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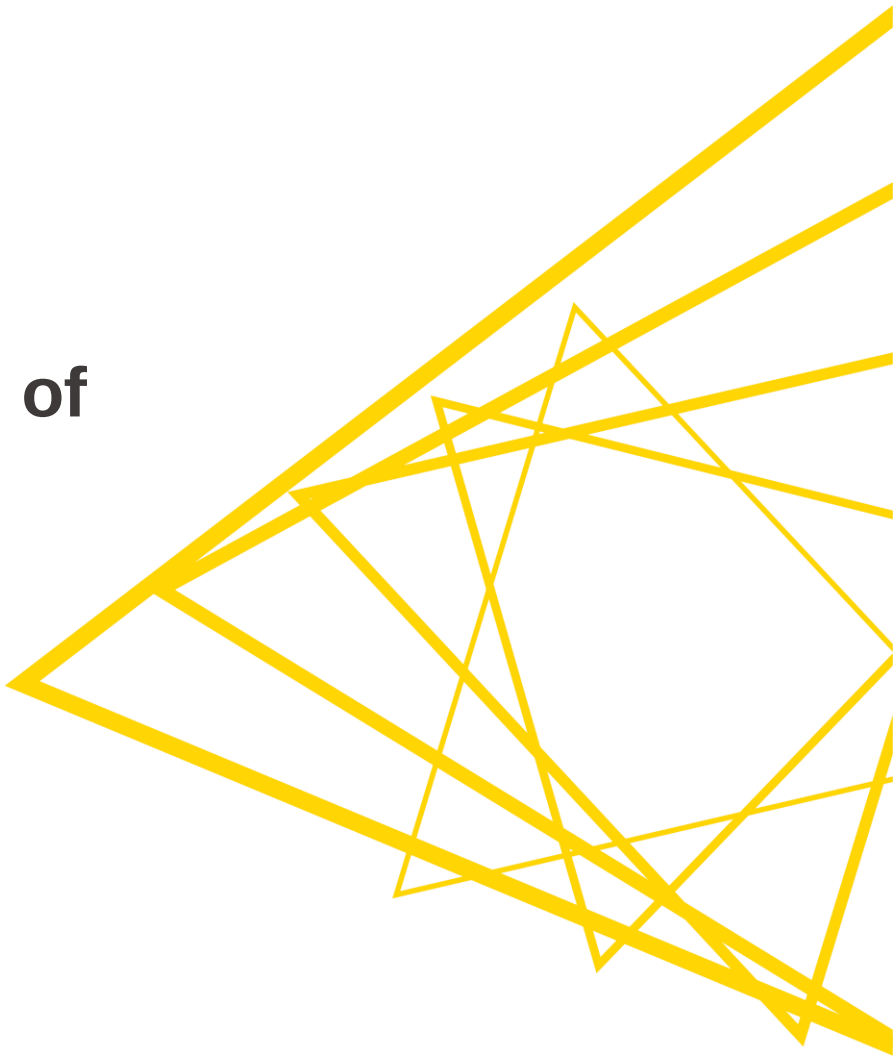
KNIME

New Features and Directions of KNIME Software

Dr. Stefan Helfrich (KNIME AG)

Spatial Data Lab Webinar
June 22, 2021



KNIME in a Nutshell

- KNIME, the Company
  - Offices in Europe and USA
  - Close ties to Universities and Research
  - Global Partners Network
  - Long-term funding
- The KNIME Community
  - +10 Years
  - +2000 active Contributors add
  - Functionality
  - Use cases and examples
  - 24/7 support
- KNIME Software
  - Used by 96% of EUROSTOXX 50 and DOW JONES Indu companies
- KNIME Analytics Platform
  - Gather, Wrangle, Model, Visualize
  - Open source and free
- KNIME Server
  - Deploy, Manage, Consume, Optimize
  - Commercial complement

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The KNIME Community (including us)

