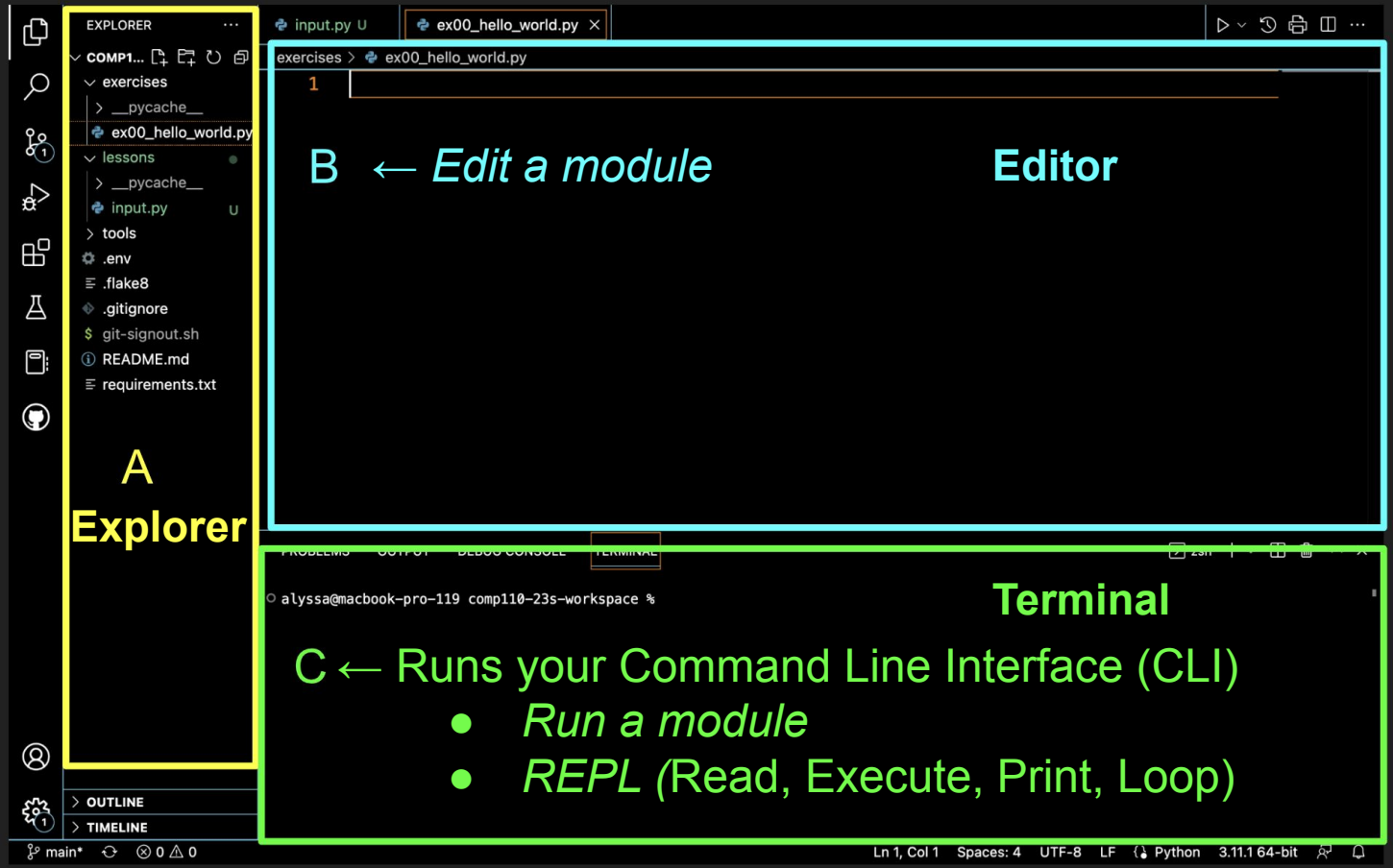
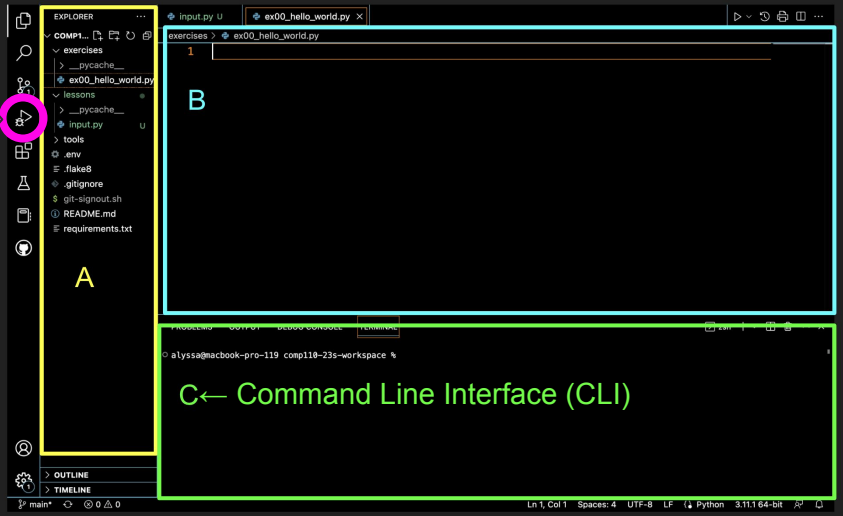
CL01: Objects and Data Types

