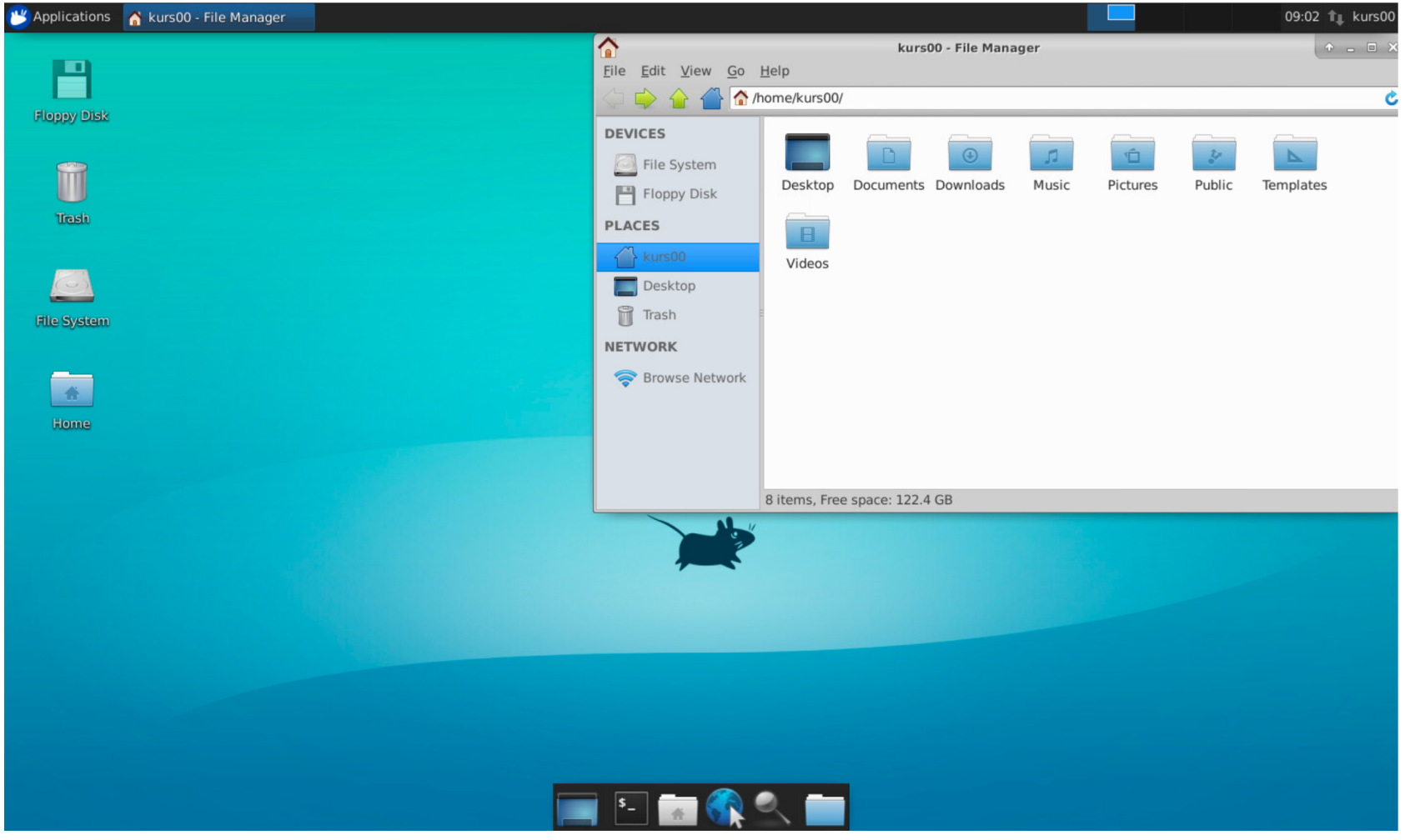
Getting familiar with the Ubuntu environment on the VM

