Open Source Education: From Philosophy to Reality

Leverage modern open source technologies to create an open Environment and Platform in which:
1. Educators can create, publish and operationalize high quality open source materials.
2. Students require no more than access to a web browser to make use of the materials.

- Put Education on a path to Open Source
- Put the power to build, publish, and collaboratively develop such content in the hands of the educators who create it
- Provide tooling that makes the use of this power a manageable endeavor
- Enable community contribution, review and verification
- First class support for collaboration, replication, and continual improvement of open source educational content

OPE Template
- Several independent core branches
- Base container provides interface for specializations
- Tooling offers support for building course content skeleton, building book, lecture, and lab content, publishing content, building container for authoring, customizing container, publishing container to a repository

The open ownership model starts with high-performance, open data centers providing the hardware resources. We exploit Linux to enable the use of cloud platforms on top of this hardware. Linux serves as the foundation, allowing us to build a rich environment of tools and services to support a novel approach to educational material.

Lincoln Algebra, Geometry, and Computation

Dr. Crovella’s Book was our inspiration

The Environment: Communities collaborating in the transparent authoring, editing and use of Course Materials: Textbooks, Lectures, Lab Manuals

Fledging Community of OPE Pioneers
RedHatters, Professors, Graduate Students, Interns and Coops

Heidi Dempsey
Larry Woodman
Jonathan Appavoo
Orran Krieger
Abduln Dhiyana, University of Texas at Dallas
Xinyi Wu, Northeastern University
Yiqin Zhang

A Community of OS experts collaborating to tell the story of how OS's work

The First Tries

Under The Covers

Container

- Course Content
- Images

Repositories

lab manual
lectures
textbook

OS Textbook
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What We’ve Done:
- Arlo Albelli Graduate Student leading summer OPE effort, author and editor of Under The Covers book and course instructor.
- Yiqin worked to make the RISE Jupyter notebook extension and slide authoring.
- Abirami worked on the development of the base ope container images with all of the necessary software and packages installed to support the Jupyter environment and authoring tools required. In addition to the ope version of the Jupyter stacks Ubuntu image, built a fedora based image for deploying on ope.
- Xinyi is working on a testing book to incorporate into the ope template repository that will test various to ensure compatibility is preserved across updates.
- Danni is mentoring Yiqin to help her with RISE features development and debugging. Working on OPE RHODS environment test automation.

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The Platform
- Global Bazaar of Learners and Educators
- Open Educational Resources
- An Open Platform for Open Educational Resources
- Open File Formats
- Open Tools
- Open Cloud Infrastructure
- Open Data Centers

The Environment
- Communities collaborating in the transparent authoring, editing and use of Course Materials:
  - Textbooks, Lectures, Lab Manuals

Under The Covers
- Linear Algebra, Geometry, and Computation
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- OPE Template
  - Several independent core branches
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The Inspiration
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OPENOS
- Textbook
- LectureNotes
- LabManual