



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

BIOINFORMATICS LAB

Episode II – Biological Sequences

Federico M. Giorgi, PhD

Department of Pharmacy and Biotechnology
First Cycle Degree in Genomics

Resources

- Final slides (Lessons + Exercises): <https://iol.unibo.it>



ALMA MATER STUDIORUM - UNIVERSITÀ DI BOLOGNA
INSEGNAMENTI ONLINE

- Ongoing (Lessons + Exercises): <https://giorgilab.org/lessons/>

Bioinformatics Lab - Genomics Course - Unibo - 2019

Lessons & Exercises:

<https://www.dropbox.com/sh/6dcgp2blnk75tzq/AADMAVi-F0ypk6XNOjcSvo--a?dl=0>

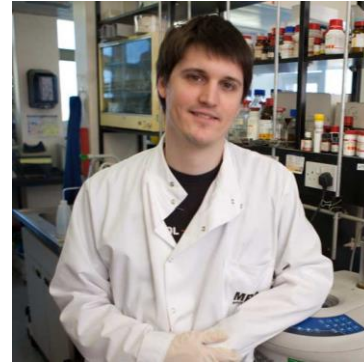
List of Tools (pick one for the Oral Exam):

<https://www.dropbox.com/s/533typb1kn2j3av/tools.xlsx?dl=0>



Guest Teachers

- Dr. Antonio Colaprico
 - University of Miami, FL, USA
 - Bioinformatics Tools to understand molecular changes
 - 15th April (Monday)



- Dr. Andrew Holding
 - CRUK, University of Cambridge, UK
 - ChIP-Seq data analysis
 - 13-17th May



