

# Data Science in R with Visual Studio Code

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Data Science and Causal Inference Workshop 2025

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University of  
St Andrews | FOUNDED  
1413 |

# Learning objectives

- Understand the basic ingredients of modern data science tools
- Get some R code running in Visual Studio Code, focusing on data analysis
- Start up a coding environment in Visual Studio Code or on GitHub using GitHub Codespaces. Understand its basic features
- Interrogate files with the help of the generative AI tool GitHub Copilot and learn best practices for AI assistance

# Modern data science tools



GitHub  
Copilot

ANTHROPIC



git



GitHub



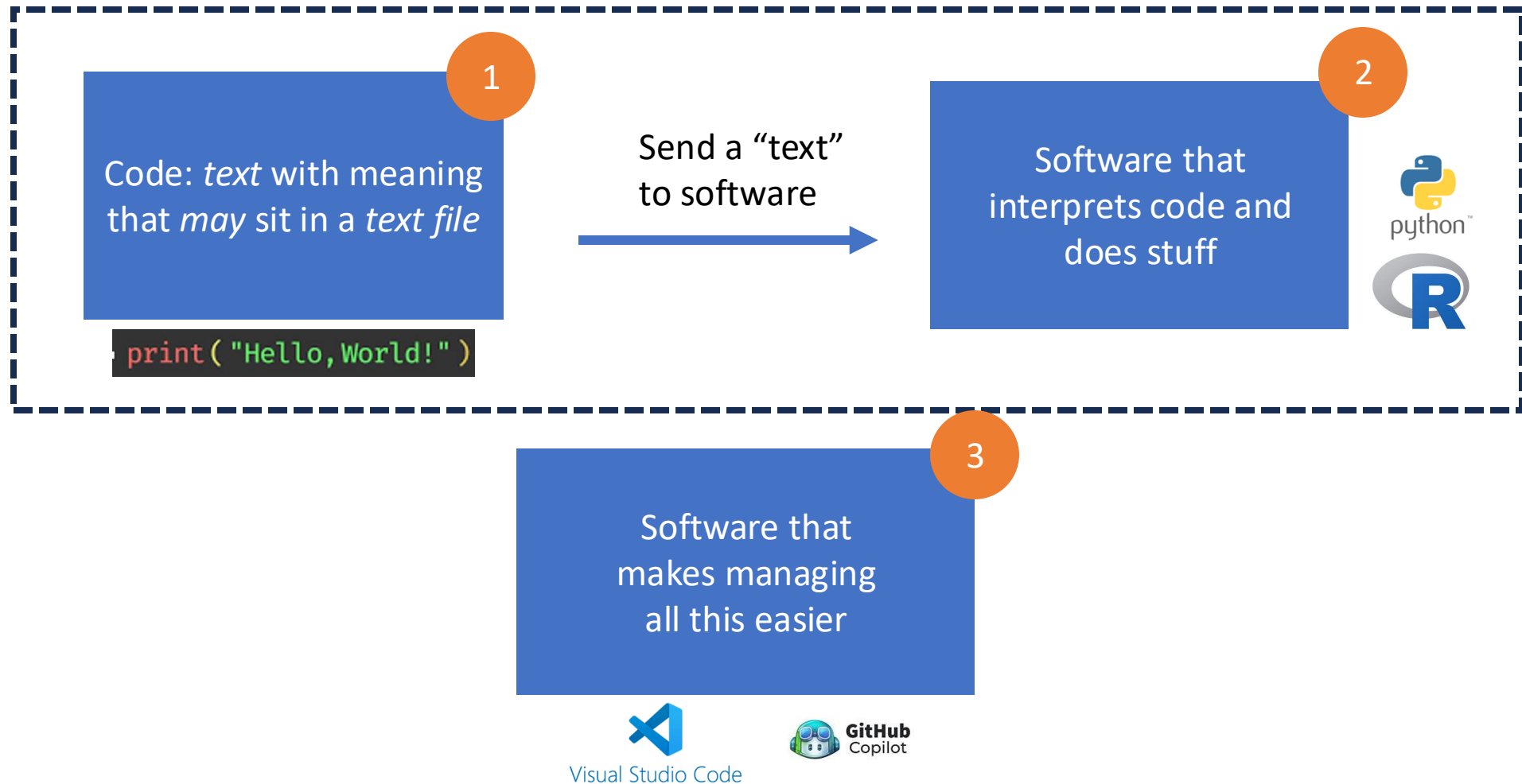
