# **RBYTE**

# PENNIES TO THE MOON 2 - Using R

## Could you use R to figure it out faster? Or more exact?

### We Now Know the Motivations and Principles of Scientific Programming…

1. Automate time-intensive tasks
2. Modify and update research: If you write clean code, it can be modified and rerun over and over.
3. Share methods with the public and other researchers: Code is easy to share, making science more open and reproducible.
4. Document workflows: Code allows you to easily document your workflow. You can use comments to explain every step of the process (to your future self or others), so if you need to update or change something later, it is fast and simple.
5. Enable collaboration: Code makes collaboration easier.

### Co-Lab Activity:

Create a copy of [PenniesToTheMoonByte.ipynb](https://colab.research.google.com/drive/11rnbU1gu_6IpXba9vrD5u29nE4xWdDJM?usp=sharing) (and share it with your team)

Reflect:

1. How does using R for scientific programming contribute to the reproducibility and transparency of research compared to manual methods/Fermi estimation?
2. What are some specific features of R that facilitate collaboration among researchers in scientific projects?
3. Can you provide examples of time-intensive tasks that can be automated using R in scientific research, and how does this automation improve research efficiency and productivity?