



# Introduction to the Command Line for Genomics

<https://datacarpentry.github.io/shell-genomics/>

The screenshot shows the course page for 'Introduction to the Command Line for Genomics' on the Data Carpentry website. The page has a dark theme with a teal header. The main navigation bar includes the Data Carpentry logo, a 'Learner View' toggle, and links for 'Key Points', 'Glossary', 'Learner Profiles', and a 'More' dropdown. A search bar is also present. The left sidebar, titled 'EPISODES', lists the course content: 'Summary and Setup', '1. Introducing the Shell', '2. Navigating Files and Directories', '3. Working with Files and Directories', '4. Redirection', '5. Writing Scripts and Working with Data', and '6. Project Organization'. The main content area is titled 'Summary and Setup' and contains an introductory paragraph about the Command Line Interface (CLI) and a bulleted list of reasons to learn the CLI. A 'Next: Introducing the...' link is visible at the top right of the main content area.

**Introduction to the Command Line for Genomics**

Key Points | Glossary | Learner Profiles | More ▾

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EPISODES

- **Summary and Setup**
  - 1. Introducing the Shell
  - 2. Navigating Files and Directories
  - 3. Working with Files and Directories
  - 4. Redirection
  - 5. Writing Scripts and Working with Data
  - 6. Project Organization

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## Summary and Setup

Command line interface (CLI) and graphic user interface (GUI) are different ways of interacting with a computer's operating system. They have different pros and cons. Most people are familiar with the GUI as it is the default interface for most software, particularly on Windows and Mac OS. When using the GUI, you see and interact with visual representations of files, folders, applications, and most other functions of your computer. When using the CLI, you work largely with text representations of software, files, folders, input and output. The *shell* is a program that allows you to control your computer by typing instructions on the CLI with a keyboard.

There are several reasons to learn how to use the CLI:

- For most bioinformatics tools, there are no graphical interfaces. If you want to work in metagenomics or genomics, you're going to need to use the CLI/ shell.
- The shell gives you power. The command line allows you to work more efficiently. Tasks that are repetitive (e.g. renaming hundreds of files) can be automated. Tasks that are tedious (e.g. testing a range of input parameters) can be simplified.
- To use remote computers or cloud computing, you often need to use the shell.