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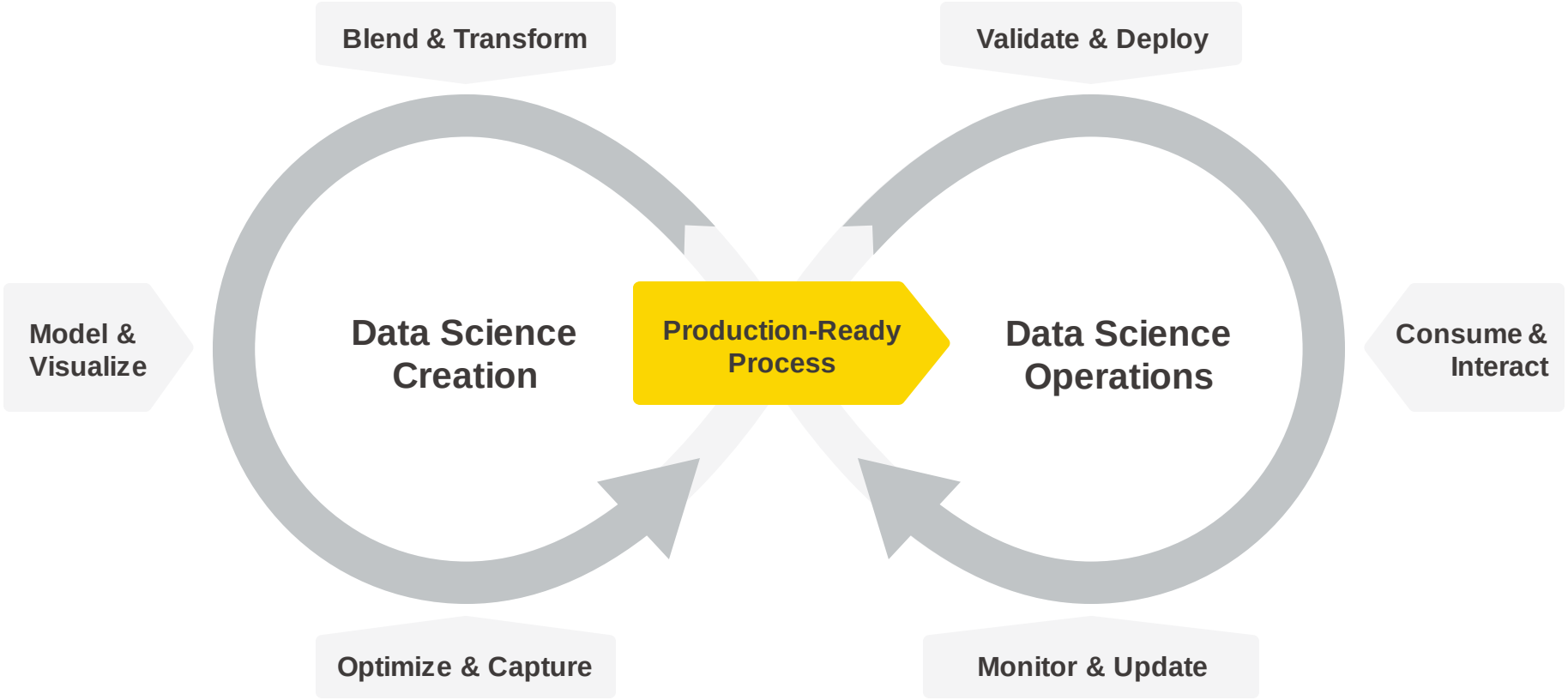
Creating and Productionizing Data Science



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KNIME Software – One Ecosystem

Create

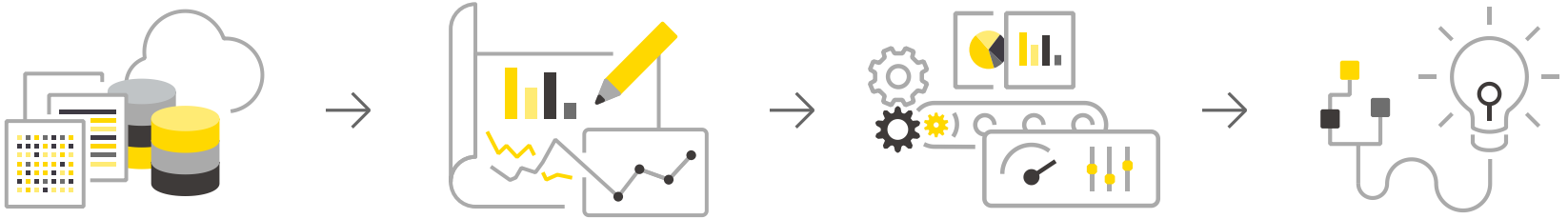
Productionize

Blend & Transform

Model & Visualize

Deploy & Manage

Consume & Interact



KNIME Analytics Platform

- KNIME Extensions
- KNIME Integrations
- Community Extensions
- Partner Extensions

KNIME Server

- Team Collaboration
- End User Applications
- API Services
- Managed Execution

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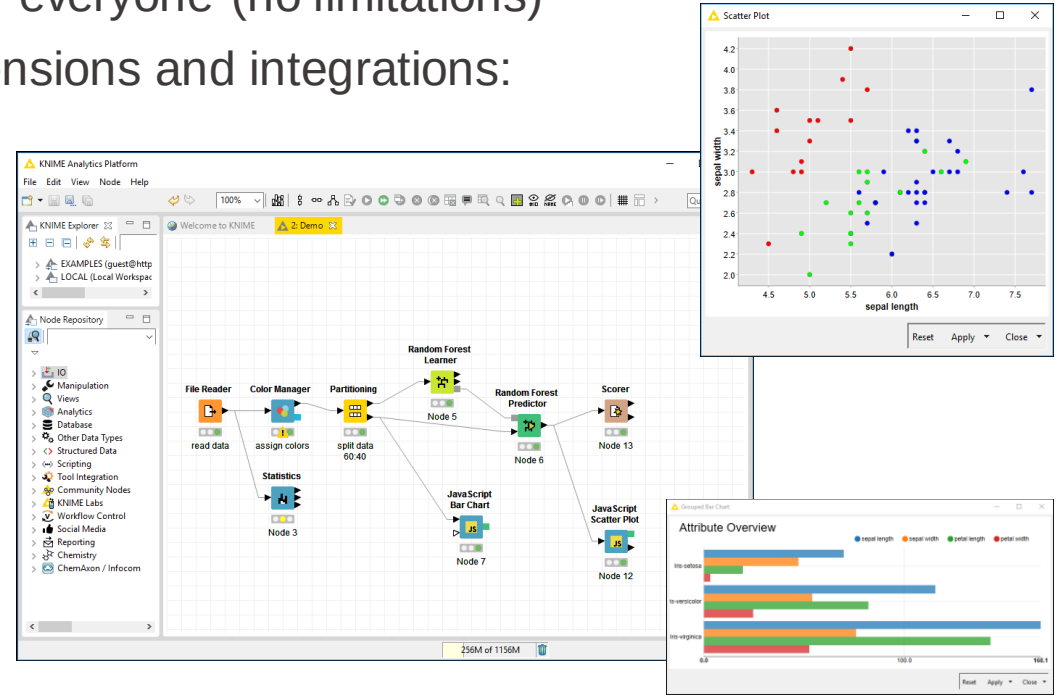
What is KNIME Analytics Platform?

