

Jupyter for Education

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Acknowledgement of Country

Hayward (in the San Francisco Bay Area)
Ancestral homeland of the Ohlone people

What is Jupyter?

What is Jupyter?

Notebook

What is Jupyter?

Notebook
Kernel

What is Jupyter?

Notebook

Kernel

Cells

What is Jupyter?

Notebook

Kernel

Cells

Markdown

What is Jupyter for?

What is Jupyter for?

Exploration

What is Jupyter for?

Exploration
Sharing

Jupyter Installation

Jupyter Installation

Local

Jupyter Installation

Local

Remote

Jupyter Installation

Local

Remote

Or...

JupyterLite

In the browser...

JupyterLite

In the browser...
Some limitations

Teaching

Teaching

A new world...

Hybrid world

Hybrid world

In-person

Hybrid world

In-person

Remotely

Hybrid world

In-person
Remotely
Self-paced

Share text

Share text

Contents

Share text

Contents
Formatting

Visuals

Visuals

A thousand words...

image

Worth a...

Interactivity...

Interactivity...

Change the inputs...

Interactivity...

Change the inputs...

slider_img



Figure: png

`draw_sample(slider.value)`

Sample

Figure: png

Interactivity...

Interactivity...

...see the new outputs

Interactivity...

...see the new outputs

`slider_img`



Figure: png

`draw_sample(slider.value)`

Sample

Figure: png

Convert for presentations

Convert for presentations

HTML

Convert for presentations

HTML

PDF

Convert for presentations

HTML

PDF

Slides

nbconvert

nbconvert

Hide cells

nbconvert

Hide cells

Hide cell output

nbconvert

Hide cells

Hide cell output

Hide cell input

Conversion pipeline

Conversion pipeline

To Markdown...

Conversion pipeline

To Markdown...
...then pandoc

Source-control friendly

Source-control friendly

JSON

Source-control friendly

JSON

Merges can be unpleasant

Sharing

Sharing

Supported in Source Collaboration

Sharing

Supported in Source Collaboration
Automatically rendered

Reading

Reading

Inline cells

Reading

Inline cells

Code rendering

Reading

Inline cells

Code rendering

Widgets acknowledging

Exercise

Exercise

Cells to be filled

Exercise

Cells to be filled
Widgets

Verification

Verification

Machine-checkable

Verification

Machine-checkable
Multiple choice

Teacher feedback

Teacher feedback

Submit notebook

Teacher feedback

Submit notebook

Inline submission through API

Limitations

Limitations

Server set-up non-trivial

Limitations

Server set-up non-trivial
JupyterLite still limited

Advantages

Advantages

Powerful tooling

Advantages

Powerful tooling
Evolving ecosystem

Early days

Early days

Make mistakes

Early days

Make mistakes
Learn

Early days

Make mistakes

Learn

Share

Early days

Make mistakes

Learn

Share

Do better

Jupyter: Teaching for 2020s

Jupyter: Teaching for 2020s

More visual

Jupyter: Teaching for 2020s

More visual

More interactive

Jupyter: Teaching for 2020s

More visual

More interactive

Powerful flows