Download Tiger VNC from here: http://tigervnc.org/

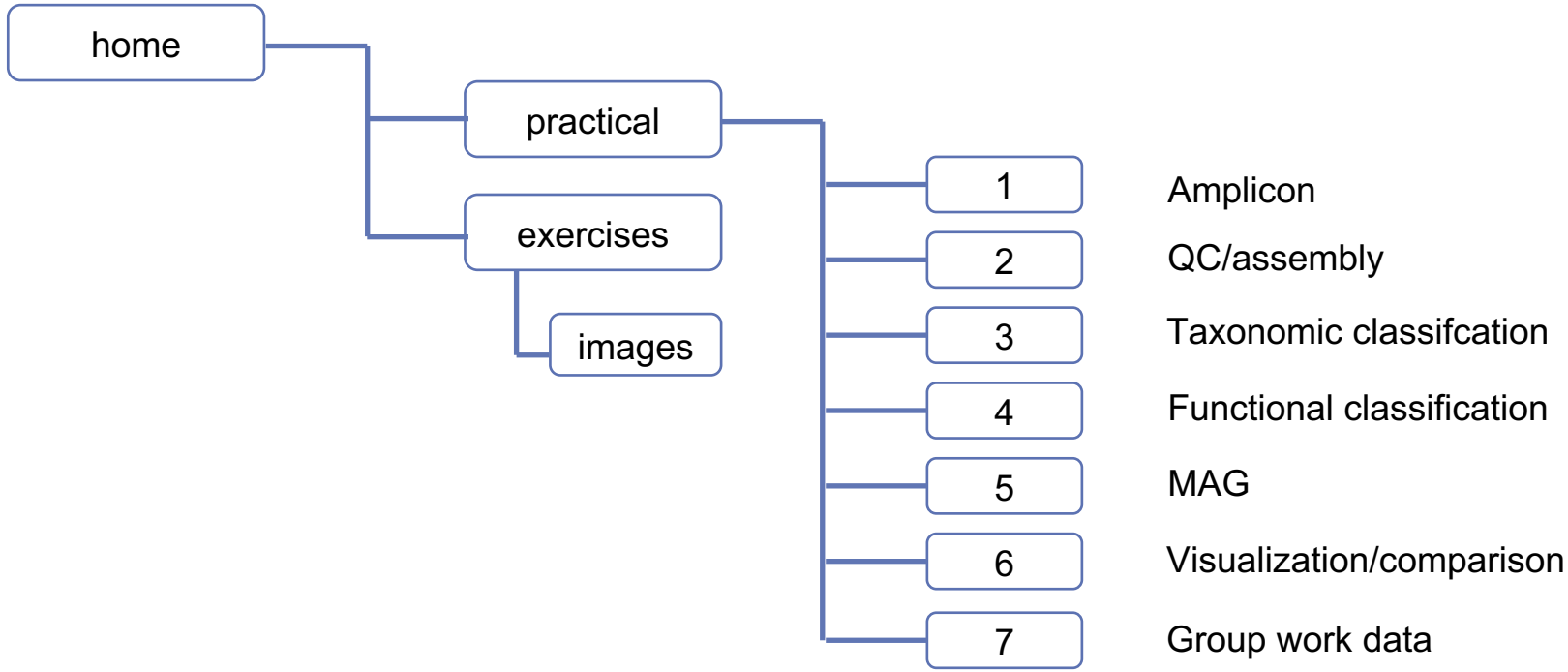


Getting familiar with