hubzero

# Hubzero's 3 Hour Tutorial

# Welcome and Introduction to the Hubzero Platform

Run Applications! Collaborate! Publish! Visit hubzero.org for more information.

# Today's Goals and Activities

Live version of this presentation is located at "https://spark.adobe.com/page/d5o6kXA5Y9upi/"

**Today's Goal is to demonstrate how code can be easily deployed and published in the Hubzero platform.**

- How to modifying and publish a Jupyter Notebook tool

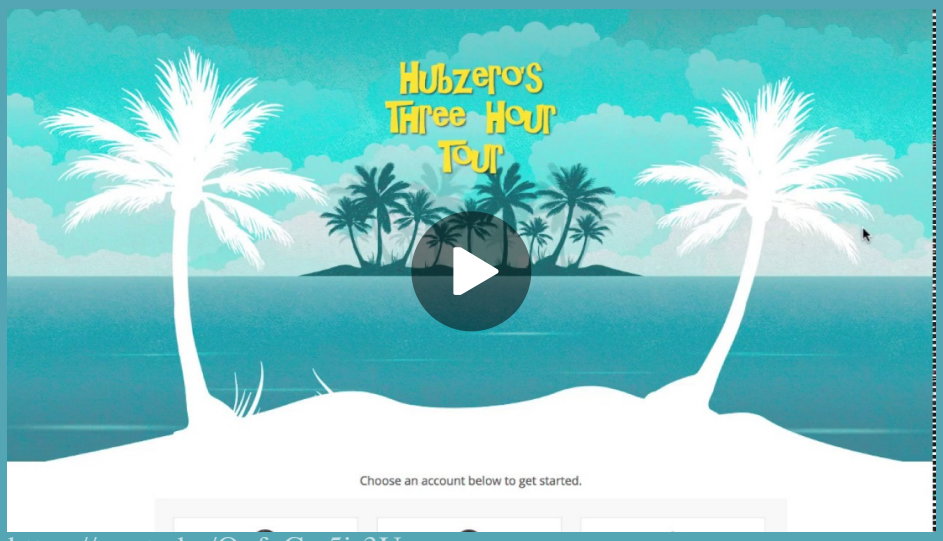
- Step-by-step process of creating and publishing a Jupyter Notebook Tool
- Demonstrations of Linux tools, Notebook Tools, R Shiny Tools, and Web Tools

Why are we here? For a 3-hour tour about Hubzero tools!

Let's start off from one of the beautiful islands of Hawaii. Well..we can image we are, right?

About the ducks...

# Create accounts on provided Hubzero instance




https://youtu.be/Qpf_Cw5i-3U

Choose your favorite character!

https://demo.aws.hubzero.org/ The password for each account is “gateways2018"

