

Introduction to Elyra

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Following

CALL FOR CODE

open source projects need you

Join the cutting-edge community building open source projects to fight back against the most pressing issues of our time. See your code deployed to help those in need.

Learn how to get started →

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Courses and Programs taught by Upkar Lidder



Introduction to Cloud Development with HTML5, CSS3, and Java...

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Course



Introduction to Containers, Kubernetes and OpenShift

IBM

Course



Developing Cloud Applications with Node.js and React

IBM

Course



Developing Cloud Native Applications

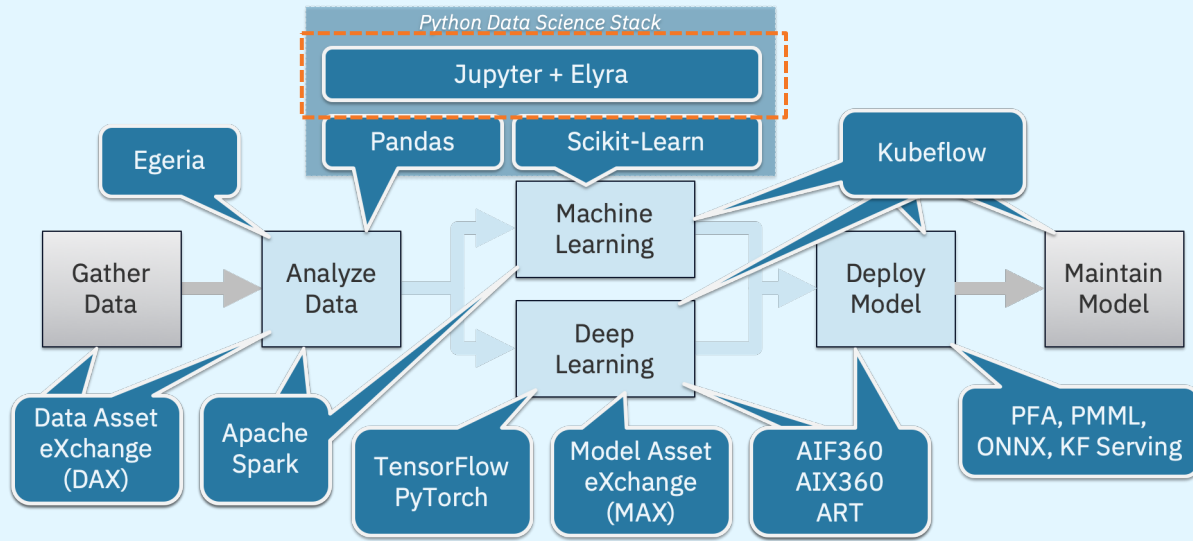
IBM

Course



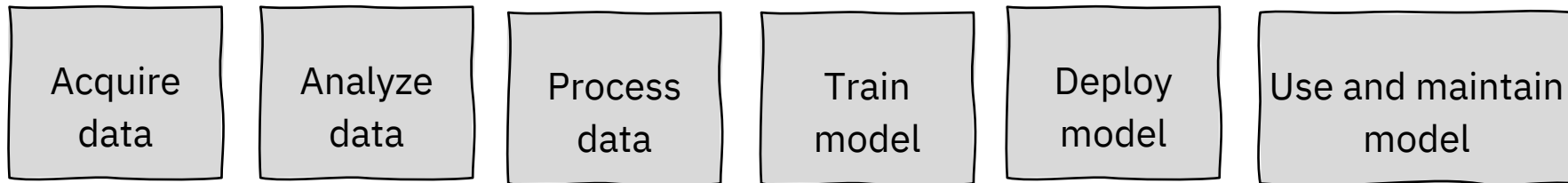
- CODAIT aims to make AI solutions dramatically easier to create, deploy, and manage in the enterprise.
- 40+ developers/data scientists
- We contribute to and advocate for the open-source technologies that are foundational to IBM's AI offerings.

