Let's Mix it Up!

ChatGPT 4o/Dall-E 2025

Agenda

- **Review: ChatGPT and R/Rstudio**
- Programming convention
- Rstudio panes
- Handout

Review

- Good and bad experiences with ChatGPT? Other LLMs?
- What is explicit programming? Give examples.
- What are data types versus data structures?
- What data type is the default in R?
- What subclass is the default for numeric class objects in R?
- How many dimensions does a DataFrame have in R?
- Which data structure in R has more than 2-dimensions?
- What are the 4 components of grammar of data manipulation?
- What are the 3 components of grammar of graphics?
- What are pipes in R?
- How does `group_by()` work? Why is it dangerous?
- Questions from homework?

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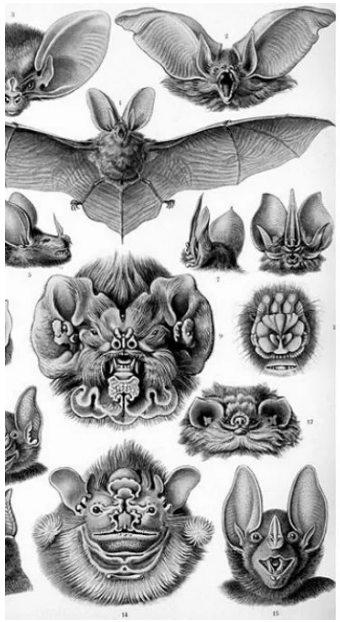

Common programming convention

- Something in **<angle brackets>** serves as a placeholder in cases where you should fill in information. For example:
  - name = <your_name> would become name = “charles”
- **[square brackets]** are often used to designated optional options
- **Backticks (`)** signify code. Note: this symbol is *different* than an apostrophe (‘). For example:
  - `name = “charles”`
- **`foo`, `bar`, and `foobar`** are common placeholders as well, usually `foobar` is used in more complex cases than `foo` and `bar`
- **snake_case** is often used for objects in R and Python, while **camelCase** is often used for variables is languages like Java. **PascalCase** is used for classes. Column names, including in a dataframe, often use snake_case or Title_Case.
- **functions()** or **foo_functions()** look like this while **object.methods()** or **class.methods()** look like this
- *(Functions is a reusable block of code. Objects are defined by their class which is like a set of behaviors. Methods are like functions but act differently on objects depending on their class.)*
- **CONSTANT_VARIABLES**, variables you don’t change, are often named in all caps. For example `PI = 3.14`

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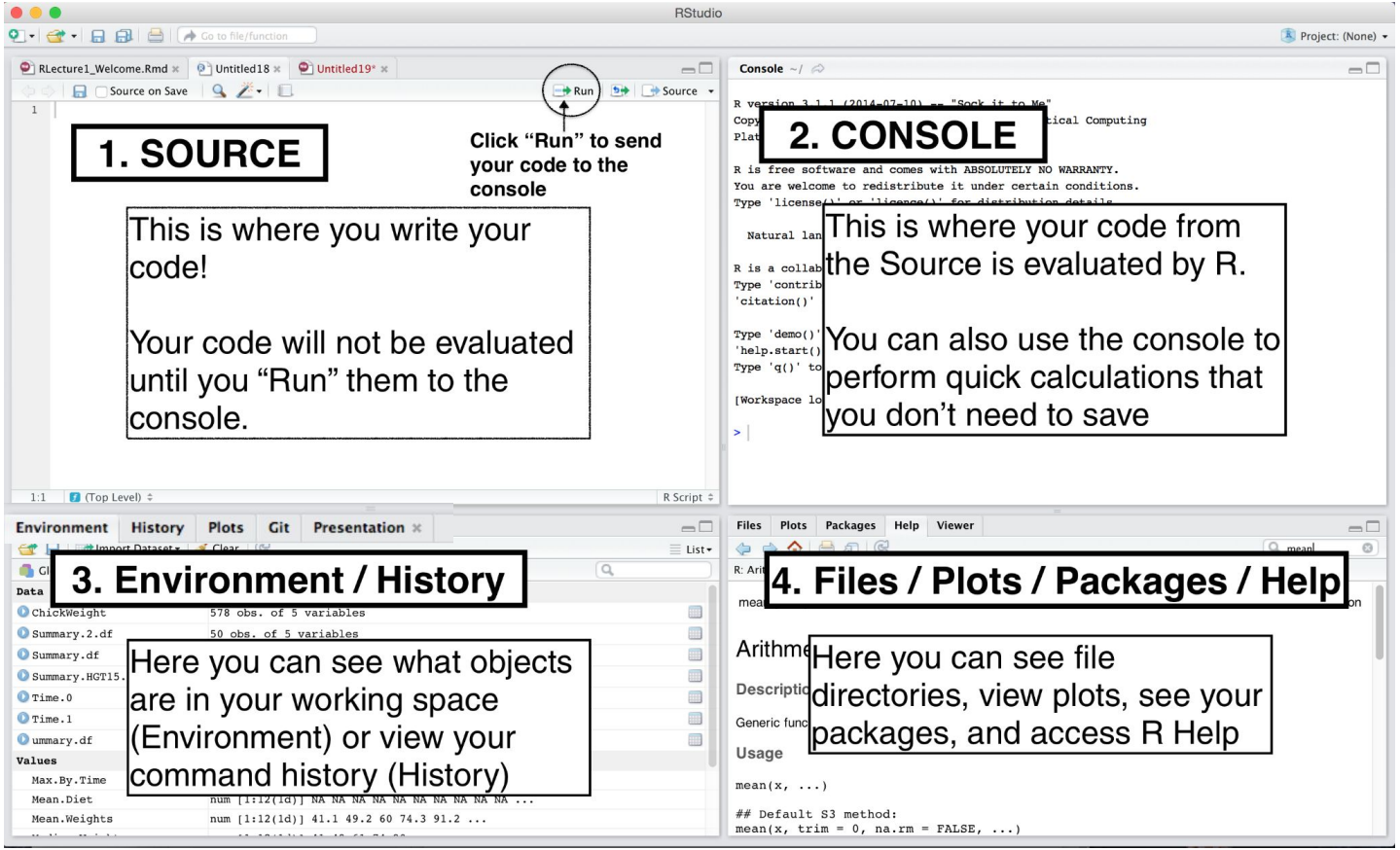
RStudio
1. SOURCE
Click "Run" to send your code to the console
This is where you write your code!
Your code will not be evaluated until you "Run" them to the console.
2. CONSOLE
This is where your code from the Source is evaluated by R.
You can also use the console to perform quick calculations that you don't need to save
3. Environment / History
Here you can see what objects are in your working space (Environment) or view your command history (History)
4. Files / Plots / Packages / Help
Here you can see file directories, view plots, see your packages, and access R Help

Code Along