- A platform for data analysis/mining, manipulation, visualization, ML and AI
- Build around **visual workflows** (what you see is what you run)
- Open source and free to use for everyone (no limitations)
- Provides a diverse array of extensions and integrations:
  - Text Mining
  - Network Mining
  - Cheminformatics
  - Image Mining
  - Other Tools: Weka, Keras, H2O, …
  - Other Languages: R, Python,



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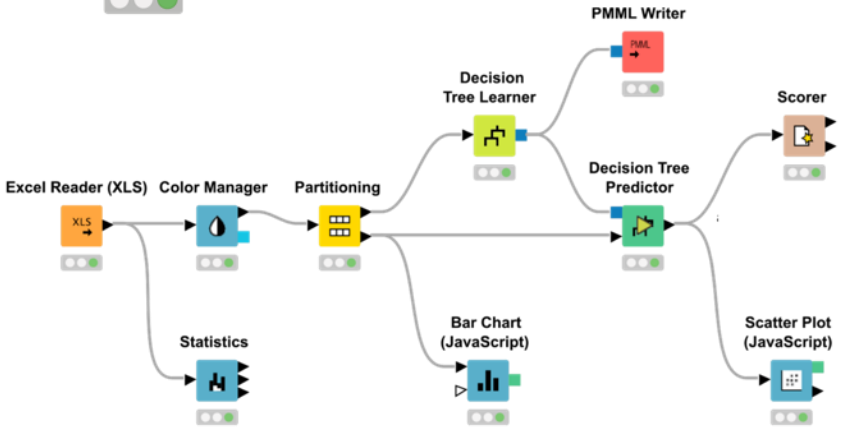
Visual KNIME Workflows

Nodes
perform tasks on data

Workflows
combine nodes to model data flow



Components
encapsulate complexity & expertise

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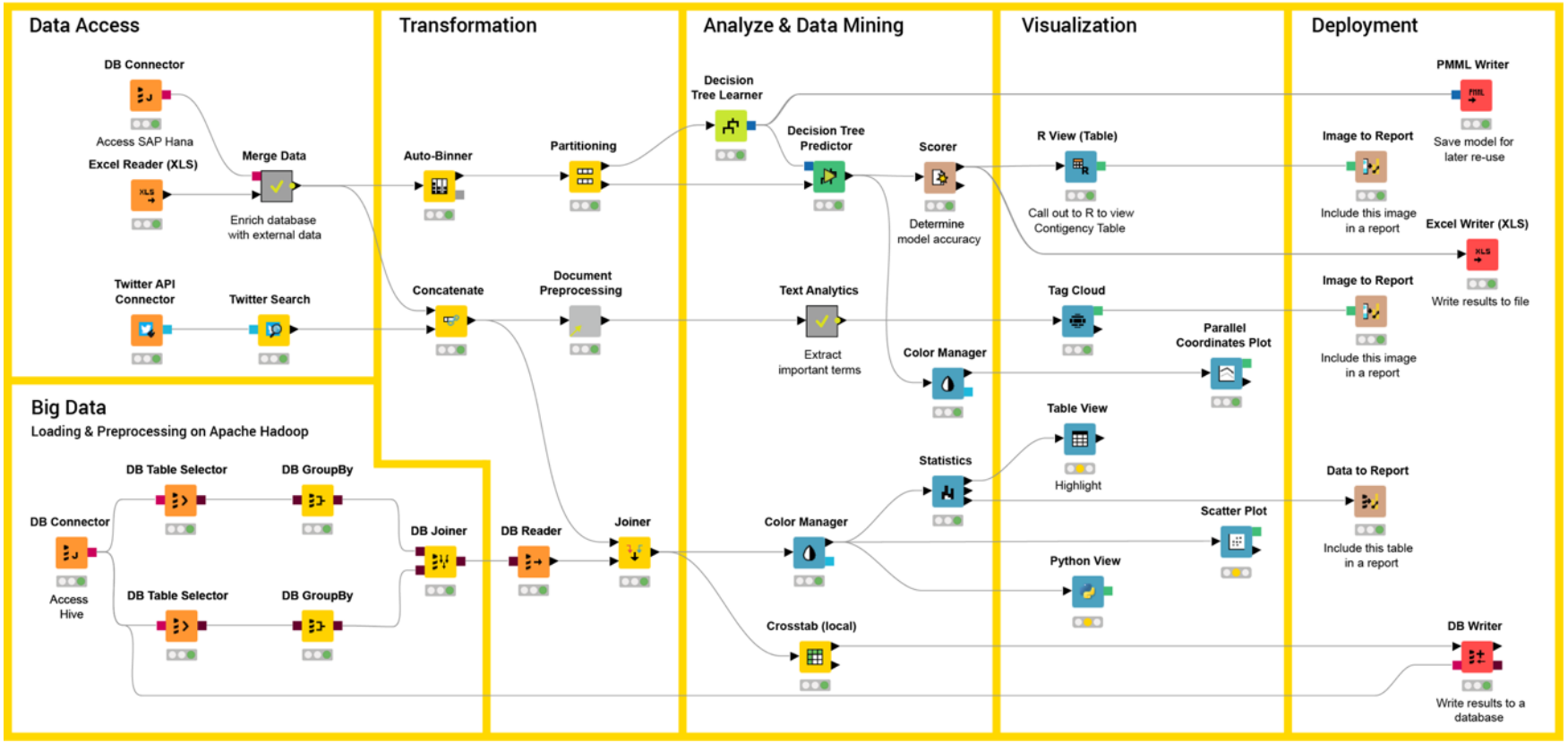
Covering all Stages of the Data Science Life Cycle