Improving the Enterprise AI Lifecycle in Open Source

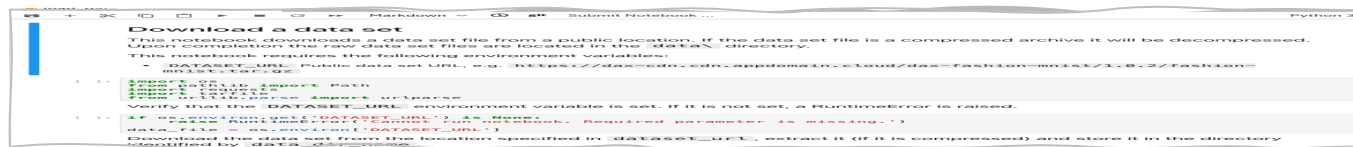


Machine Learning (ML) Workflows

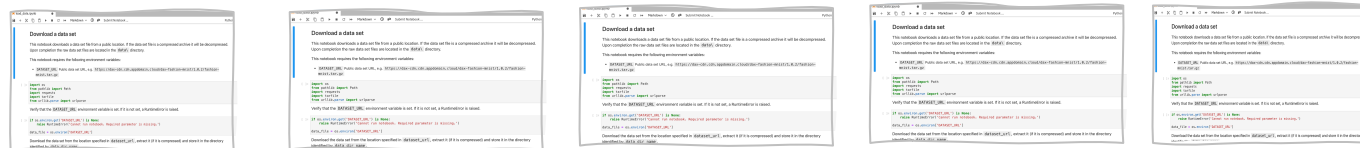
- Typical workflow tasks



- Many tasks comprise of sub-tasks and are performed iteratively
- Jupyter notebooks are frequently used



(monolithic –
does many things)



(modular)