the Ubuntu environment on the VM

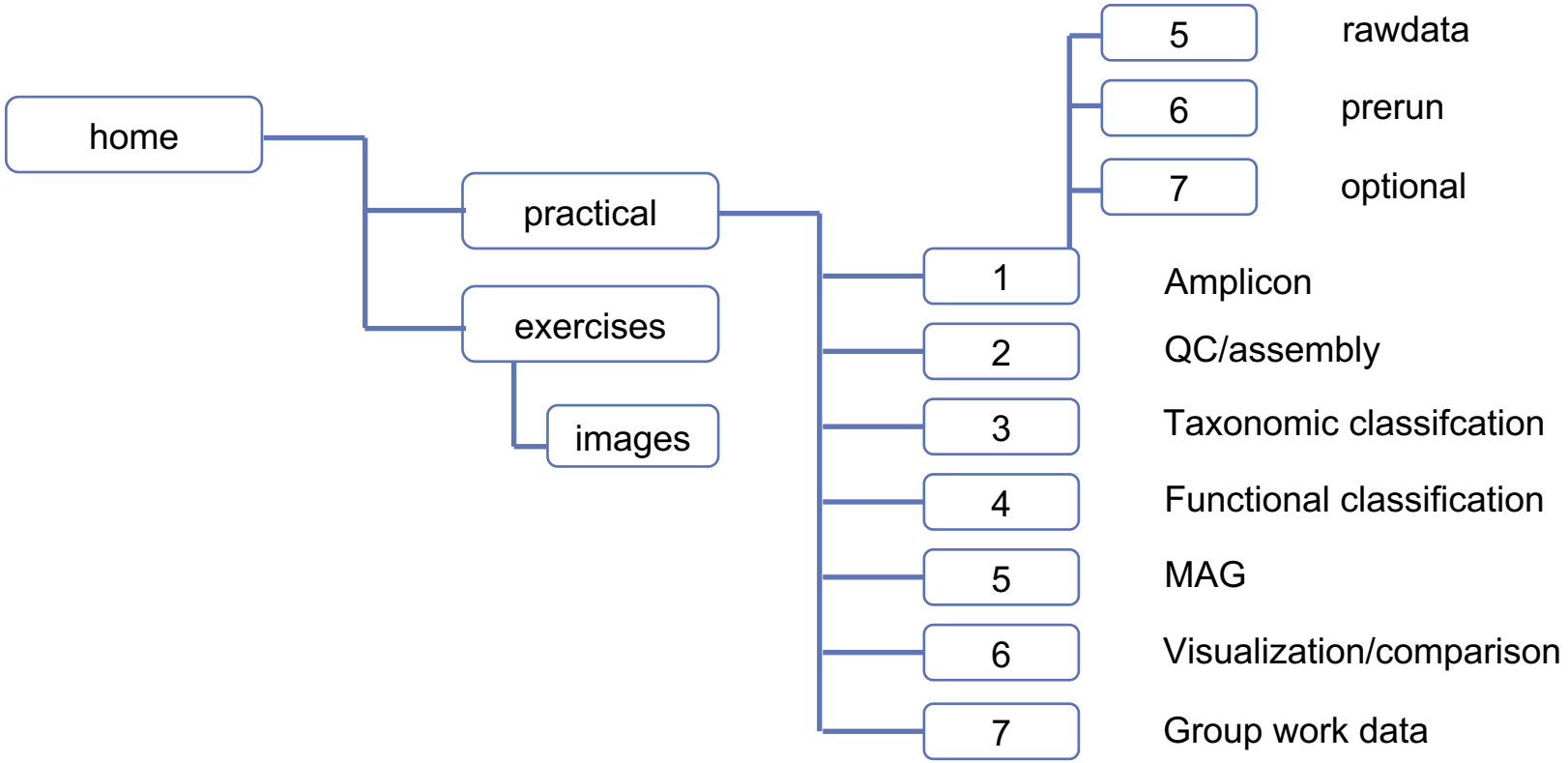
Similar to other OS with file browser etc.