OpenAI



Visual Studio Code



# Principle 1: Coding is fancy text messaging



The screenshot shows the VS Code interface for an R Codespace. The Explorer sidebar on the left (labeled with a '3' in an orange circle) shows the file structure: `WORKSPACE [CODESPACES: ...]`, `.devcontainer`, `.vscode`, `python`, `r`, `hello-world.r`, `stata`, `.gitignore`, `LICENSE`, and `README.md`. The main editor (labeled with a '1' in an orange circle) displays the `hello-world.r` file with the following content:

```
r > hello-world.r  
1 print("Hello from R!")  
2
```

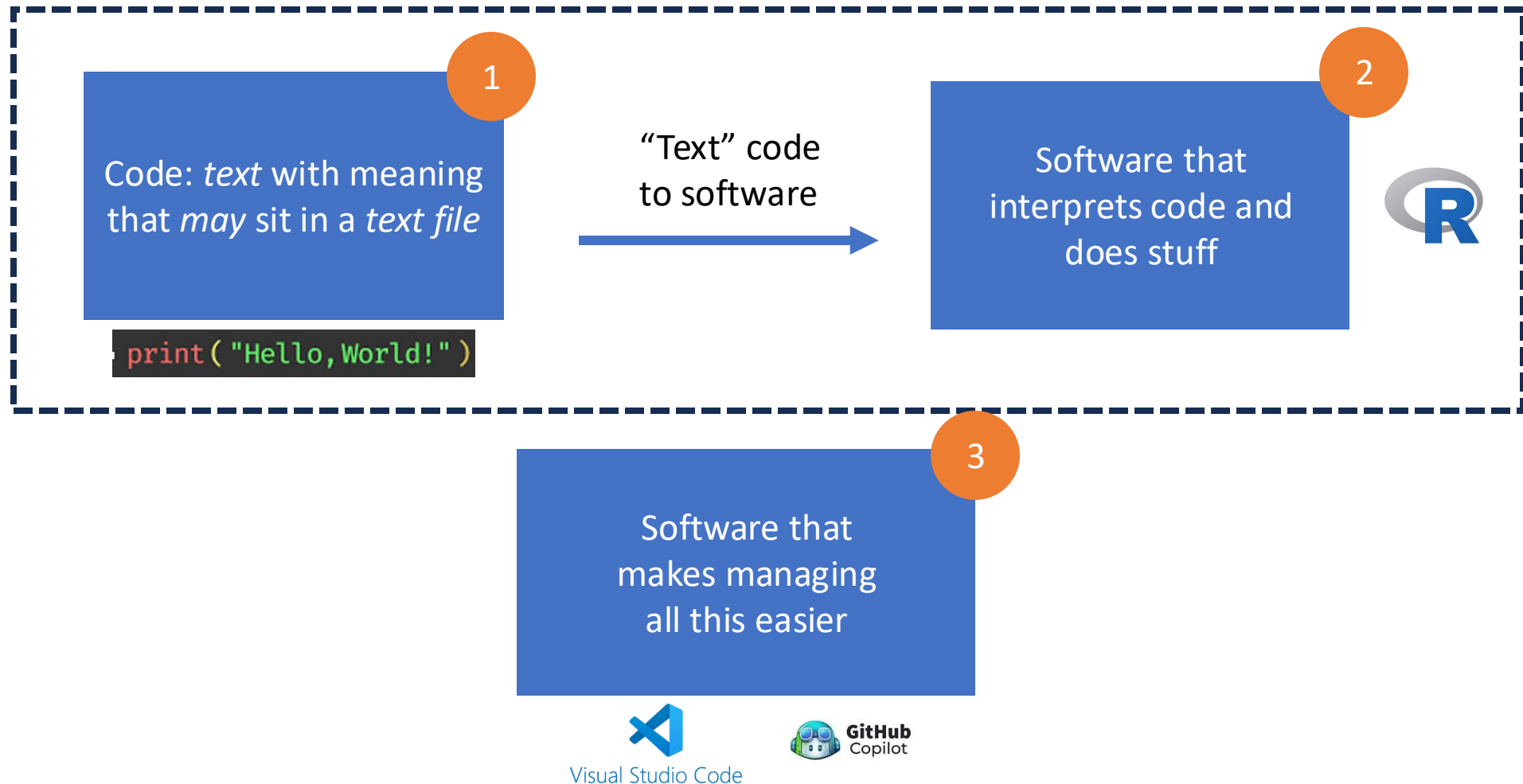
The bottom panel (labeled with a '2' in an orange circle) shows the `TERMINAL` output:

```
r$> print("Hello from R!")  
[1] "Hello from R!"  
  
r$>
```