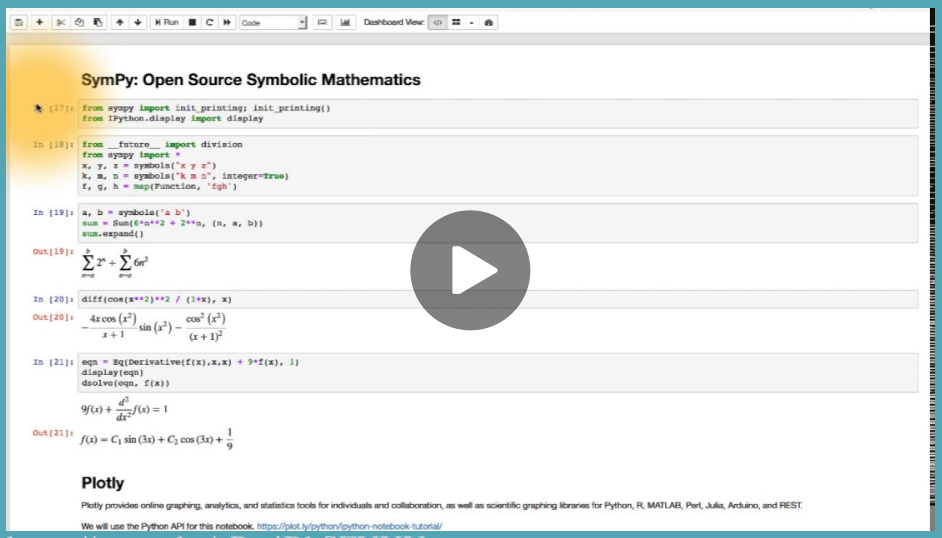
# Demonstration: Linux tool

https://youtu.be/ne8YqRBkA1U

**Now that you've seen what a tool is. Let's get started.**

# Modifying and publishing a Jupyter Notebook tool

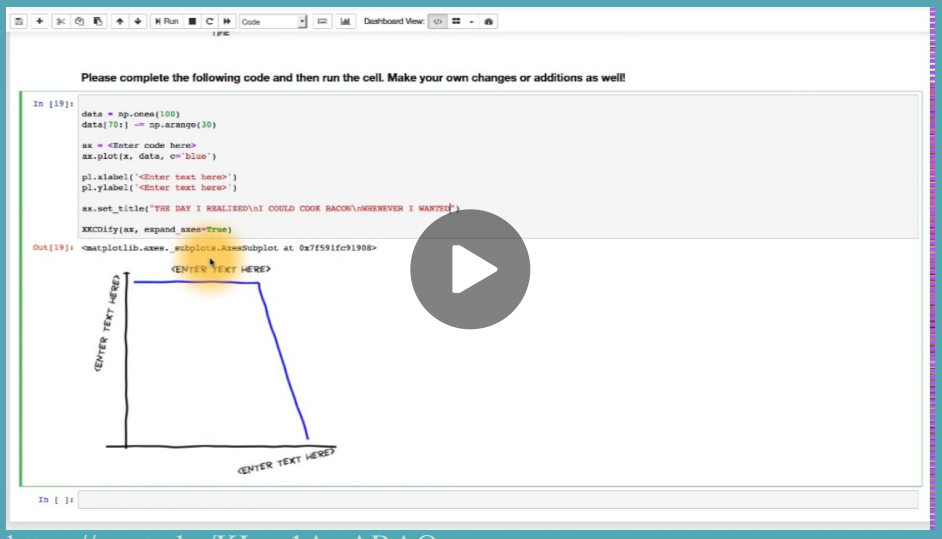
**Test the Installed tool**




https://youtu.be/zRo4BbSFYYY

You should be logged into your account and be on your member dashboard. Find the "My Drafts" Section and click on your character's tool.

## Modify the code




https://youtu.be/KLev1AwARAQ

https://gitlab.hubzero.org/demo/<characterstool>

Login is same as hub login. Ex. u: superman p: gateways2018

ax = pl.axes()

ax.plot(x, data, c='blue')

jupyter_tool.py -at gateways18demo.ipynb

jupyter trust gateways18demo.ipynb

## Resource Page creation

https://youtu.be/vNUwyuzOMhw

Abstract, Authors, Support Documents, Screeenshots, Tags

# Approval Process

https://youtu.be/H3Ct4Sw4X_E

Version, License

# Publishing the Tool

https://youtu.be/fU08mdadlBk

For Tool administrators

## Review of Tool Resource Page

https://youtu.be/_0t4esF4N8Q

# Break (3:00pm – 3:30pm)

# Step-by-Step:Creating and Publishing a Jupyter Notebook Tool

# Discussion: What resources do you Need?


What coding language, GUI is required, how will I build that?, Name of tool, Tool abstract, Tool authors,

Special Software, Database, Storage requirements, etc.

# Choose an Jupyter Notebook or use your own!

Choose from the following examples: Programming and Computer Science; Statistics and Data Science; Mathematics, Physics, Chemistry, Biology; Scientific Computing; Social Data; Psychology and Neuroscience; Physics, Chemistry and Biology; Earth science and geo-spatial data; Data visualization and plotting; Reproducible academic publications.

A list of Example Notebooks - https://demo.aws.hubzero.org/examplenotebooks

# Activity: Tool Registration

https://youtu.be/R2qxY-Cznw0

https://demo.aws.hubzero.org/resources/new

# Activity: Repository Creation and Check-out

https://youtu.be/nbzw6K8eO9E

# Building the User Application Interface

https://youtu.be/kOTJGvzJSi0

# Check-in code to Repository

https://youtu.be/PHUvSYWPCnA

nano middleware/invoke

/usr/bin/invoke_app "$@" -C "start_jupyter -t -T @tool gateways18demo.ipynb" -u anaconda3-5.1

jupyter_tool.py -at gateways18demo.ipynb

jupyter trust gateways18demo.ipynb

git status

git commit -m "initial commit"

git push

# Demonstration: Web tool


https://youtu.be/ySb-8TwJ0Ds

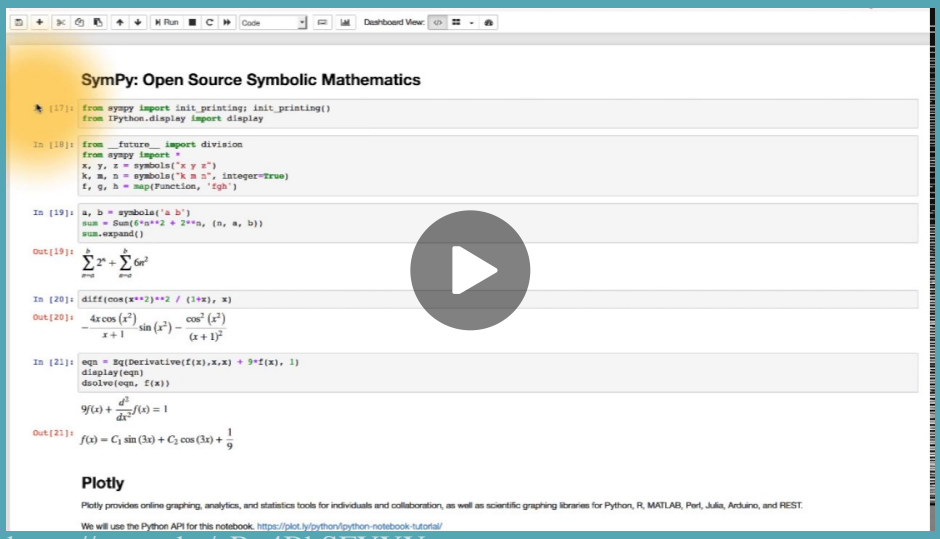
# Who are tool administrators and tool developers What are their responsibilities?

