Intro to R and RStudio

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- Both R and S are *statistical* programming languages; that is, they were developed specifically with data analysis tasks in mind.

According to John Chambers, one of the creators of S:

"[W]e wanted users to be able to begin in an interactive environment, where they did not consciously think of themselves as programming. Then as their needs became clearer and their sophistication increased, they should be able to slide gradually into programming, when the language and system aspects would become more important."

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- R is now the dominant language in industry "data science" positions.

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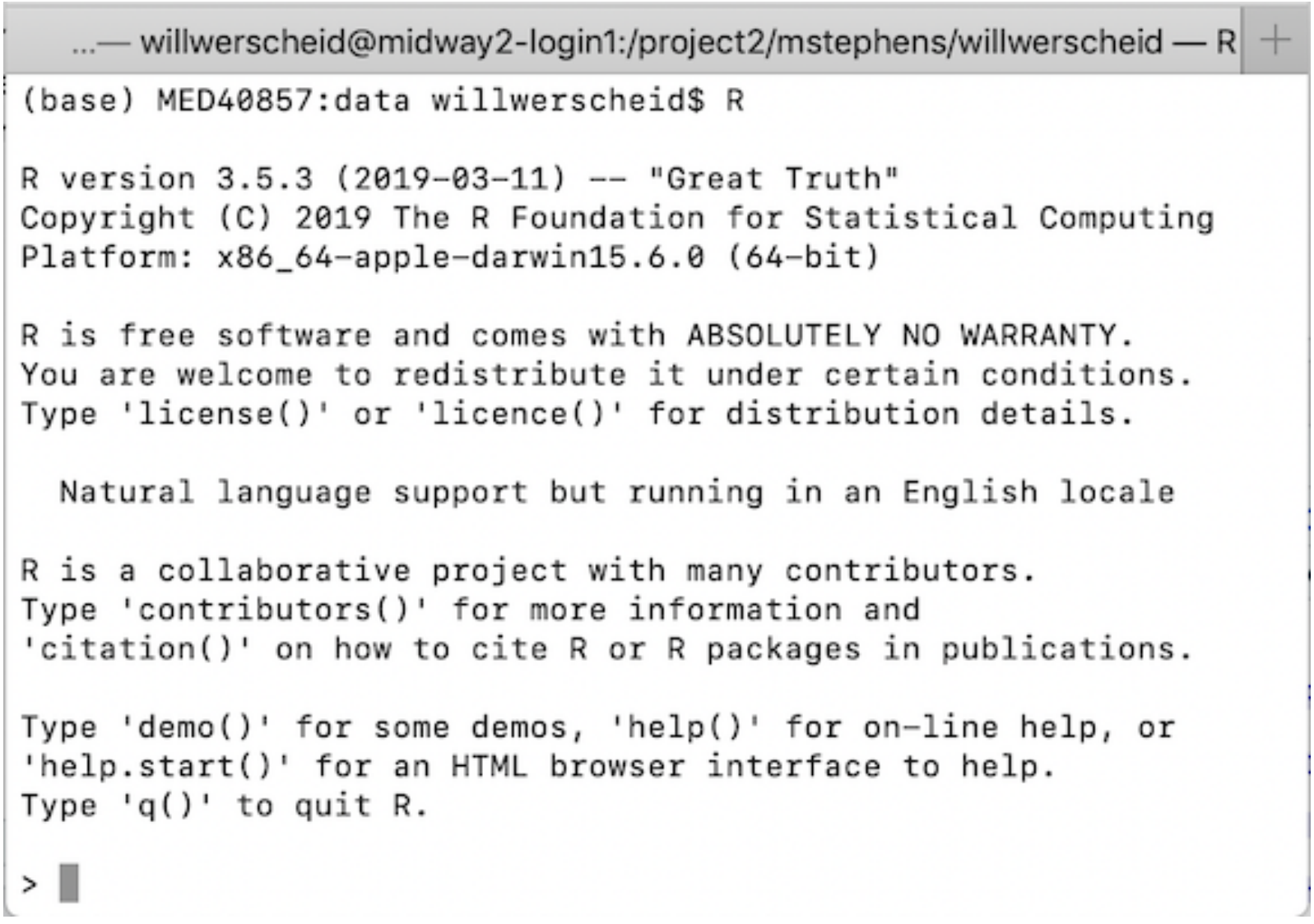
- Makes it much easier to do code-related things via a **GUI** (graphical user interface).
- Other IDEs exist, but RStudio is by far the most widely used.

Why RStudio?

Without RStudio, working in R looks something like this:



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- Create and tinker with visualizations.
- Create reports via R Markdown.
- Manage projects via git.

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You can certainly do each of these things outside of RStudio if you *really* want to; but RStudio allows you to do it all in one place. Think of it as a one-stop shop for managing R projects.

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- Can also be used to create presentations (like this one!).

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- Others can download and run themselves, so the analysis is **reproducible.**

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- GitHub is a *hosting service* that allows users to manage online repositories via git.
- GitHub Desktop provides a *GUI* (i.e., a point-and-click interface) for interacting with GitHub.