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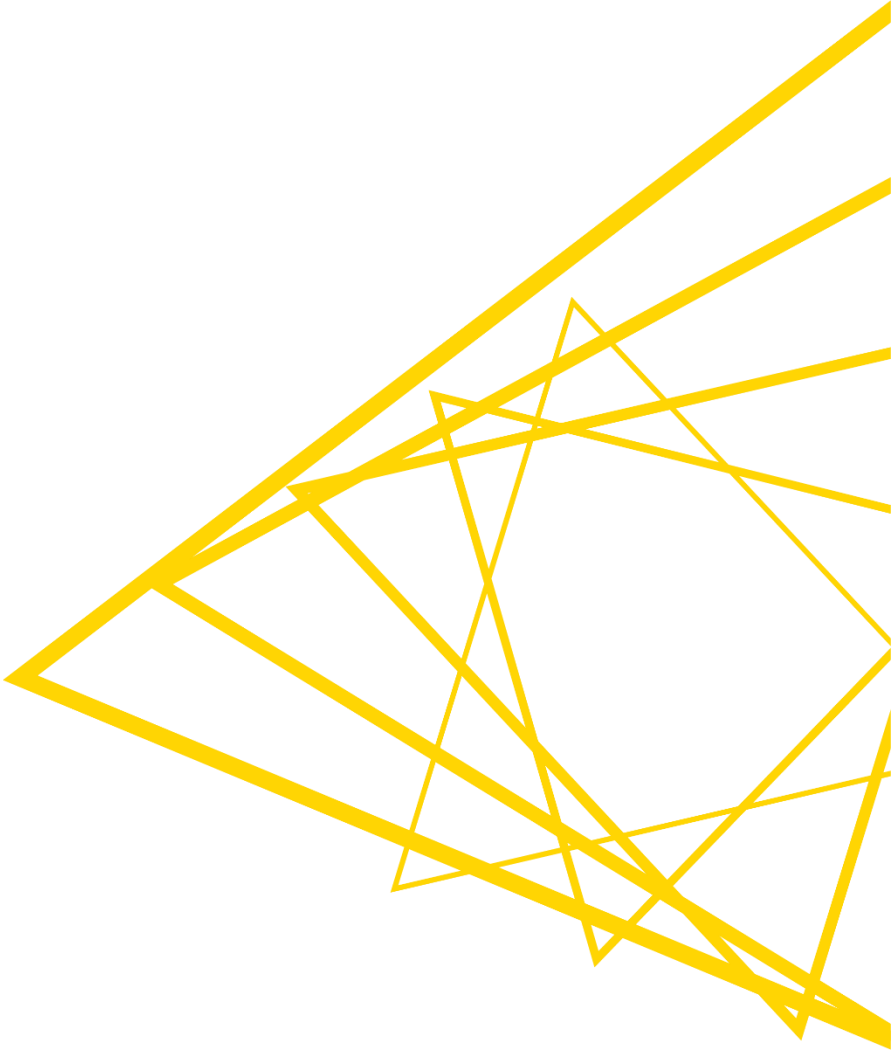
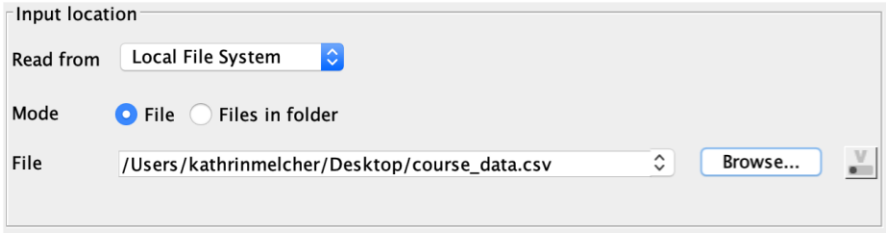
Some Feature Highlights



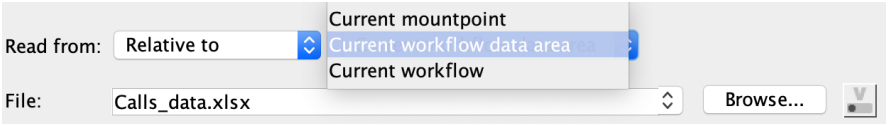
New File Handling

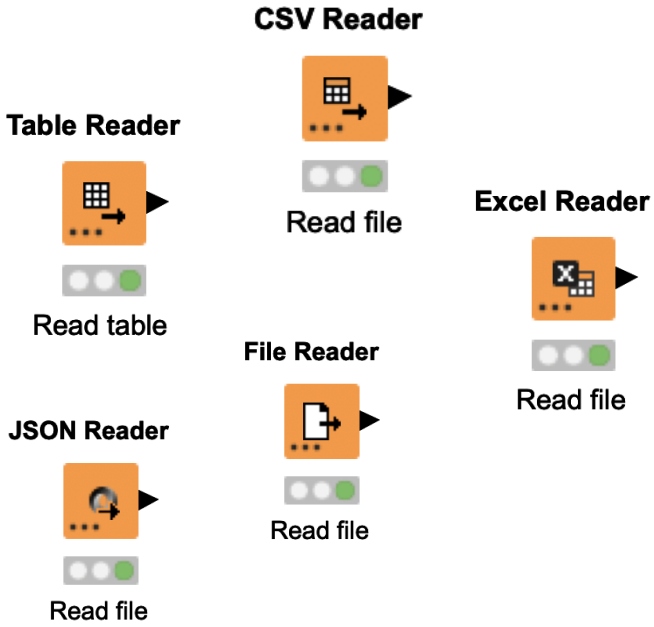
- Create consistent user experience across all I/O nodes and file systems
- Access various file systems within the same workflow
- Improve performance