Elyra: Set of AI-centric extensions to JupyterLab

re-use code

Code snippets

source control

Git integration

run remotely

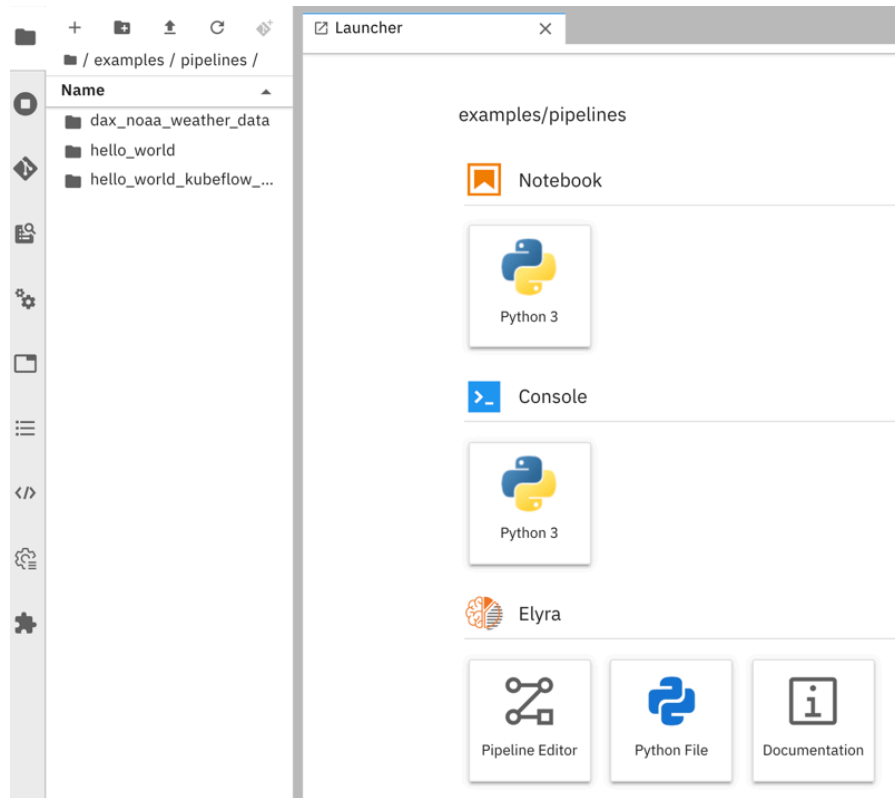
Python scripts

run batch

Notebooks

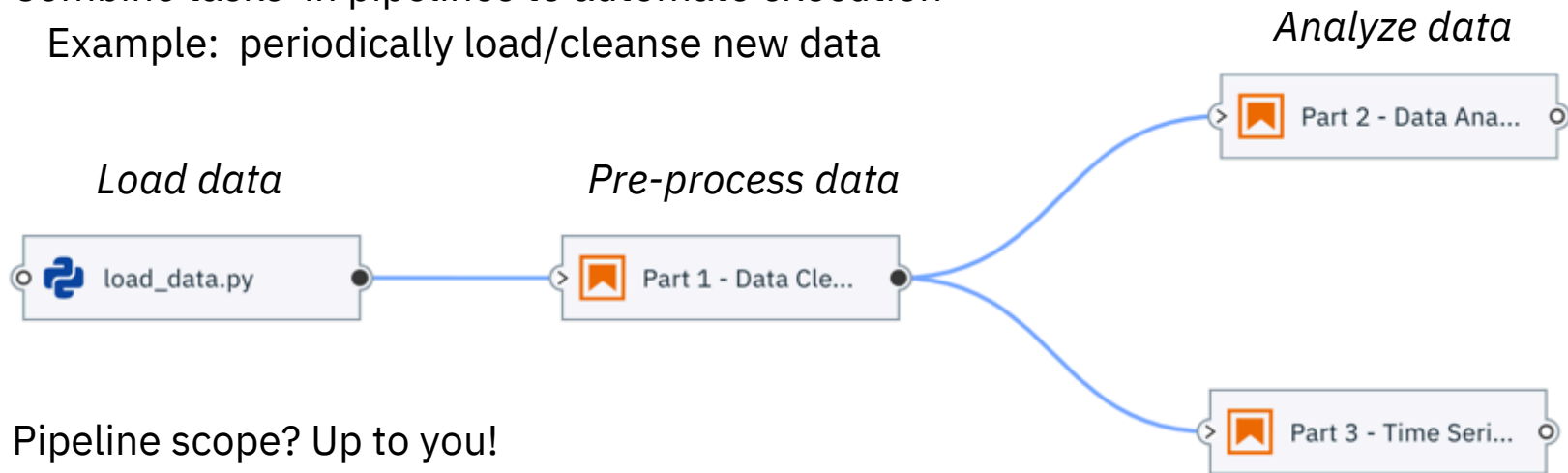
ML workflow

Pipelines



Implementing ML workflows using pipelines

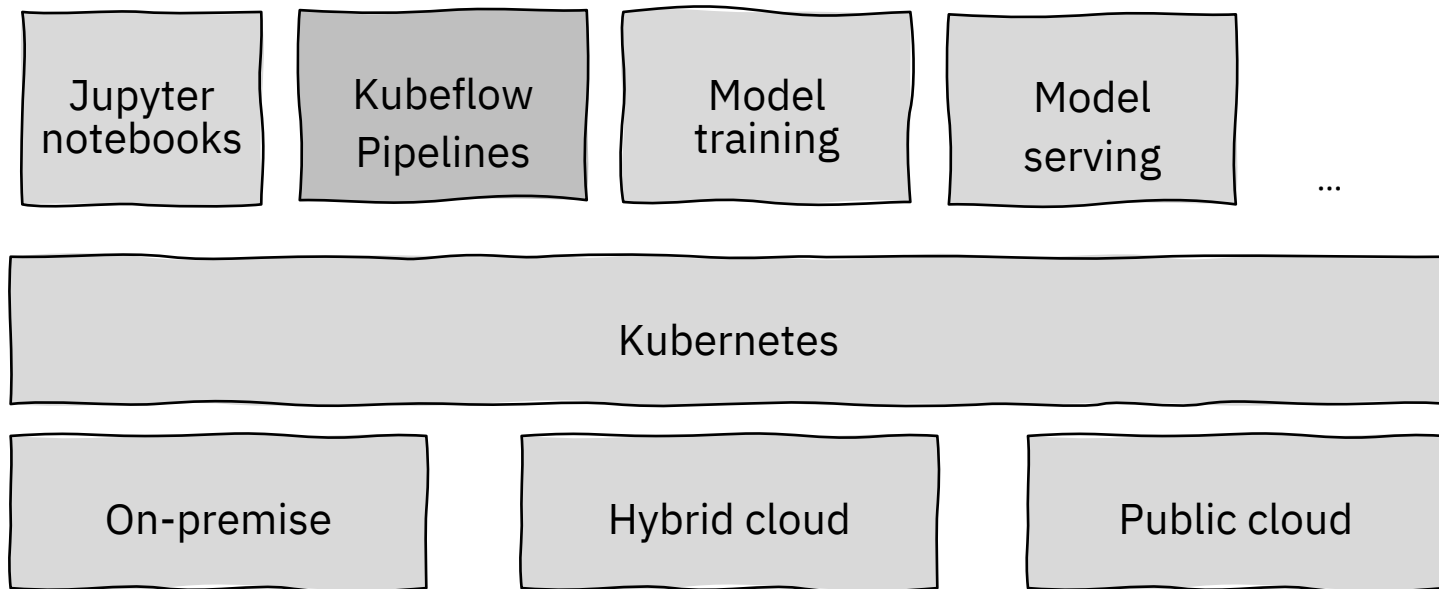
- Modular notebooks (or Python scripts) allow for re-use in other projects
 - Example: load data from data source (database, cloud storage, ...)
- Combine tasks in pipelines to automate execution
 - Example: periodically load/cleanse new data