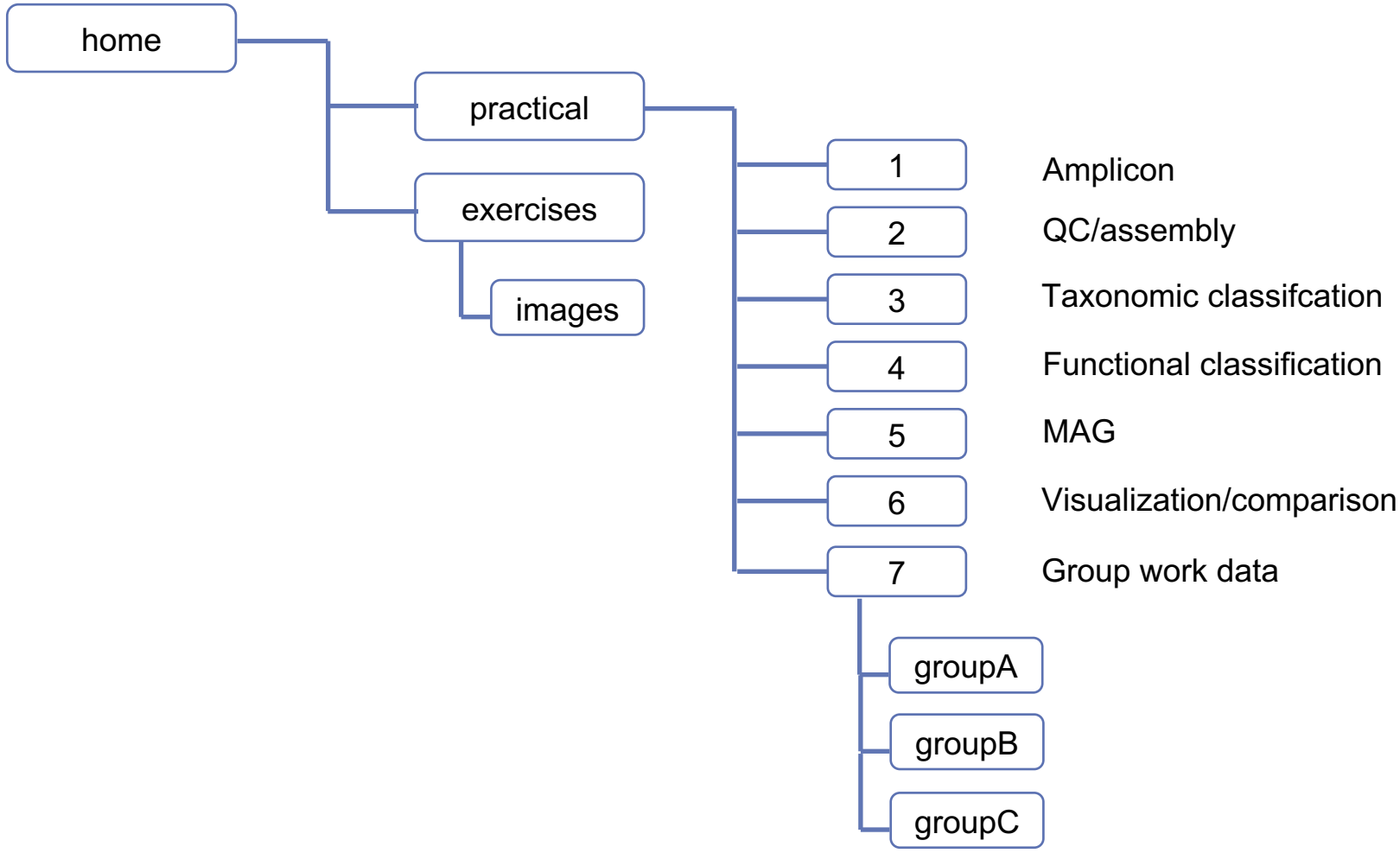
The data for the practical exercises



The data for the practical exercises



The data for the practical exercises

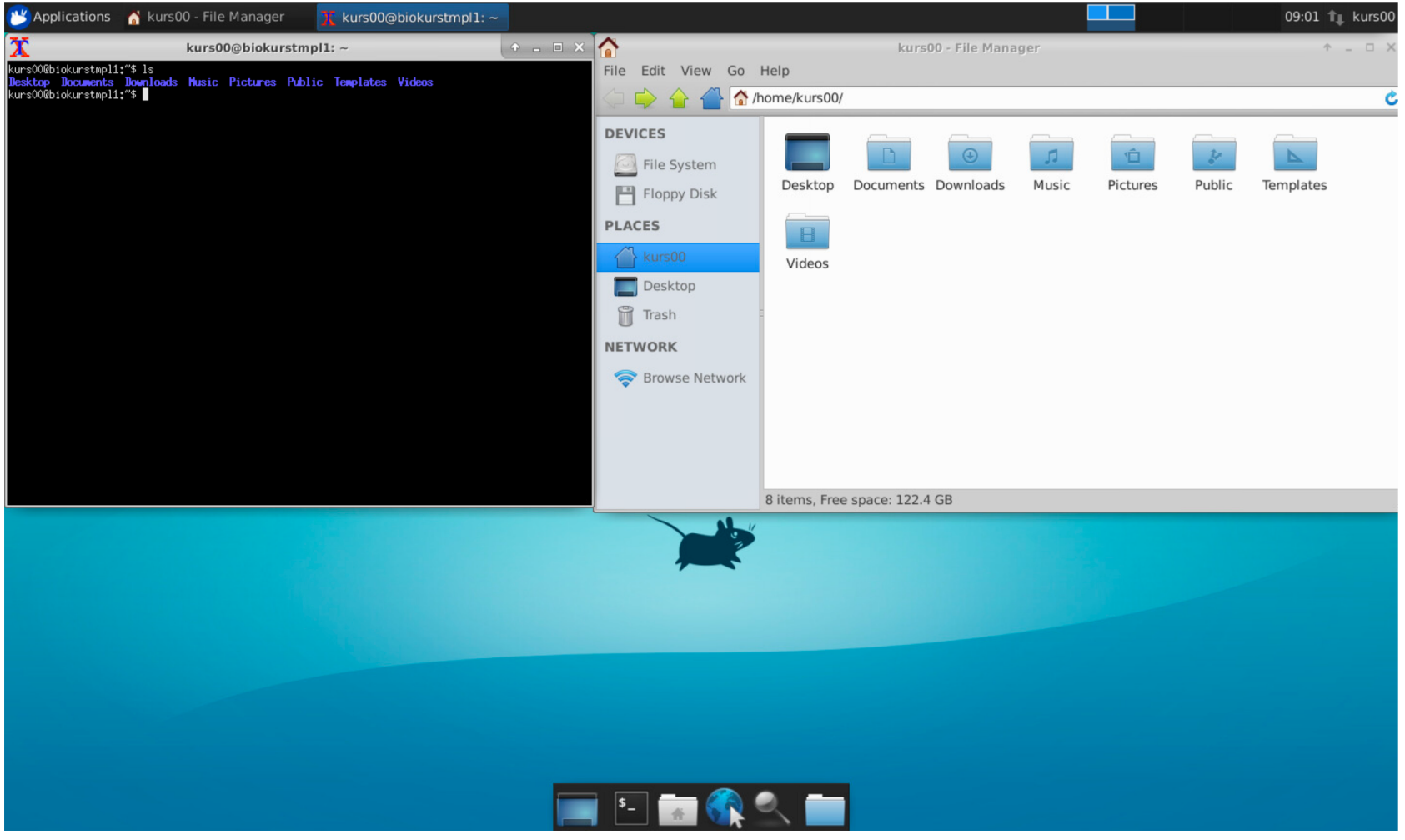


Group work - Friday

Case Study 1: MAG	- Assembly, binning and comparative analysis
Case Study 2: Amplicon	- Diversity analysis
Case Study 3: Metagenomic	- Taxonomic and functional analysis