Absolute paths



Relative paths





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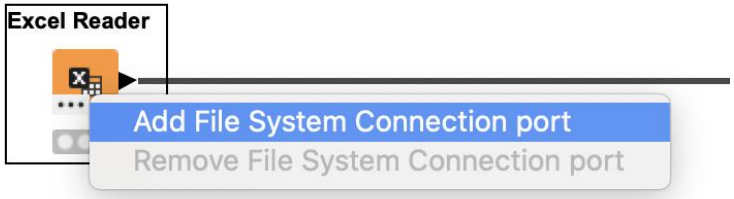
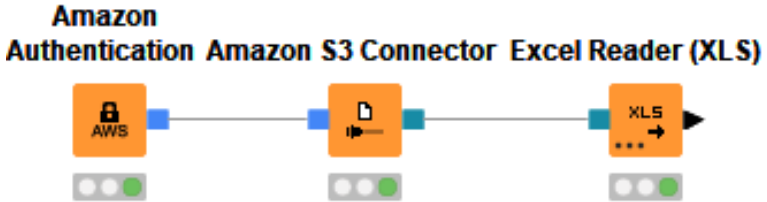
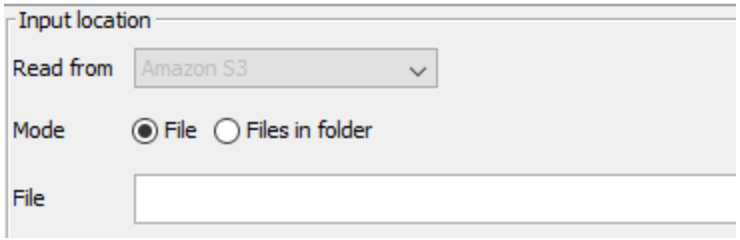
Connecting to other File Systems

- Add file system connection port to connect to another file system
  - Click on the three dots on the lower left to add or remove a dynamic port.



- Supported file systems
  - Microsoft Azure
  - Google
  - Amazon
  - Databricks
  - BigData file systems (hdfs, httpFS, …)
  - On-premise (e.g. ssh, ftp, …)





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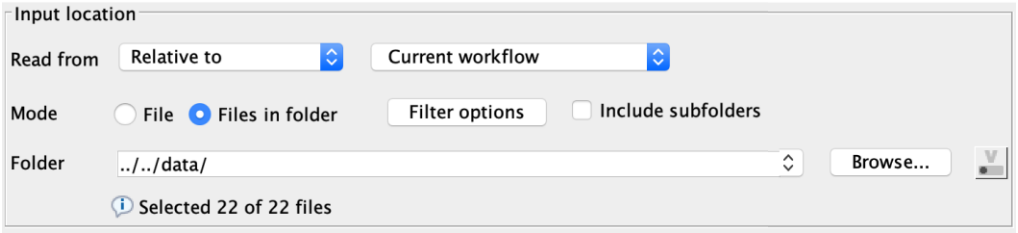
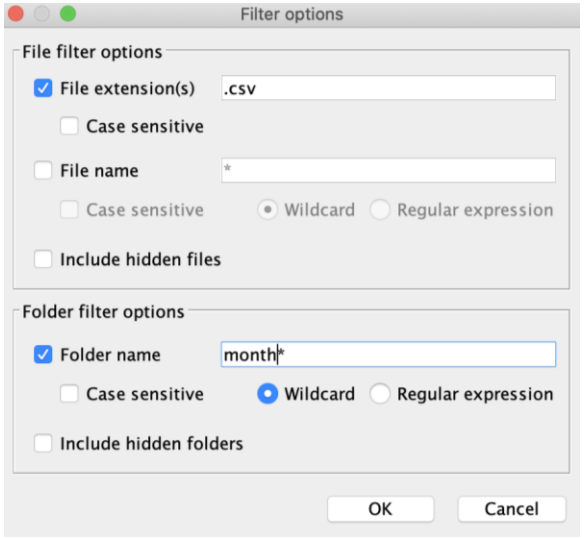
Read Single or Multiple Files

