Pangeo as a Platform for Workshops

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Pangeo Use Case

UNM Research Data Services program **Coffee & Code** workshop series

- Focus on:
  - Programming concepts in python
  - Version control in Git/Github/GitLab
  - Database basics and advanced topics
  - Command line
  - Containerization
  - Data APIs in python
  - Jupyter notebooks
  - Document production using Pandoc
  - Project management with TaskJuggler
  - Reproducibility & communication in notebooks (Jupyter and R)
  - … and others

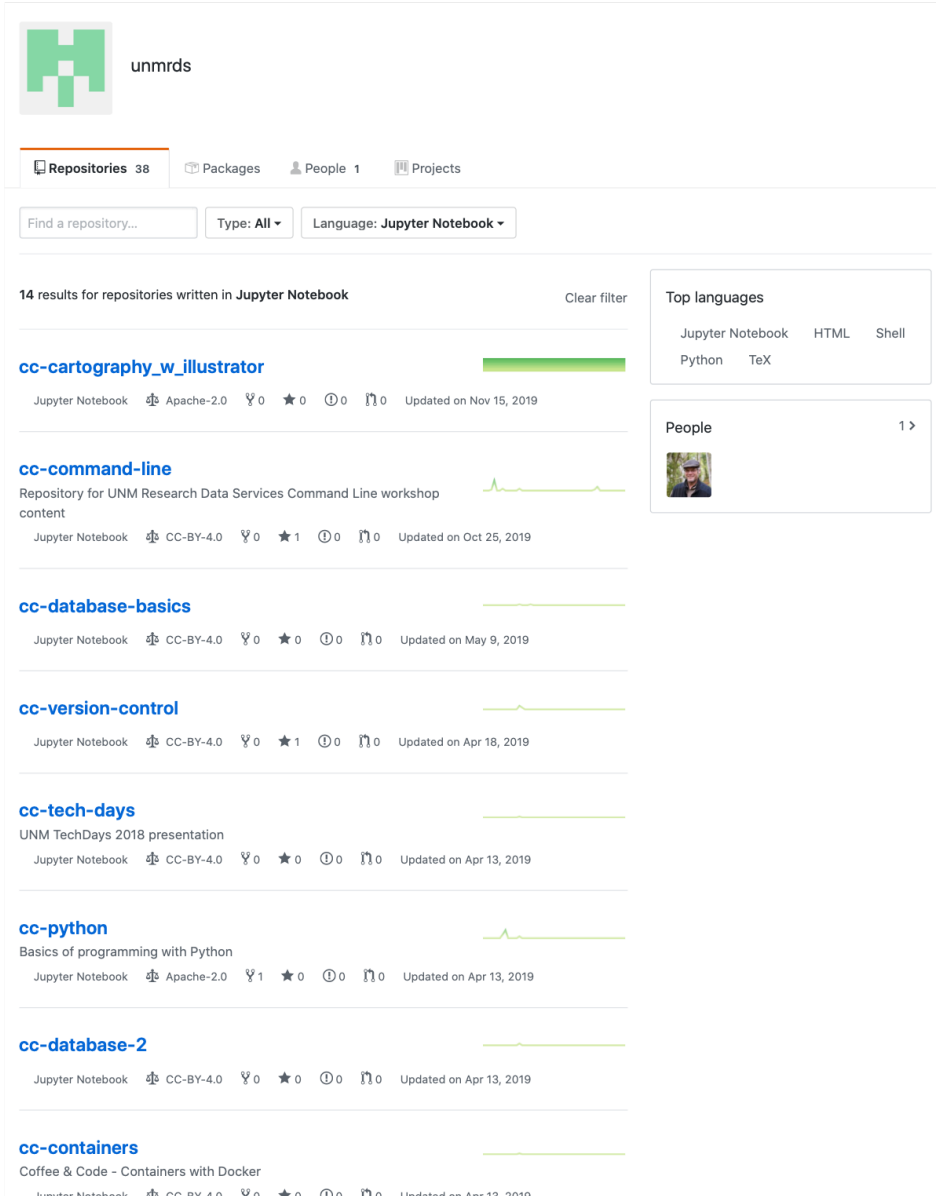**Target audience**: novice users, introductory lessons