First, an introduction to Visual Studio…

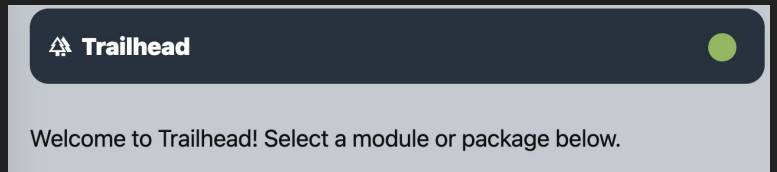


Ways to run code



Use Trailhead:

- Launch with the debug button
- “Starting Trailhead server at http://localhost:1110”



Interactive (like a conversation with your computer):

REPL: Read Execute Print Loop

- To initialize the REPL in your terminal, type:
  - `python`
- `>>>` means you’re in the REPL

To run a module (execute a python (.py) file) from your terminal, type:

- `python -m my_file_name`

Objects and Types

An **object** is *typed* unit of data in memory.

The object's **type** classifies it to help the computer know how it should be interpreted and represented.

Example types of data:

- Numerical
- Textual
- Sequences
- Grouping of different types

Numerical Built-In Types

- Integers
  - `int`
  - Zero or non-zero digit followed by zero or more integers
  - 100 is an int but 0100 is not
  - 3 is but 3.08 is not
  - -2000 is but -2000.1 is not

- Decimals (Or floats)
  - `float`
  - Examples: 3.02, 4008.0, -16.99999
  - Not the *only* way to represent decimal numbers, but a very precise way

Textual Built-In Type

- Strings
  - `str`
  - A sequence (or *string*) of characters
  - Can be denoted using “ ”

Indexing

- **Subscription** syntax uses square brackets and allows you to access an item in a sequence
- **Index numbering starts from 0**

Docstrings

- A string written at the top of every file to describe its purpose.
- Denoted with three quotations “““ ”””

Booleans

- bool
- Evaluates to True or False

Check an Object's Type

- type()

Change an Object's Type

- float()
- str()
- int()

Homework!

- Respond to **Lesson 01 (LS01)** and **Lesson 02 (LS02)** Gradescope Questions → due **Wednesday** (**today!**) at 11:59pm
  - **LS01:** VS Code, Terminal, + Running a Program
  - **LS02:** Objects and Data Types
- Course Setup + EX00 (due August 27 at 11:59pm)
  - Come to open house for help!