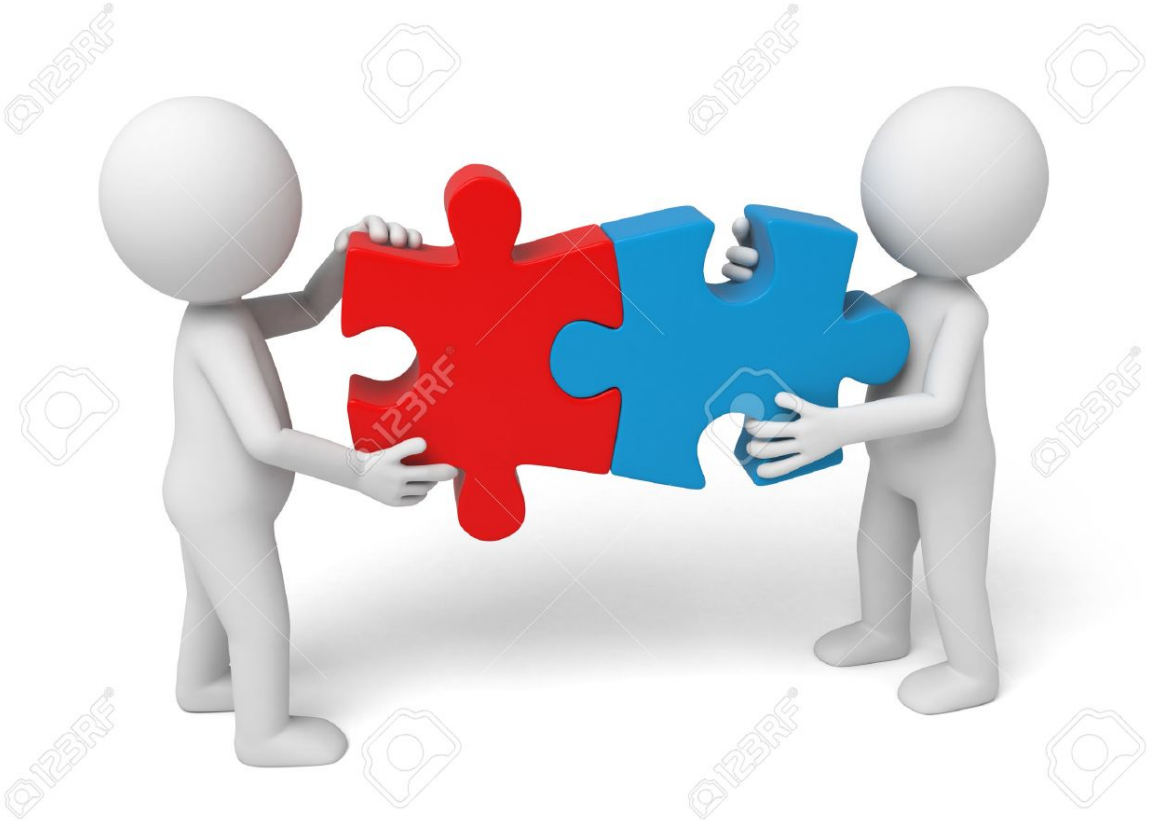
Viewing the directory organisation and files on the VM

Files and directories can be accessed through the file browser or though the terminal



The practical exercises

Throughout the exercises you will be working in pairs on one VM



The practical exercises

All practical exercises and data files are found on the VM

Virtual Machine and how to use the exercise documents

This document describes how to use the exercise documents and how to connect to the virtual machine that you will be working on in the practical exercises.

1. How to use these exercise documents
2. The virtual machines

The description of the practical exercises

The commands are written in boxes like this

```
any command
```

File paths to data are also written like the commands, for example: `path/to/files`

The tilde (~) symbol means home directory, therefore `~/practical/` is the same as `/home/practical`

We try to write tool in **bold letters** and filnames in boxes like this `filename` , but we are only human...

The description of the practical exercises

The tasks you will be performing will be annonced like this:

I] Read this line which is printed in blue

You will be given questions troughout the execises. The questions will be given like this:

? Can you read this?