Development Workflow

- Instruction materials developed in
  - Jupyter Notebooks
  - Rstudio/R Projects
- Maintained in Github

Github.com/unmrds
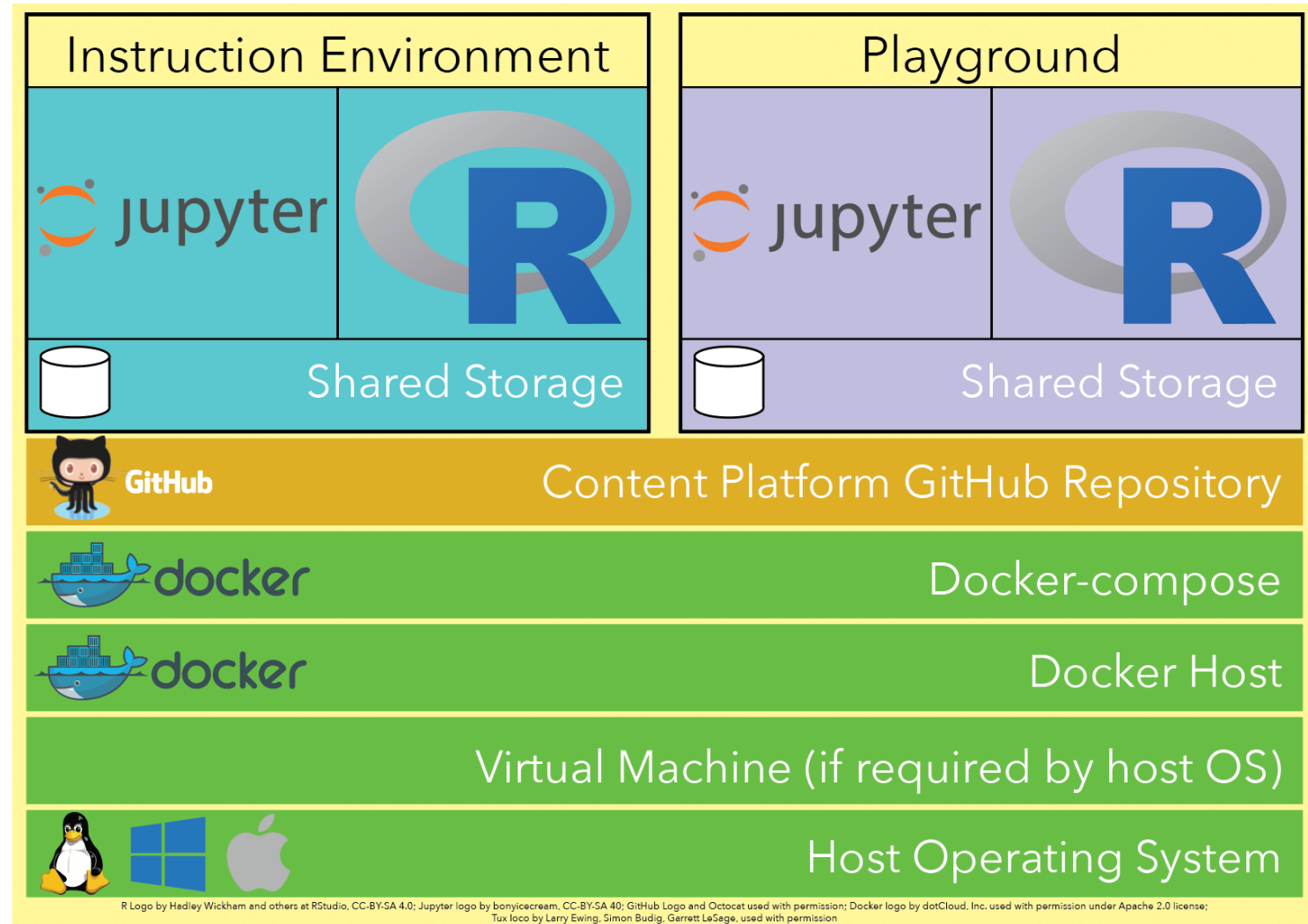
Teaching & Learning Platform

