Objectives

Questions: What is a command shell and why would I use one?

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* Explain how the shell relates to the keyboard, the screen, the operating system, and users’ programs.
* Explain when and why command-line interfaces should be used instead of graphical interfaces.

Demo

**1. Background**

We will also meet Nelle Nemo, a marine biologist, who has just returned from a six-month survey of the North Pacific Gyre (<https://en.wikipedia.org/wiki/North_Pacific_Gyre>) where she has been sampling gelatinous marine life in the Great Pacific Garbage Patch (<https://en.wikipedia.org/wiki/Great_Pacific_garbage_patch>) She has 1520 samples that she’s run through an assay machine to measure the relative abundance of 300 proteins. She needs to run these 1520 files through an imaginary program called goostats she inherited. On top of this huge task, she has to write up results by the end of the month so her paper can appear in a special issue of Aquatic Goo Letters.

The bad news is that if she has to run goostats by hand using a GUI, she’ll have to select and open a file 1520 times. If goostats takes 30 seconds to run each file, the whole process will take more than 12 hours of Nelle’s attention. With the shell, Nelle can instead assign her computer this mundane task while she focuses her attention on writing her paper.

Throughout this workshop we are going to learn how Nelle can achieve this. More specifically, I'm going to explain how Nelle can use a command shell to run the goostats program, using loops to automate the repetitive steps of entering file names, so that her computer can work while she writes her paper. As a bonus, once she has put a processing pipeline together, she will be able to use it again whenever she collects more data.

**2. Video notes**

(1) Use $ as prompt, type: PS1="$"

(2) type: ls