Working with Programs: Takeaways

Syntax

- Assign a variable

  ```
  OS = Linux
  ```

  OR

  ```
  OS = "Linux"
  ```

- Print a variable

  ```
  echo $OS
  ```

- Create an environment variable

  ```
  export LINUX="Linux is best"
  ```

- Run python inside of Bash

  ```
  python
  ```

- Access environment variables

  ```
  import os

  print(os.environ["LINUX"])
  ```

- See what folders are in PATH

  ```
  echo $PATH
  ```

- List files in directory in long mode

  ```
  ls -l
  ```

- Specify a longer flag with two dashes

  ```
  ls --ignore
  ```

Concepts

- A shell is a way to access and control a computer.
- Bash is the most popular of the UNIX shells, and the default on most Linux and OS X computers.
- Command line shells allow us the option of running commands and viewing the results, as opposed to clicking in icon in a graphical shell.
- Bash is essentially a language, which allows us to run other programs.
- A command language is a special kind of programming language through which we can control applications and the system as a whole.
- Quotations around stringsin Bash are optional, unless they contain a space.
- We can set variables on the command line by assigning values to them.
- In the command line environment, variables consist entirely of uppercase characters, numbers, and underscores.
- We can assign any data type to a variable.
- Accessing the value of a variable is not much different than Python -- we just need to prepend it with a dollar sign (`$`).
- Environment variables are variables you can access outside the shell.
- We can run many programs from Bash, including Python.
- `os.environ` is a dictionary containing all of the values for the environment variables.
- The `PATH` environment variable is configured to point to several folders
- Programs are similar to functions, and can have any number of arguements
- Programs can also have optional flags, which modify program behavior
- We can chain multiple flags that have single, short, character names

Resources

- UNIX Shells
- Environment Variables