- Portability
- Rapid deployment of updated training content (scripted pull into platform)
- Streamlined spin-up of customized toolkits
- Independence of content and delivery platform

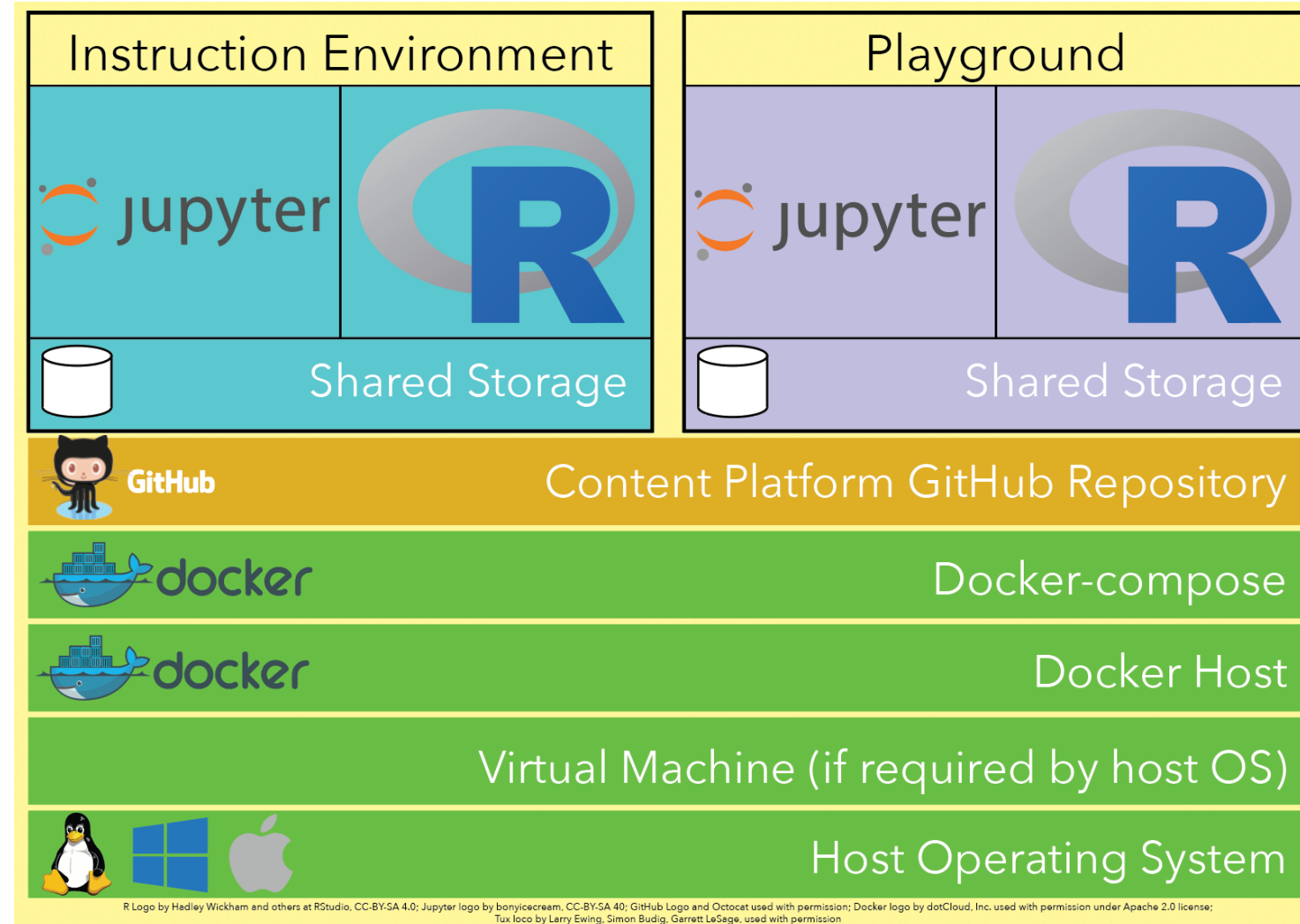https://github.com/unmrds/cc-content-platform

