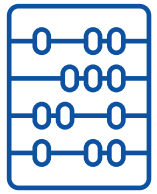
How IGT Internal Audit Powers Systematic and Reproducible Workflows with KNIME

Atanas Bosakov | IGT

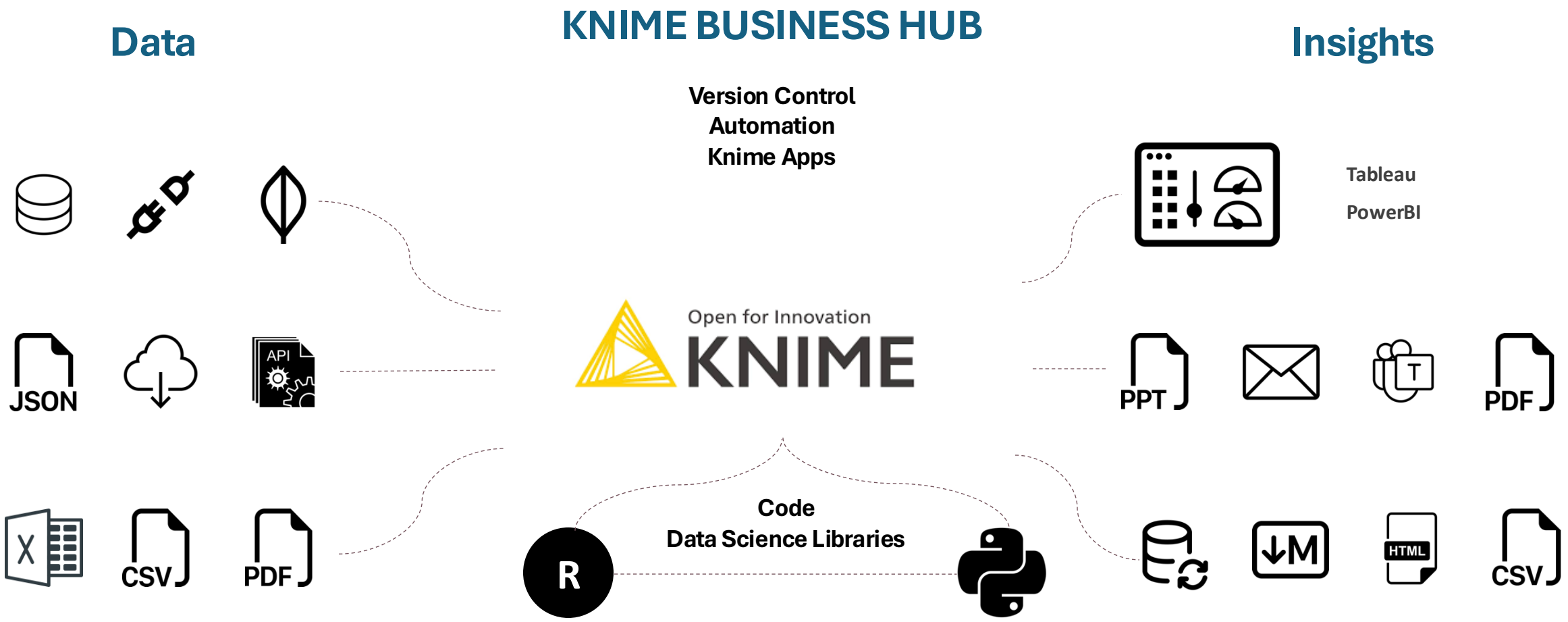
Systematic | Reproducible | Integrated



Framework

