

# **Practical Software Workshop (STI-S)**

## **ASSESSMENT #1: DNA**

### **2018/19**

### **COMMANDS IN LINUX**

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### **Goals**

The goals of this assessment are:

- Learn the basic commands in Unix.
- Understand how to work with files and folders.
- Search, sort and edit files.

### **WRITTEN REPORT**

In this assessment students have to deliver together the solutions of exercises 1 to 5, in a text file, and the file naLnuT.txt generated, inside a folder called G11XXEYY, where 11XX is the number of your group, and YY is the number of your partner.

It is requested to deliver in Moodle, packaged and compressed with the format: G11XXEYY.tar.gz

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## Introduction

*In this exercise you will use the file `all.frn.tar.gz`, which you must download from Moodle to your computer. This file includes DNA code files for various living beings.*

*Write the commands in Unix needed to perform the tasks requested in each section below.*

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## Exercise 1

*Unzip and unpack the file `all.frn.tar.gz` in a folder called `All`.*

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## Exercise 2

Create a list sorted by size of all files (genetic codes, or DNA) ending in `T.frn` that belong to all subfolders of `All` whose name starts with `L`.

Here `T` is the number corresponding to your team (partner) in class, and `L` is the first letter of the name of one of the team members.

Copy the list into a file called `naLnuT`.

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## Exercise 3

Choose the longest file in the list `naLnuT`.

Copy the corresponding file into a subfolder called `Na`.

Find all occurrences of the Codom (a string of 3 characters) `"ACG"` in this file (the DNA).

Proceed recursively for all DNAs in the `Na` folder.

Show on screen the number of `ACG` appearances.

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## Exercise 4

Translate the `ACG`, `ACA`, `ACC` and `ACT` codons into their associated amino acid, `Thr`.

Also transfer the `CCT`, `CCC`, `CCA` and `CCG` codes into the amino acid `Pro`.

That is, change the characters.

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## Exercise 5

Repeat the whole process in the previous exercises, but now in a single sequence of commands.