Teaching & Learning Platform – lessons learned

- Powerful and flexible teaching development and teaching environment
- Learners are not interested in adopting additional technology (docker) beyond workshop topic
- Web-based backup platform useful for learners

Instruction Environment — Jupyter — R — Shared Storage

Playground — Jupyter — R — Shared Storage

GitHub — Content Platform GitHub Repository

docker — Docker-compose

docker — Docker Host

Virtual Machine (if required by host OS)

Host Operating System

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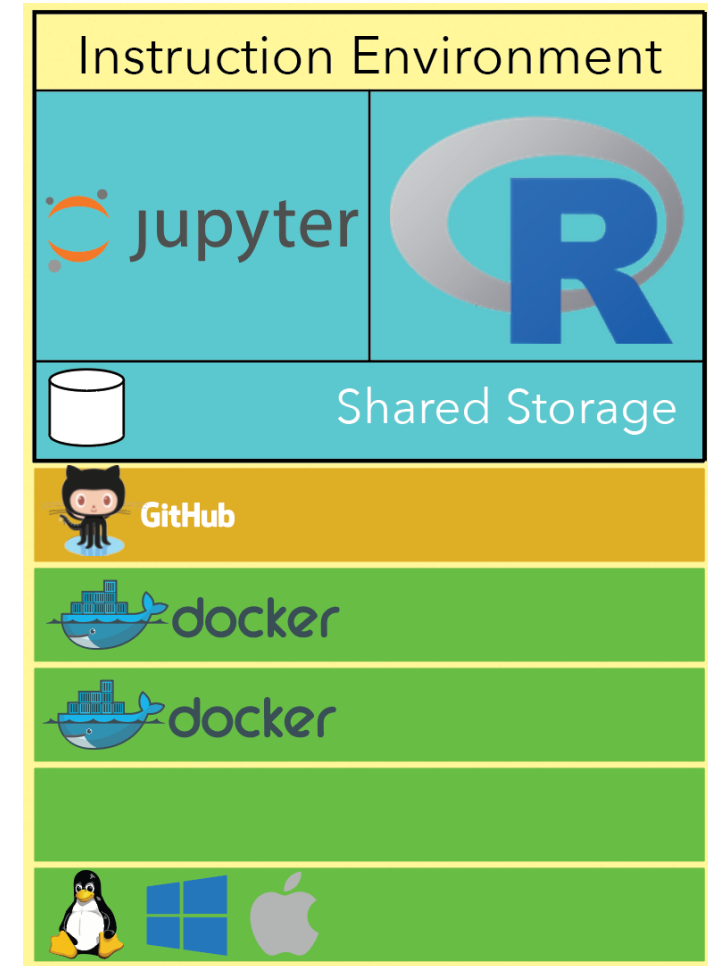
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(unplanned) Plan B

- Continue development and sharing of content through Github

- Deploy into diverse instruction and learning environments

Demo

- Teaching and Learning Platform: https://github.com/unmrds/cc-content-platform

- Programming concepts with python repository https://github.com/unmrds/cc-python

- Pangeo demonstration: https://binder.pangeo.io/v2/gh/unmrds/cc-python.git/master

Next Steps

- Experiment with package configuration scripts for command-line tools

- Develop hosted Rstudio option/workflow

- Coordinate with UNM CARC for locally hosted Pangeo-Binder platform