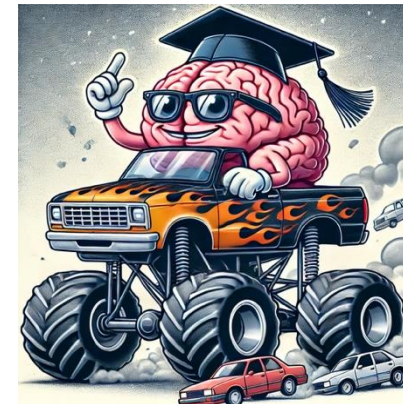
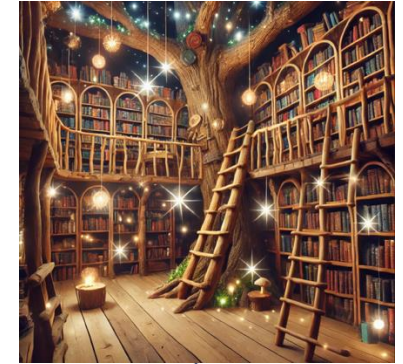
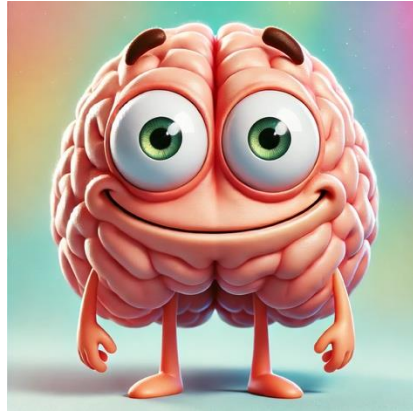
An orange arrow points from the code in the editor to the terminal output. The right sidebar features the **GitHub Copilot** panel, which indicates it has used 1 reference and provides an explanation of the `print` function. At the bottom, the status bar shows the environment as `R 4.4.2: 1434` and the current position as `Ln 2, Col 1`.

<https://github.com/christian-engels/course-materials>

# Principle 2: Copilot = “always-on” collaborator



# Principle 3: “Base R” is stupid



Visual Studio Code





## HORROR LEGENDS

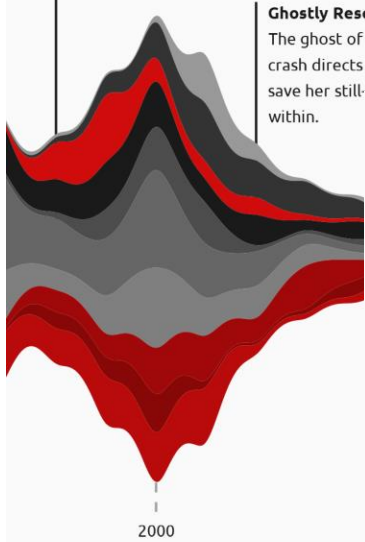
Of the 253 horror articles published on Snopes.com between 1997 and 2023, only 50 were rated as "true". The most common words in the claims were: killed, died, found, woman, car, death, child, girl, human, and children. The most common horror descriptions featuring **women and children**.