- Single file

- Files in a folder



  - Option to include subfolder
  - Option to define filter criterions



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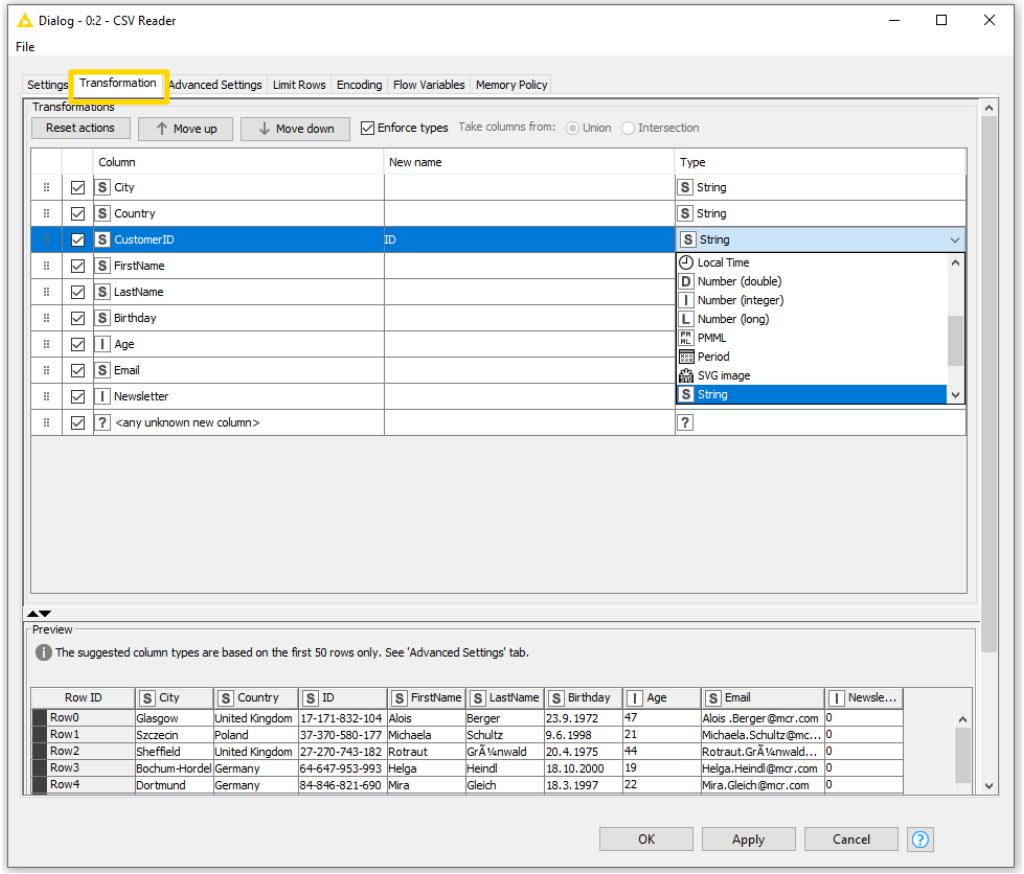
Transformation Tab

- Supported operations
  - Column filtering
  - Column sorting
  - Column renaming
  - Column type mapping
  - Select between union or intersection of columns (in case of reading many files)



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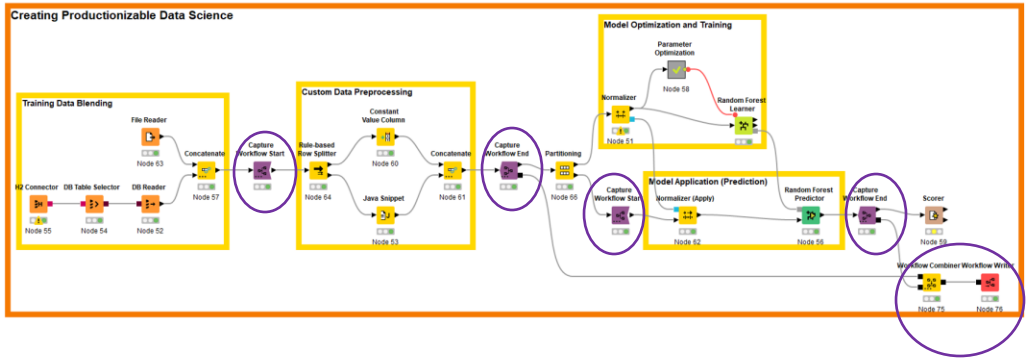
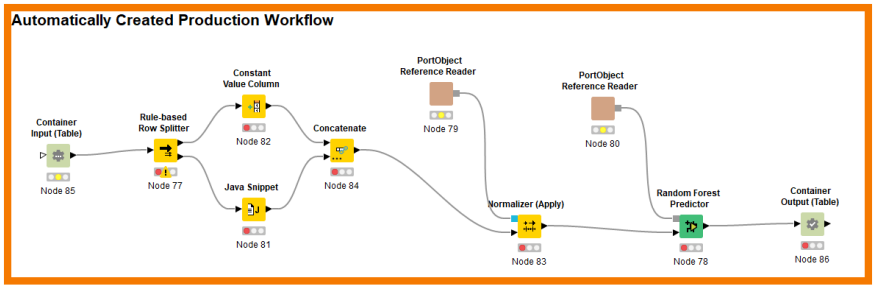
Integrated Deployment

Creation Workflow



Production Workflow



https://www.knime.com/integrated-deployment

- Eliminates the gap between Creation and Production
  - mark what's necessary for production
  - not just the model
- No manual intervention
  - No rewrite, copy paste
- Capture all nodes & settings
- Automatically created production workflow
- Always in sync