- Pipeline scope? Up to you!

Kubeflow in a Nutshell

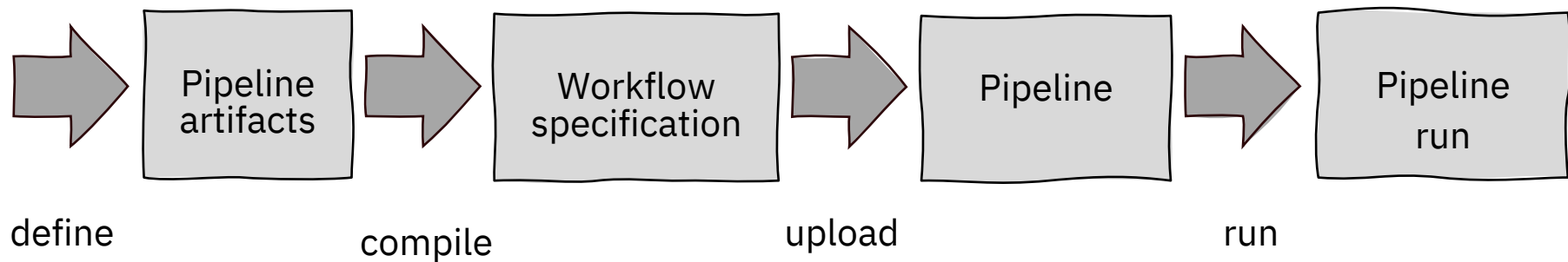
- Scalable, portable, distributed machine learning platform that runs on Kubernetes



- More info: <https://www.kubeflow.org/>

Kubeflow Pipelines in a Nutshell

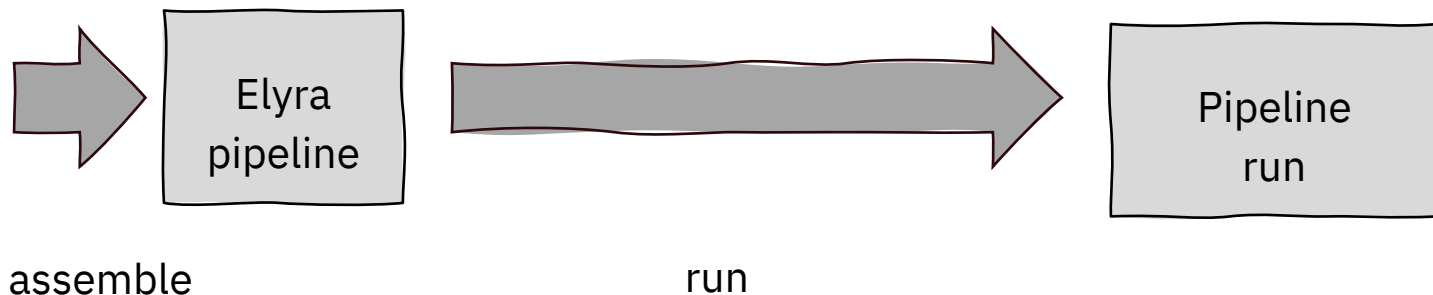
- Platform for building and deploying portable, scalable machine learning workflows
- SDK/ DSL Python is used to define pipeline artifacts



- More info: <https://www.kubeflow.org/docs/pipelines/overview/pipelines-overview/>