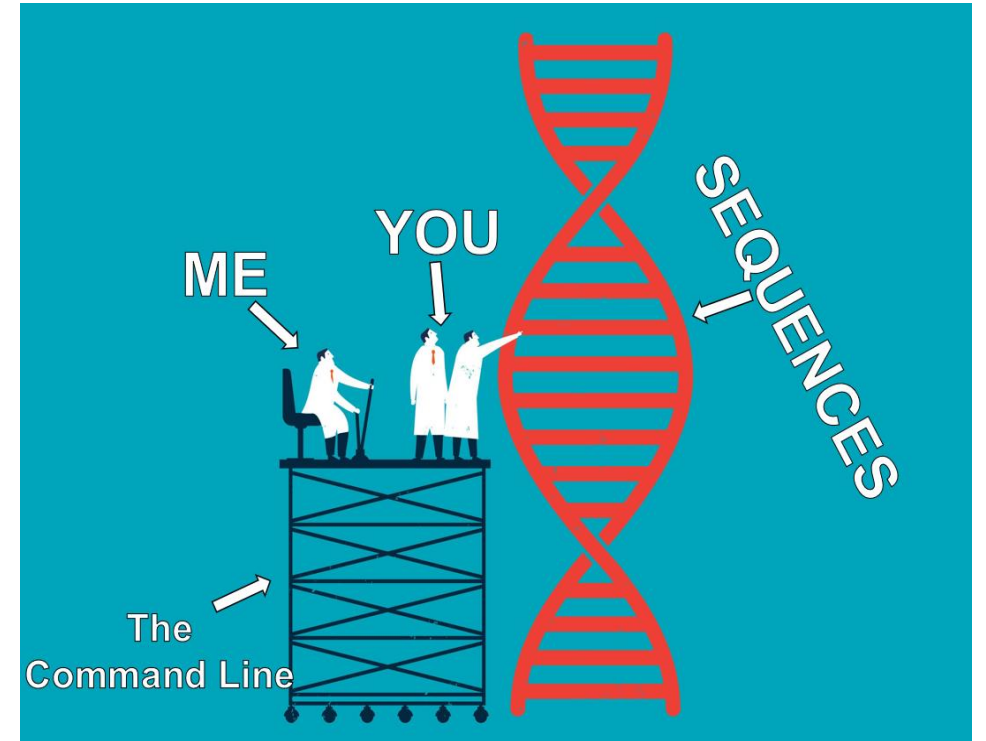
Biological Sequences: WAR PLAN

- Basic Sequence Analysis



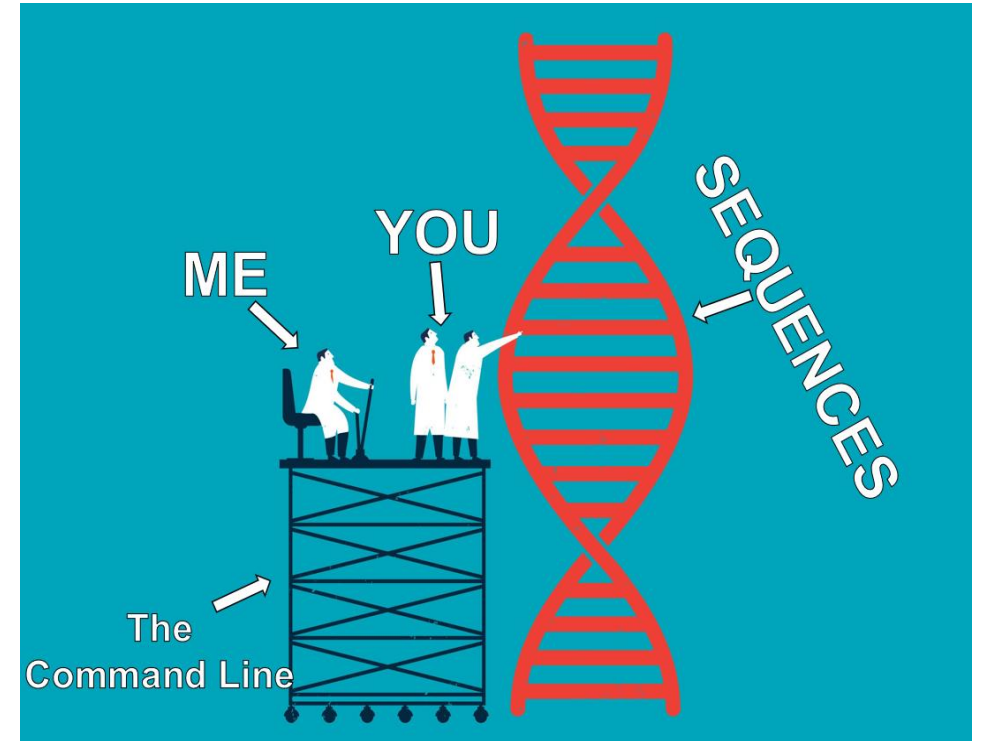
Biological Sequences: WAR PLAN

- Basic Sequence Analysis
- Using UNIX
 - More Commands
 - EMBOSS suite



Biological Sequences: WAR PLAN

- Basic Sequence Analysis
- Using UNIX
 - More Commands
 - EMBOSS suite
- Using Online Tools



Biological Sequences: WAR PLAN (2)

- Biological Databases
- For Sequences
 - NCBI
 - Uniprot



Biological Sequences: WAR PLAN (3)

- Pairwise Sequence Alignment



Biological Sequences: WAR PLAN (3)

- Pairwise Sequence Alignment
- Smith-Waterman

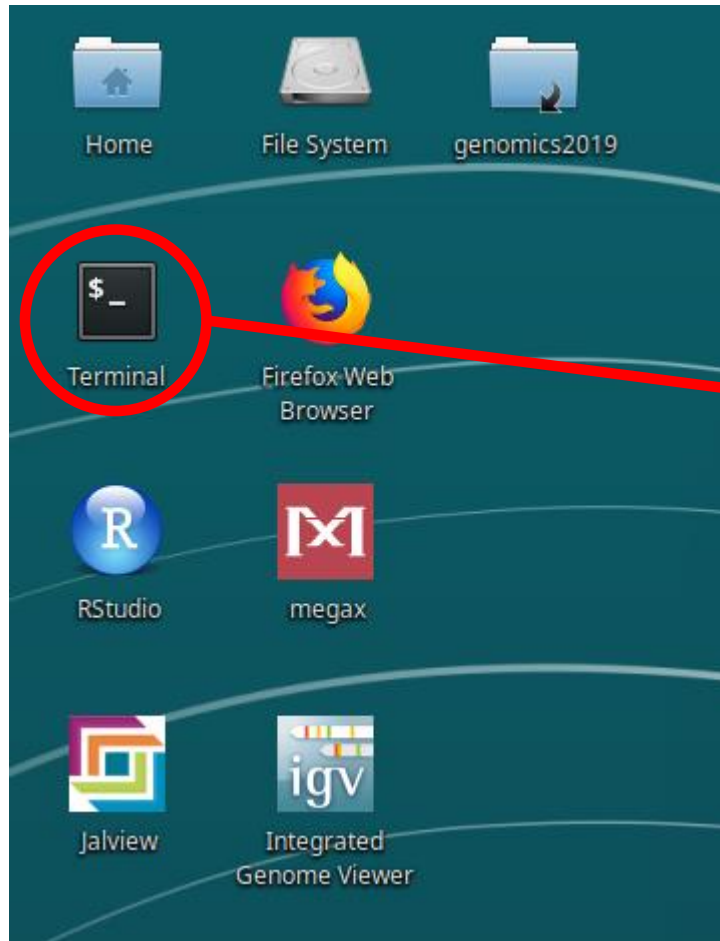


Biological Sequences: WAR PLAN (3)

- Pairwise Sequence Alignment
- Smith-Waterman
- BLAST
 - Command Line
 - Online



Let's open The Terminal!



