Understanding how Executables and Packages are Found

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What will you learn?

- How the computer knows what command to run
- How python figures out which package to import when python encounters a statement like `import numpy`

What does the Operating System do?

- Manage multiple processes
- Allocate resources (cpu, memory)
- Load and keep track of shared libraries
- Middle-ware between you and the hardware

Important Environment Variables

- PATH
- LD_LIBRARY_PATH
- LD_RUN_PATH
- DYLD_FALLBACK_LIBRARY_PATH (on OSX)

Executable Resolution by OS

- Fully-specified executable
- Alias
- scripts (+x mode set) and executables in PATH (left to right precedence)

What happens if you do the following?

- Type python and press enter
- Which python version ran?

How does python know the package?

- Which python?
- How to know which package?
  - print(package.__file__)

Python package resolution

- Entries in sys.path
- PYTHONPATH env. var.

conda magic

- conda **only** changes $PATH
- Every package is referenced by @rpath (relative path to condo python)

Let's fix Rob's python problems

- Convert from python2 -> python3
- Fingers crossed