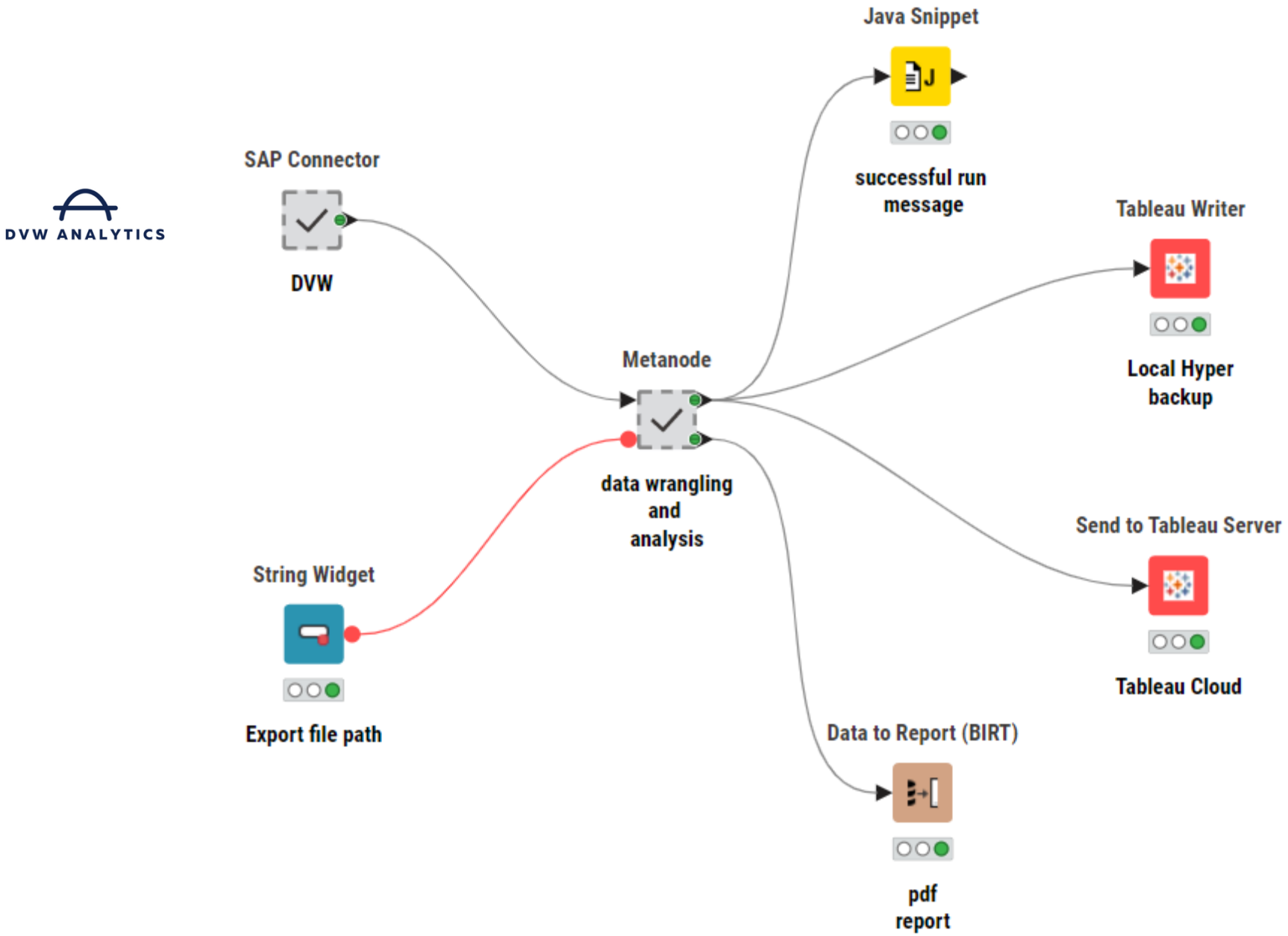
Examples

IA Analytics Framework



Continuous Data Pipeline | Agility | FOSS | Efficiency | Parsimonious Queries | Reproducible Work | Audit Trail | Rapid Responses | Analytics Maturity