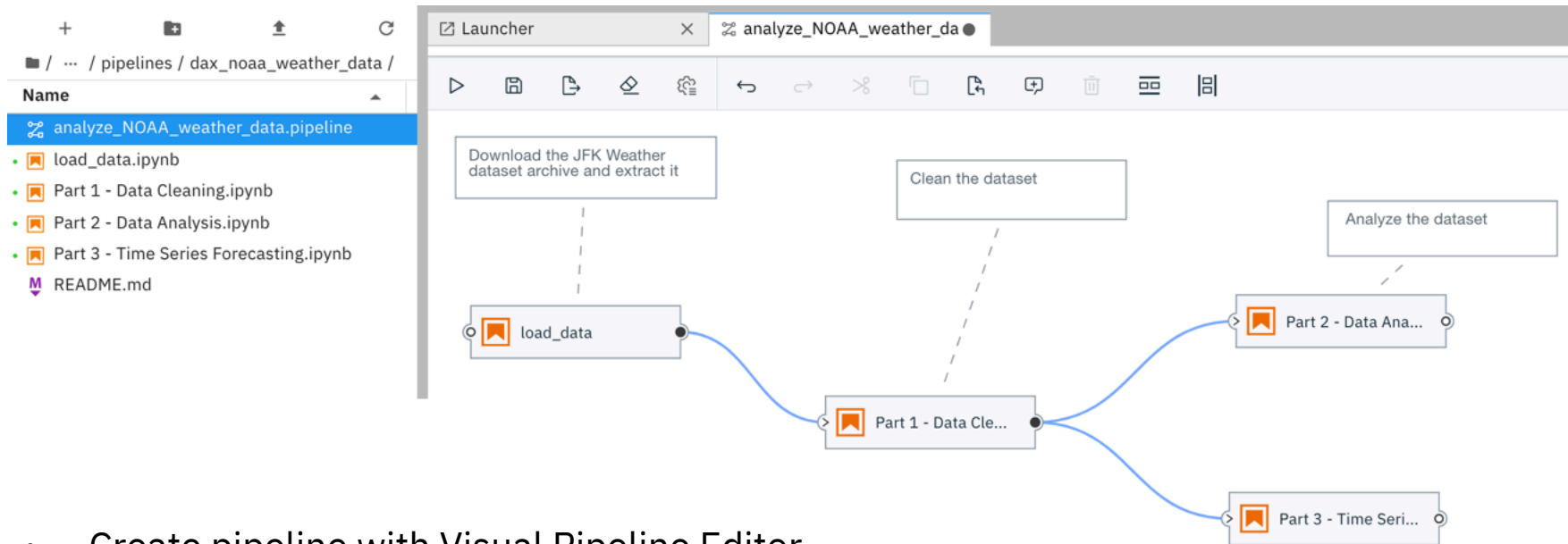
Building Pipelines with Elyra

- Use Visual Pipeline Editor to assemble pipelines from notebooks or Python scripts



- Pipelines comprise of one or more [notebook/script] nodes
- Run pipelines
 - Locally in JupyterLab
 - On Kubeflow Pipelines (Elyra generates the required pipeline artifacts, uploads them, and starts a run)

Demo: Implementing an ML workflow using Elyra



- Create pipeline with Visual Pipeline Editor
- Run pipeline locally in JupyterLab
- Run pipeline on Kubeflow Pipelines
- [Tutorials](#)

Getting Started with Elyra

[Try Elyra on Binder](#)

- No installation required - hosted on public cloud
- Nothing is persisted

[Run Elyra in a Docker container](#)

- Ready-to run images: `latest`, `x.y.z`, and `dev`

[Install Elyra](#) (requires Node.js and Python 3)

- `pip`, conda recipe, or from source code

https://elyra.readthedocs.io/en/latest/getting_started/installation.html

Elyra Community, Next Steps, and Thank You!

- Elyra community
 - <https://github.com/elyra-ai/elyra>
 - Weekly community meetings
 - Reach out on [gitter](#)
- Additional pipelines
 - COVID-19 (<https://github.com/CODAIT/covid-notebooks>)
 - Airline delay analysis (coming soon)
 - AI fairness analysis (coming soon)
- Contacts
 - <http://codait.org>, [@codait_org](#)
 - Patrick Titzler, [@ptitzler](#), ptitzler@us.ibm.com
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