Computational Fluency Workshop

Day 2: Beginning with structure, continued

https://github.com/brownritt/cfw2022

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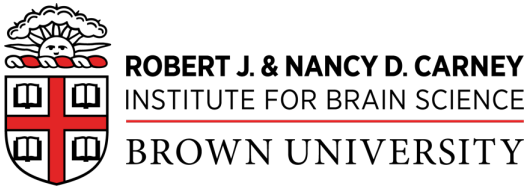

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Recall: What is a computer?

A central processor (**CPU**), and often auxillary processors (e.g. graphics processing units, **GPU**s)

Memory, for fast and transient work

Storage (hard drives, thumb drives, etc), organized as a ***File system***, for slow and permanent work

Devices (e.g. keyboard, screen, WiFi interface…) for interfacing with the world

Processes, many task-specific programs, interacting with each other

Every command invokes some set of the following questions:

Who am I? ***Accounts***
What am I allowed to do? ***Priviledges***
Where am I? ***Working directory***
Where is the file that I want to run or access? ***Paths***
What kind of thing is the file I want to run or access? ***File formats***

Helpful steps when starting a new project

Pick a good name: short, descriptive, and unique; no spaces or weird characters

Set up a folder skeleton (manually, or with a utility like `cookiecutter`) before adding any important files

Add a README file (in "markdown"), that explains the purpose of the project

Initialize `git`, make an initial commit

Make virtual environment (depends on language), capture to a `requirements.txt` or `environments.yml` file in the top project directory and commit

Copy any files you need from other locations, commit the changes

Do cool science

Live demos and exercises

Processes

You are here → Shells, command line interfaces, the REPL framework

IDEs over editors

Exercise: pupillometry analysis, setting up a new project, beginnings of versioning