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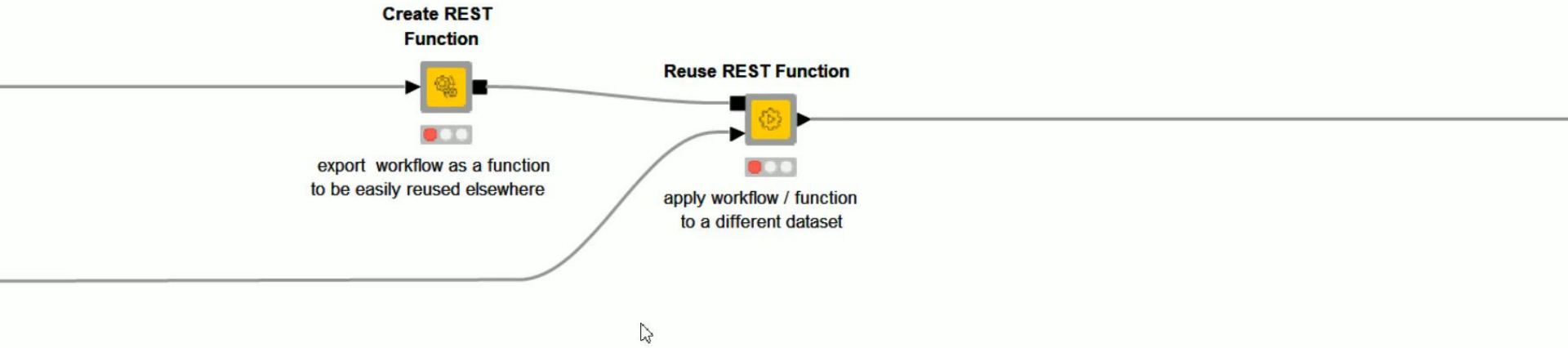
Advanced Workflow Control inside Component



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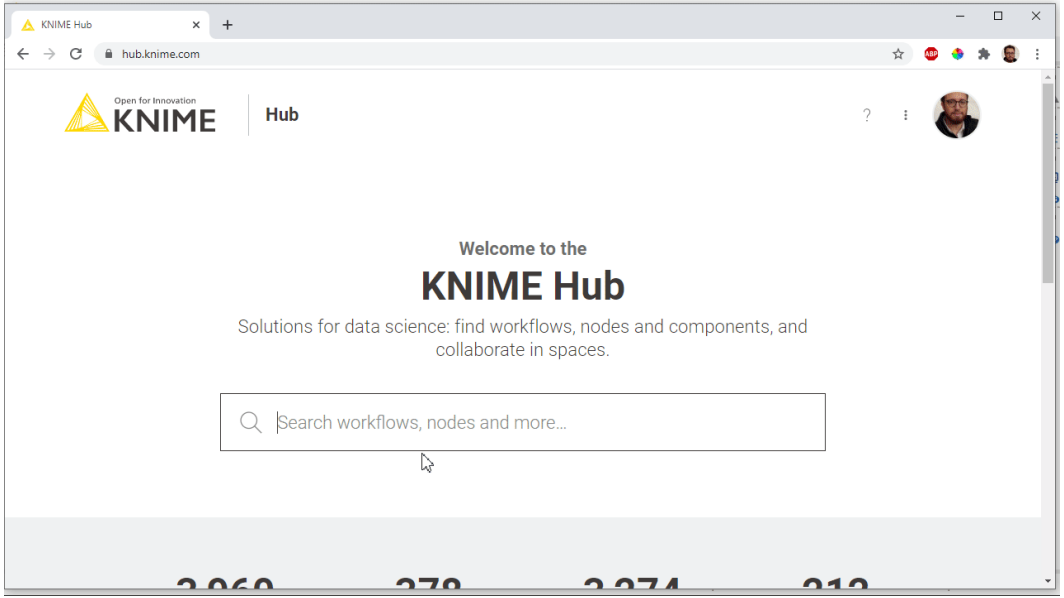
Components are for Sharing

- Use KNIME Hub spaces to share components
- Leverage what others have built by re-using component (and keep up-to-date) Components
- Collaboration on private spaces (to be released)



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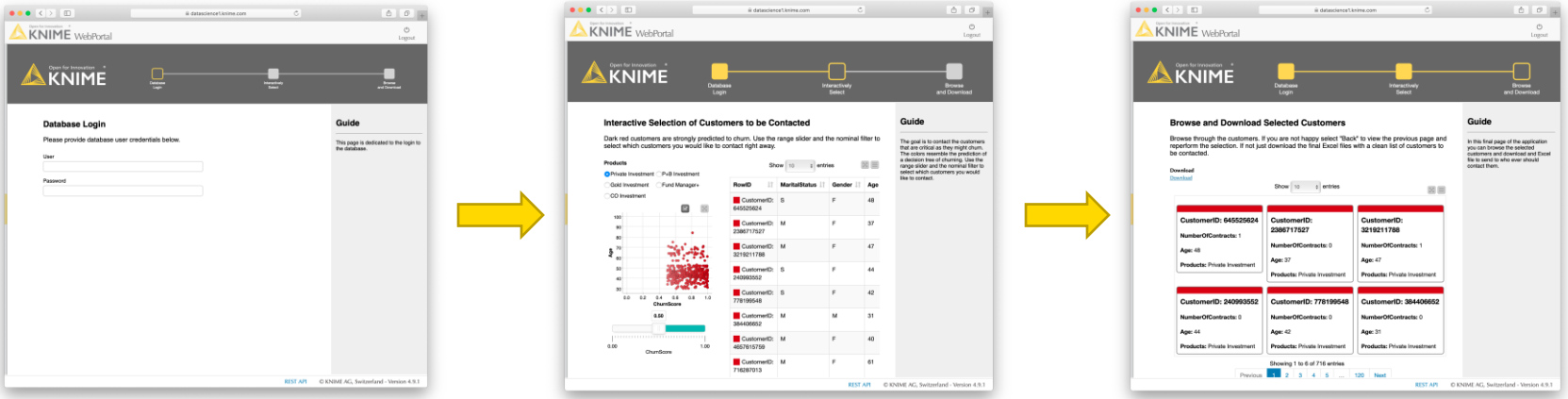
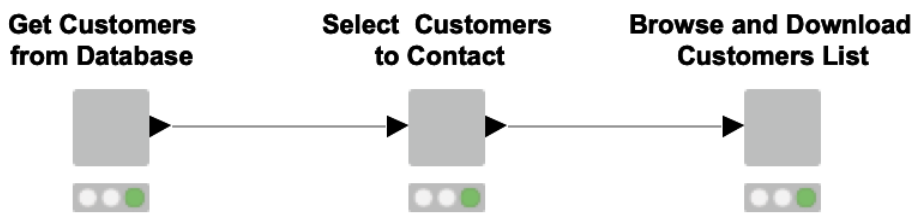
… or Guided Analytics