Library installs, Support for Tool devs, etc.

## Installing the tool

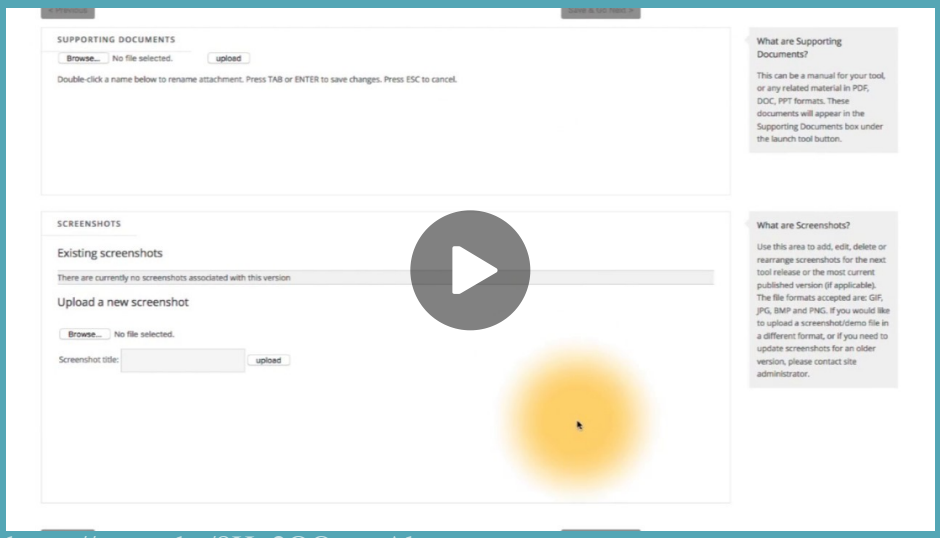
https://youtu.be/IHehNClQC4Y

# Testing the Installed tool




https://youtu.be/zRo4BbSFYYY

# Resource Page creation




https://youtu.be/8Hy2OQy-wAk

# Approval Process

https://youtu.be/H3Ct4Sw4X_E

# Publishing the Tool

https://youtu.be/fU08mdadlBk

# Wrap-up

Demonstrations of your newly published tools

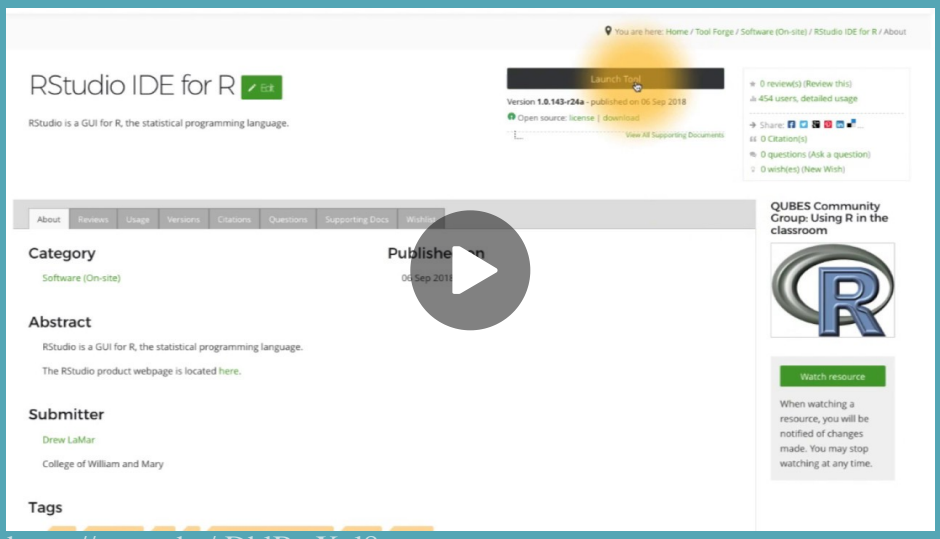
What did you learn? Were you able to publish a Jupyter Notebook tool on your own?

Questions?

Feel free to contact me or any of the Hubzero team

ehuebner@purdue.edu

# Demonstration: Web Rstudio and R Shiny




https://youtu.be/tDhlB-rX_18

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CREATED BY
Erich Huebner

**Credits:**

Created with images by Andy Do - "Palms Realm"