

# Bioinformatics

## LAB 1

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The background features a light blue DNA double helix on the left side. Scattered across the teal and white background are several chemical structures, including benzene rings, hexagons, and small molecular fragments. A large, dark teal, rounded rectangular shape is positioned in the center-right, containing the word "Organization" in white text.

# Organization

# Schedule & Contacts

## LAB 1

Thursday, May 14<sup>th</sup> 11.30 – 13.00

Thursday, May 21<sup>st</sup> 11.30 – 13.00

The **next LABS** will be held regularly each week both

**Wednesday and Thursday 11.30-13.00**

Please check the **Teaching Portal** and the **Telegram group** to be updated.

## CONTACT FOR LABS on GENOMICS

For any problems concerning the LABs, feel free to contact **Eng. Marta Lovino** during LABS class or by e-mail ([marta.lovino@polito.it](mailto:marta.lovino@polito.it)). Kindly indicate as the **subject of the email** “**BIOINFO LABs**” and cc other potentially interested people.

# How to work

**Start programming right now!**

- Coronavirus has changed our habits, so it is not possible to physically work in groups.
- Use Telegram group to ask for questions and to interact to each other!

Again,

**Start programming right now!**

LAB solutions will **NOT** be published

# Setup your environment

We strongly recommend **using Pycharm as Python IDE** and **a terminal with Anaconda distribution** installed.

Follow **the instructions in the "Setup for labs" file** uploaded on the teaching portal.

**Feel free to ask us** for problems in the installation process, we can provide you alternative solutions if you find issues with the suggested tools.

# Structure of each LAB

1. **Definition of the LAB goals**
2. **LAB Tips.** Suggestions and quick tutorials on LAB goals
3. **LAB assignments.** Your turn to program!
4. **Question & Answer session.** I am online to assist you.

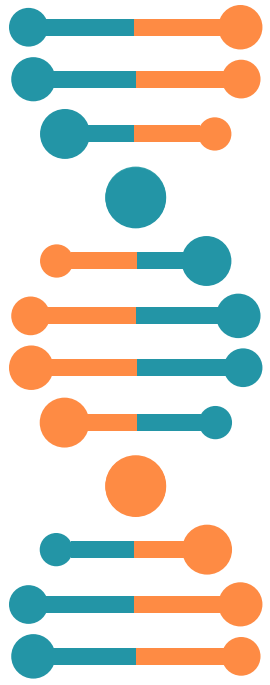


The background features a light blue DNA double helix on the left side. Scattered across the teal and white background are several chemical structures: a large polycyclic aromatic hydrocarbon (PAH) in the center-left, a benzene ring with a substituent at the bottom right, and several smaller molecules like water (H<sub>2</sub>O) and carbon dioxide (CO<sub>2</sub>) in the upper right. A thick teal wavy line separates the top and bottom sections of the slide.

# LAB 1 - Goals

# GOALS

- Run a Python program
- Pass arguments from command line
- Put comments in your code
- File Handling
- Random library
- Useful methods on strings
- Lists and dictionaries
- For and while loops





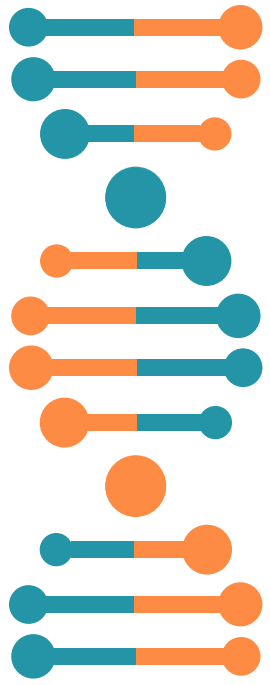


The background features a large, light blue DNA double helix on the left side. Scattered across the teal and white background are several chemical structures: a benzene ring with a substituent, a small branched molecule, a three-atom chain, a central benzene ring with two side chains, a small branched molecule, and a benzene ring with a substituent. A large, dark teal speech bubble on the right contains the title text.

# LAB 1 - Assignments

# LAB1 - Assignments

- Random FASTA file generator
- Statistic extraction
- FASTA files comparison
- Consensus regions





Questions?

Remember:  
no question is  
stupid

The background is a solid teal color. It features several faint, stylized graphics: a large DNA double helix running diagonally from the top left towards the bottom right, and a network of white and dark teal nodes connected by lines, primarily located on the left side. In the top right corner, there is a small, dark teal branching structure. In the bottom right corner, there is a small, teal DNA double helix.

**LET'S START  
PROGRAMMING!!**