Terminal



Reminders:

- userid **student**
- password **4genomics4**

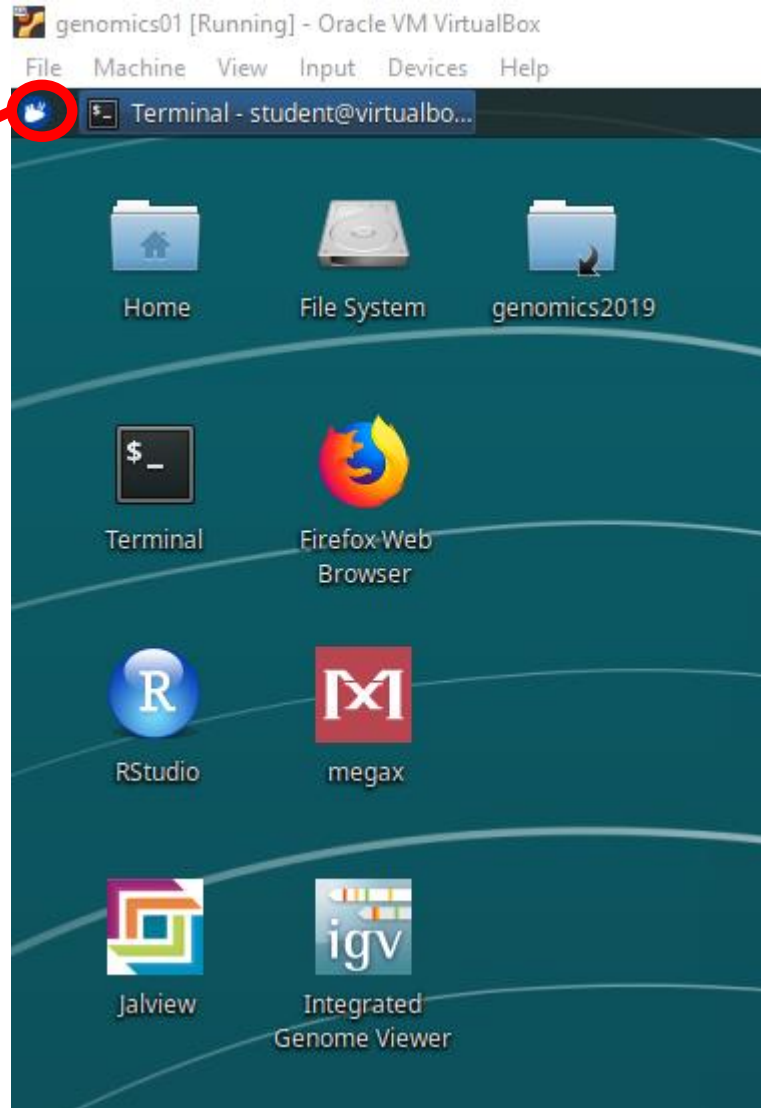
Sequences Exercises

(Open [exercises_02_sequences.pdf](#))



