Hello Quarto: Rstudio Keynote Speech

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Quarto

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see https://quarto.org.

What is Quarto? In this talk, in four acts, we will discuss how Quarto unifies and extends the R Markdown ecosystem. Through our work with NASA Openscapes, Duke University, and RStudio, we will share our experiences sharing, teaching, collaborating, and reimagining with Quarto. Full of demos with Quarto in RStudio and Jupyter and weaving together narrative and code, this talk will help you get the most out of Quarto regardless of your background with R Markdown, the computing language(s) you may use, and your tool of choice for authoring.

Mine Çetinkaya-Rundel is Professor of the Practice at Duke University and Developer Educator at RStudio. Mine's work focuses on innovation in statistics and data science pedagogy, with an emphasis on computing, reproducible research, student-centered learning, and open-source education.

Julia Stewart Lowndes, PhD is founding director of Openscapes. She is a marine ecologist and champion for making science more open, efficient, inclusive, and kind. Working at the intersection of actionable environmental science, data science, and open science.

Talk Notes

- Unifies and extends Rmarkdown.
- Accomodates multiple languages and formats

https://mine.quarto.pub/hello-quarto/#/hello-quarto-title Guardrails, YAML completion, python, julia

quarto can render rmarkdown

use format: in yaml instead of output: format: pdf - appears in viewer not pop up use #| (hash pipe) in the chunk for chunk options

set global chunks in yaml like this:

```
execute:    echo: false
```

can just change to `format: revealjs` to create a presentation. section headers become new slides.

Making a website

change to index.qmd create a yaml file in rstudio

_quarto.yml

website: title: quarto navbar: left: - index.qmd - hello.qmd - python_notebook.ipynb # to include a python notebook in a rendered qmd

execute: freeze: true #(controls computation - only run if instructed)

then publish from terminal `quarto publish`

How does it work?

formerly rmarkdown did all the work.

now quarto is a separete program. Quarto CLI orchestrates each step of the rendering.

easy to move between formats

Content is: - reprodicible - portable

just change the yaml `format: html` - `format: revealjs`

Sharing

Openscapes - mentoring research teams in open science. Shift culture with open source software and approaches.

Application - NASA migrating data platform to cloud. NASA + Openscapes. Collaboration entailed need to embrace python. 2021 cloud hackathon - transition earthdata workflows to cloud can use multople ide's to collaborate

can use #| chunk options within ipython jupyter notebooks

Can do quarto convert *.ipynb to a quarto doc - will include python code and can run in rstudio

`code-link: true` - enables hyperlinks for packages code

useful errors generated when incorrect yaml is created

`chalkboard: true` for drawing on screen `code-line-numbers: "|1-2|3"` to animate code lines on screen

use templates - enables changing styles easily for different journals

Openscapes approach guide - collaborative approach for reproducible science

Visual Editor

paste formatting persists

image paste, resize, then view source code

render on save (when light computation only)

can add citation with @ using Zotero library or / citation link to DOI