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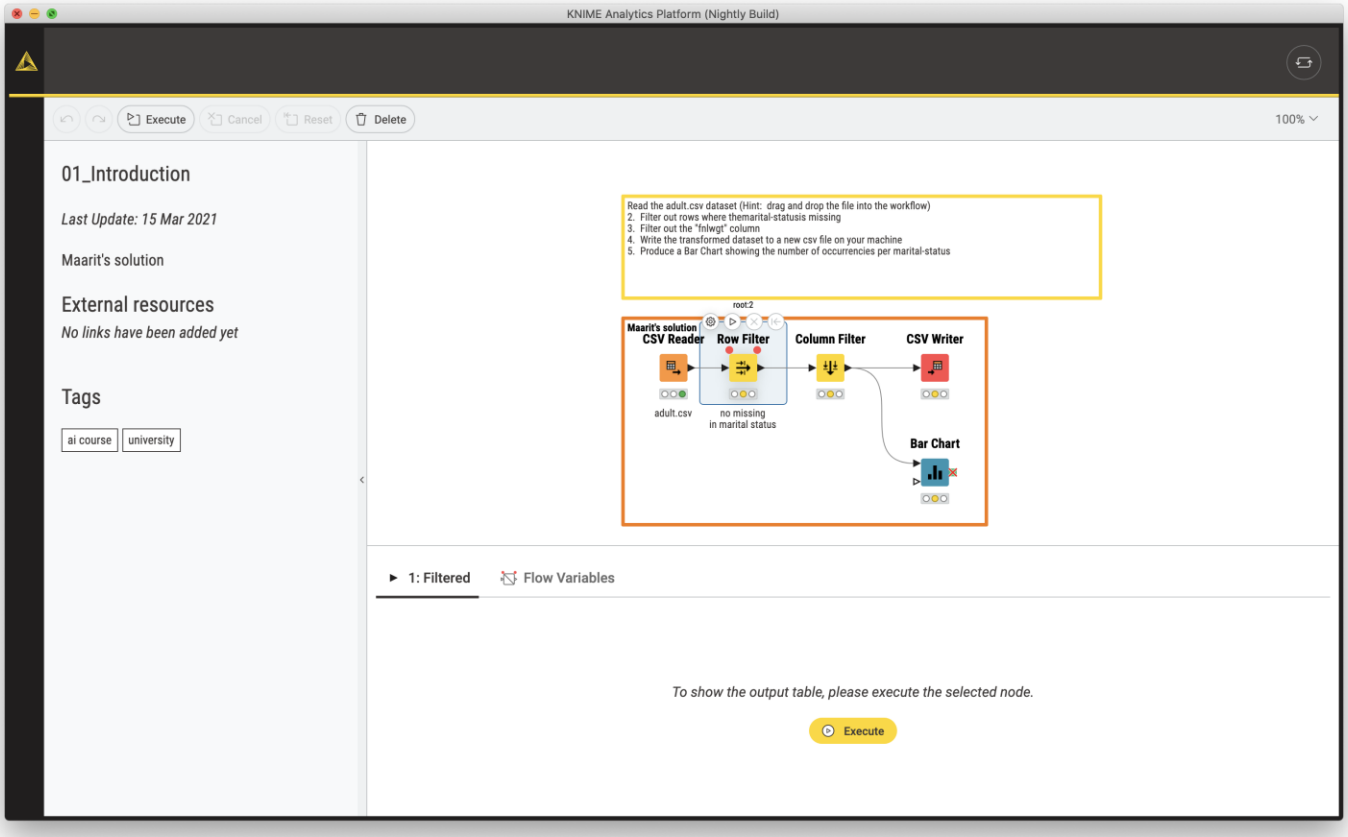
Sneak Preview of the New UI Look & Feel



Join https://datatalks.knime.com/community-edition for more information!

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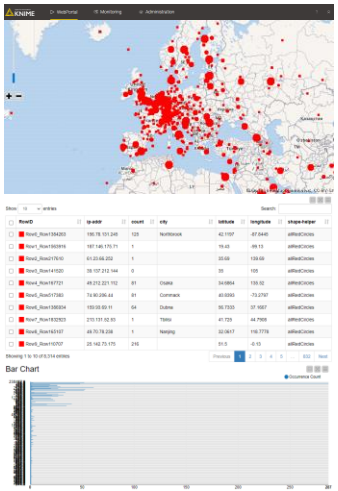
Final Remarks

- Visual workflows allow you build documented and reproducible analyses
- KNIME Analytics Platform is open-source and free to use (no limitations)
- We are making it even easier to gather data from different cloud resources
- Integrated deployment allows you to build workflows that build workflows
- Components are powerful way to lower the entry barrier for new users

Thank You!



WebPortal Application

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