Why is code important?

Agenda

1. Why is code important for publishers
2. What is Code Ocean
3. Reproducibility
4. Demo
5. Jupyter live machines
6. Combining languages
What is Code Ocean?

Code Ocean is a cloud-based executable research platform. It allows authors to upload their algorithms, and link them back to their articles. The authors and other researchers can run the code, to test for reproducible results, and also execute the code with new input values.

Before Code Ocean

1. Find the code
2. Acquire the right hardware
3. Set up the environment
4. Import the right files
5. Installing all dependencies, packages, versions, OS etc...
7. Run
8. Results

IS THERE A REPRODUCIBILITY CRISIS?

- 35% Yes, a significant crisis
- 19% Yes, it’s a crisis
- 9% No, it’s all OK
- 5% Don’t know

1,576 respondents surveyed

HAVING FAILED TO REPRODUCE AN EXPERIMENT?

Most scientists face unexpected barriers to reproduce results.
- Someone else’s... > My own

Science
Chemistry
Math
Physics
Engineering
Medicine
Behavioral science
Other

0 20 40 60 80 100

Nature 533, 452–454 (26 May 2016) doi:10.1038/533452a
Based on the method described in

Integrative pharmacogenomics to infer large-scale drug taxonomy

The project assess the utility of data integration from multiple drug information sources. The project also characterizes novel implications of data-driven drug repurposing.

- Developing novel methods to parse and connect with chemical activity of drugs
- Characterizing the link between pharmacological profiles and clinical endpoints

Jupyter interactive machine
Multiple languages

Why is it important?

Reproducibility
Code Ocean allows other researchers to run the code, to test for reproducible results, and also execute the code with new input values.

Impact
There is a positive correlation between the availability of code and software and the number of citations.

Reuse
Allows users to run multiple versions of the algorithm, augmenting the code on demand using alternative inputs.

Move beyond the pdf
Brings author work alive in an executable environment and provides a new level of engagement to end users.

Questions?

Pierre Montagano
Business Development
Code Ocean
pierre@codeocean.com