The Joy of Data: *Command Line Interface (CLI) Technologies*
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"Graphical user interfaces make easy tasks easy, while command line interfaces make difficult tasks possible." "While CLI can be intimidating for beginners, it is a powerful tool for experienced users, who can achieve more control over their systems."

Introduction:
A Command Line Interface (CLI) application is one where a user primarily uses a Terminal window to complete a task on a computer. Using a Terminal window would be like using Excel but you would only enter formulas. There are no graphical menu choices; everything is a command or function. CLI applications can also be called "programming" or "scripting" languages. Generally speaking, CLI applications are harder to learn than GUI applications (aka "programming" or "scripting") but CLI applications can indeed be learned and used by business students. Getting good at CLI applications can also elevate a Business Analytics career position to a Data Science career position. Two last things: 1), Python is probably easier to learn than R, and 2), from a business analytics perspective, while Python and R take different approaches to analyzing data, there is likely more than a 90% overlap in basic analytics functionality (i.e., each language does similar things).

R is a desktop application but can be run for free in CSUN's cloud server, [MyCSUNSoftware](), aka "Apporto").

The following are the primary CLI applications common in business analytics. This list is not exhaustive. Further questions can be directed to the instructor.

[Python]() — Desktop-based, free, all operating systems:
> This is a CLI application that is widely used in academia and industry, often for machine learning and "big data" analyses. Python comes with MacOS and Linux; it is an [easy install on Windows]().

[R]() — Desktop-based, free, all operating systems:
> This is a CLI application that is widely used in academia and industry, often for machine learning and "big data" analyses. Python comes with MacOS and Linux; it is an [easy install on Windows]().

CSUN students also have free access to "JupyterHubs". These are cloud services that make it easier to learn because you can use a CLI application in a GUI-like interface:

> [https://csun.cloudbank.2i2c.cloud/]()
> [https://tide.sdsu.edu/]()