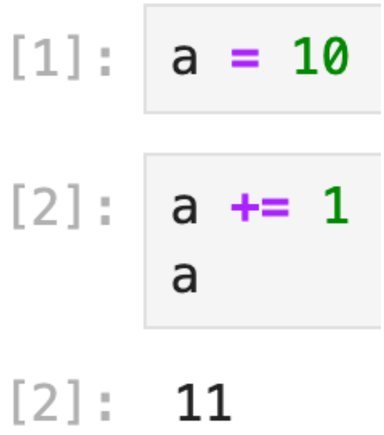
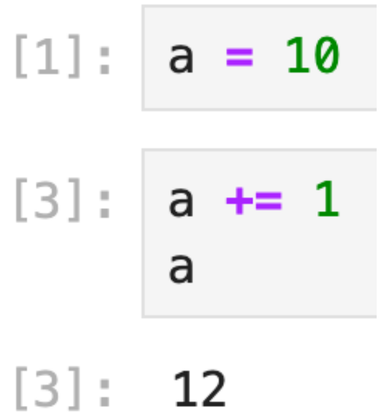
A Thin Veneer over the Interpreter

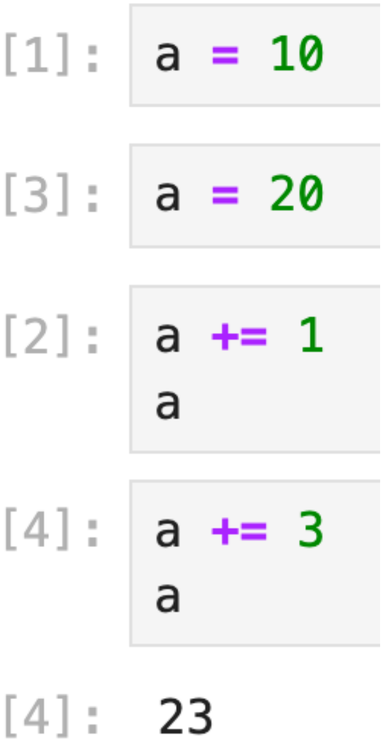
Notebooks become messy!



All cells share a global state



Cells have side effects



Cells can go out of order

Prior Results of Jupyter in General Data Analysis

- “Exploratory” [Kery and Myers 2017]
- “Throw-away” [Kandel et al. 2012]
- “Messy” [Kery et al. 2018, Rule et al. 2018]
- Too much effort to clean up the mess [Rule et al. 2018]

Mary Beth Kery and Brad A. Myers. 2017. Exploring Exploratory Programming. VL/HCC 2017.

Sean Kandel, Andreas Paepcke, Joseph M. Hellerstein, and Jeffrey Heer. 2012. Enterprise Data Analysis and Visualization: An Interview Study. In *IEEE Transactions on Visualization and Computer Graphics*.

Mary Beth Kery, Marissa Radensky, Mahima Arya, Bonnie E. John, and Brad A. Myers. 2018. The Story in the Notebook: Exploratory Data Science using a Literate Programming Tool. CHI 2018.

Adam Rule, Aurélien Tabard, and James D. Hollan. 2018. Exploration and Explanation in Computational Notebooks. CHI 2018.