The solution to the exercises is found below each question like this:

▸ **Solution** - Click to expand

When you have answered the question you can view the solution :

▾ **Solution** - Click to expand

The solutions will be printed on a grey background

The description of the practical exercises

Hints, notes and useful information are (often) put in cyan boxes like below:

> 💡 **Note:** Did you know that you cannot snore and dream at the same time.

The exercises will consist of several sub parts. A progress bar after each sub part will indicate how indicate how much is left of the exercise

Progress tracker

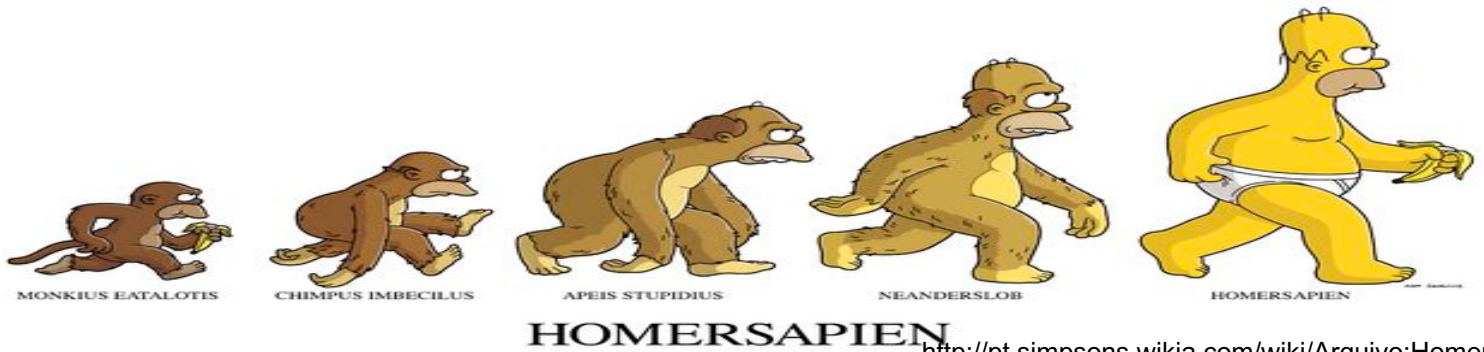
Part 1 finished

The description of the practical exercises

Friday

Monday

- Part I — Amplicon data analysis
- Part II — Quality control and trimming - Assembly and evaluation
- Part III — Taxonomic classification
- Part IV — Functional classification
- Part V — Metagenomic binning
- Part VI — Visualization and comparative
- Part VII — Group work



http://pt.simpsons.wikia.com/wiki/Arquivo:Homer_sapien.jpg

User names and password and address to the VM

https://docs.google.com/document/d/1sMP9FHc1kryNUfweodB4zqaC34XA29rdl3pTVVhg_SY/edit?usp=sharing

Go together in pairs and fill in the your names next to one machine

Login credentials:

Use kurslab00 for testing / etc. before / during course! All other VMs are on a schedule (09:00 - 18:00)

VM (machine name)	User (username)	Password	Port range (ssh)	Port range (vnc)	Student 1 Name / Email		Student 2 Name / Email	
kurslab00	kurs00	uuw7jieH	22000	25900	---	---	---	---
kurslab01	kurs01	NaiHei7r	22001	25901				
kurslab02	kurs02	bu4haiVa	22002	25902				
kurslab03	kurs03	agaiWuc4	22003	25903				
kurslab04	kurs04	aphaeM4v	22004	25904				
kurslab05	kurs05	guiM9Aik	22005	25905				
kurslab06	kurs06	Yec4thoh	22006	25906				
kurslab07	kurs07	aa4Vied3	22007	25907				
kurslab08	kurs08	aev3xae9	22008	25908				
kurslab09	kurs09	Eefeiya3	22009	25909				
kurslab10	kurs10	uPook3ou	22010	25910				

Live hands-on – Log on to the VM for the first time