### Shannon's Friend

A policeman stalks a young girl on the Internet to show her how easily even the most innocuous information can be used to find someone in real life.

### Ghostly Rescue

The ghost of a woman killed in a car crash directs rescuers to the wreck to save her still-living baby, who is trapped within.



Data: Snopes.com

@nrennie35 fosstodon.org/@nrennie

### Hair Weave Worms

Weave made from dead person's hair.

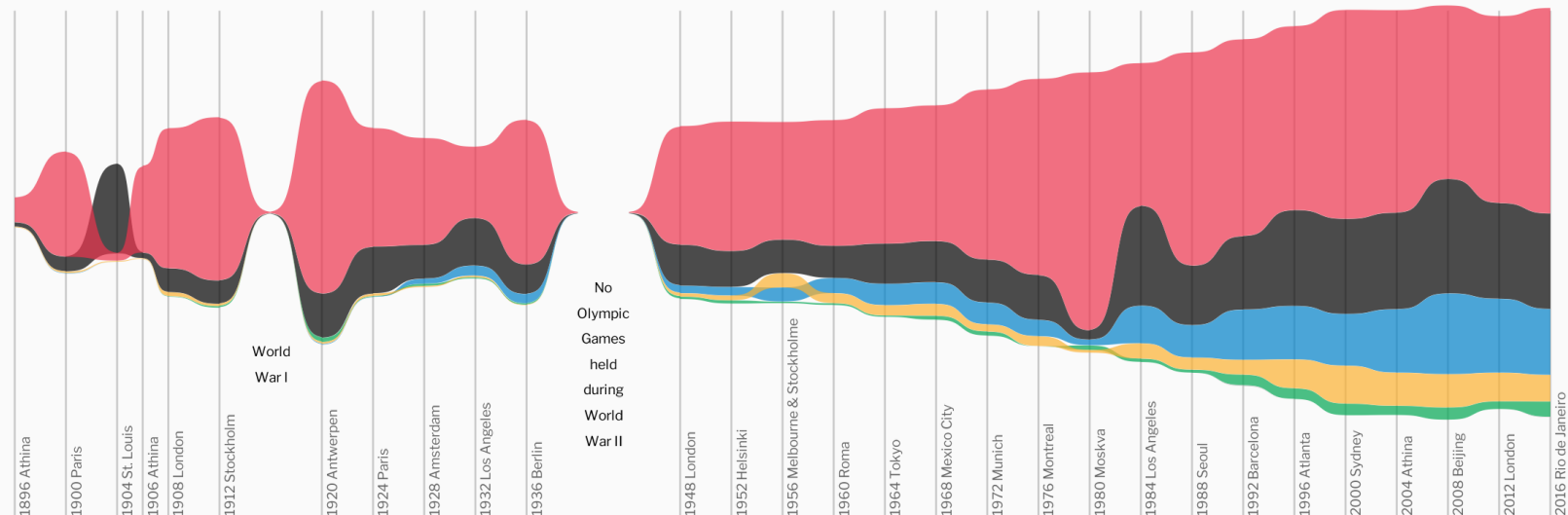


N. Rennie | Data: Post45 Data

## A Visual History of Which Continents Have Dominated the Summer Olympics

Athletes from **Europe**, Americas, **Asia**, **Oceania**, and **Africa** have won medals in the Summer Olympics, held every four years. Unknown countries, independent olympic athletes, and the refugee olympic team are included in **other** athletes.

Data: Sports Reference | Graphic: @nrennie35 fosstodon.org/@nrennie nicola-rennie nrennie





Tidyverse