Turn Unix off CORRECTLY

- Please turn it off nicely

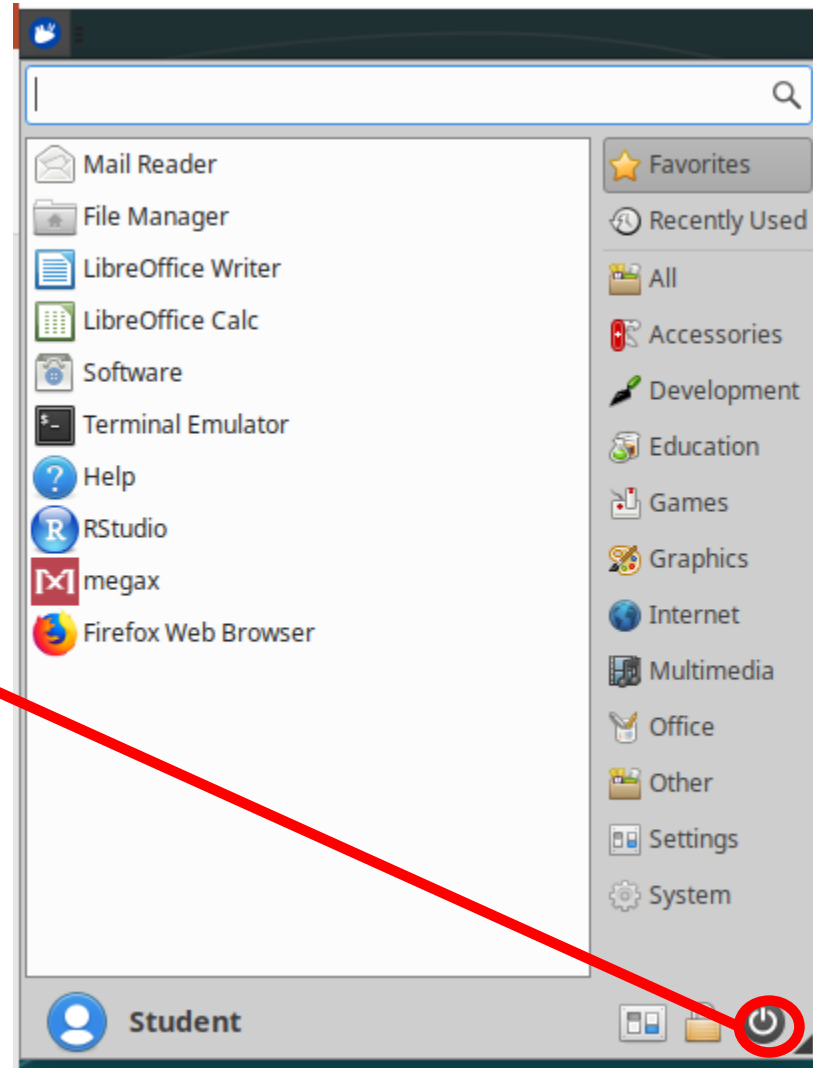


Click on the mouse

Turn Unix off CORRECTLY

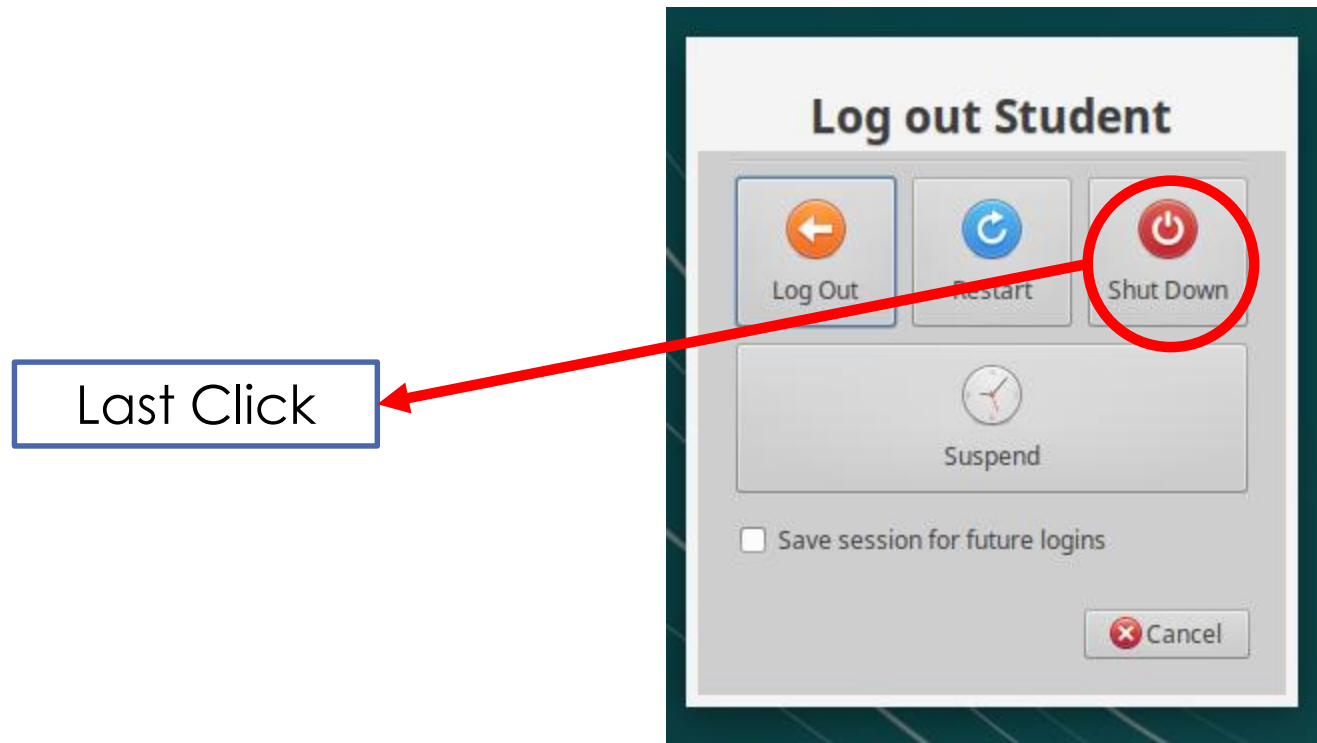
- Please turn it off nicely

Click Again



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