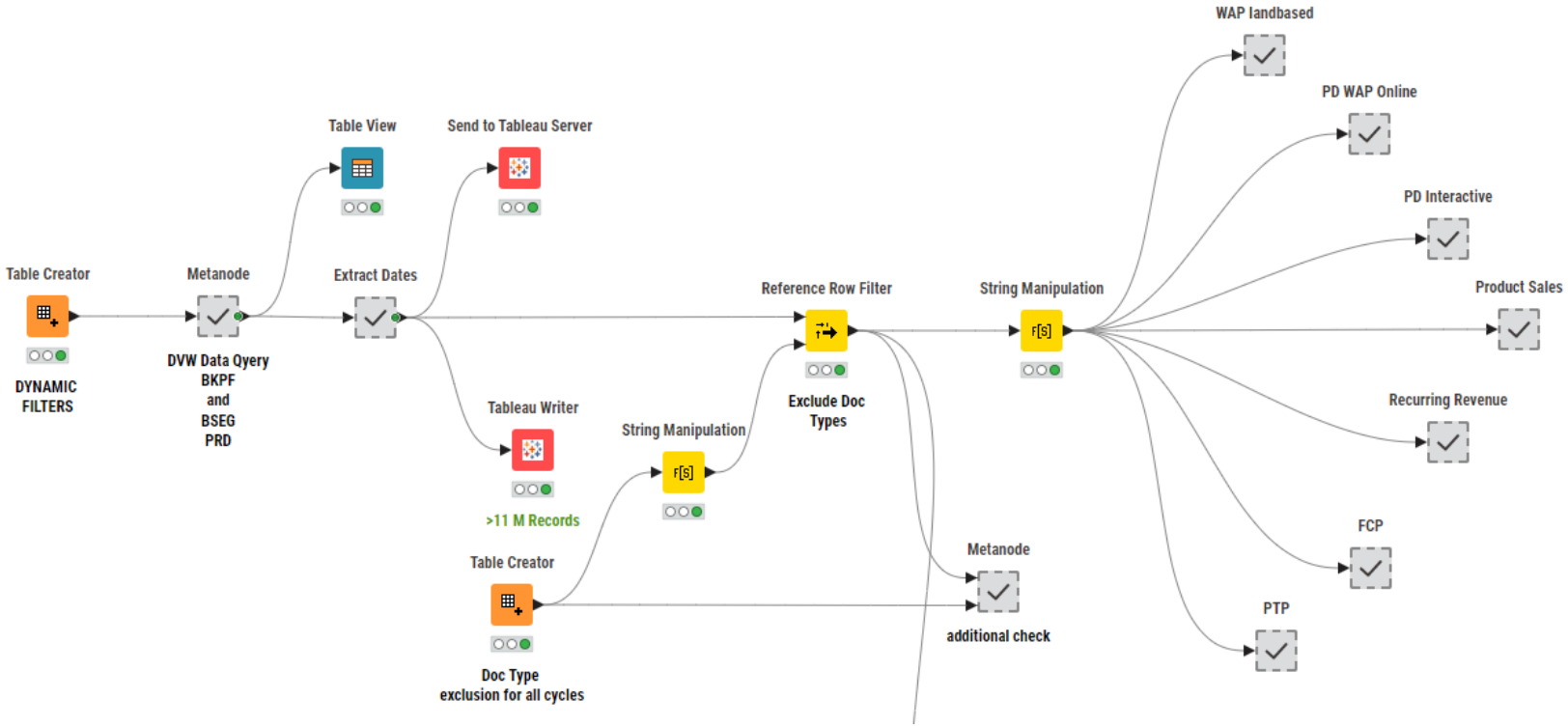
DVW SAP Connector

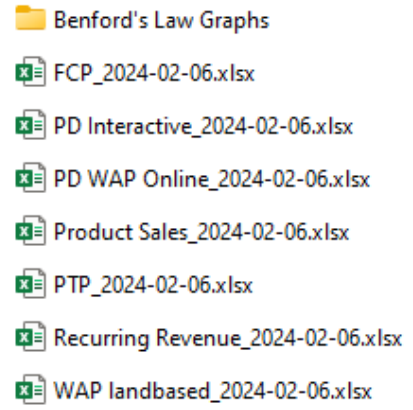


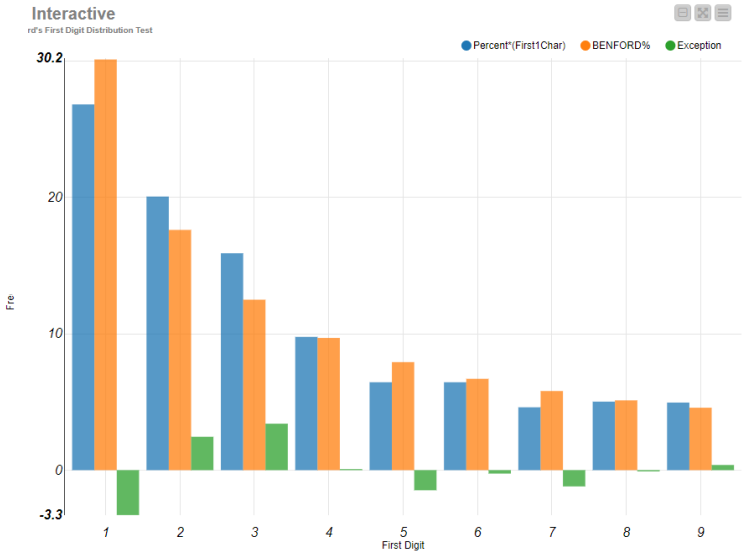
Anomaly Detection | Benford's Law

Table View

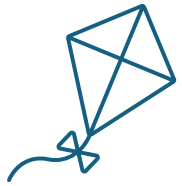
Rows: 11042556 | Columns: 25

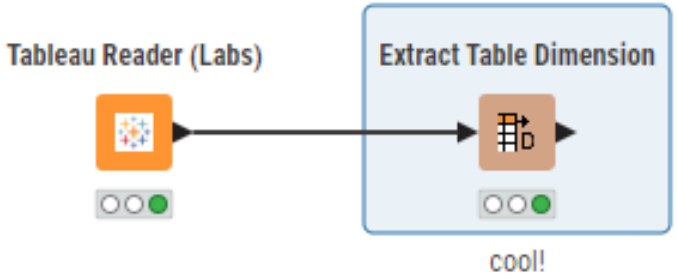






Portability





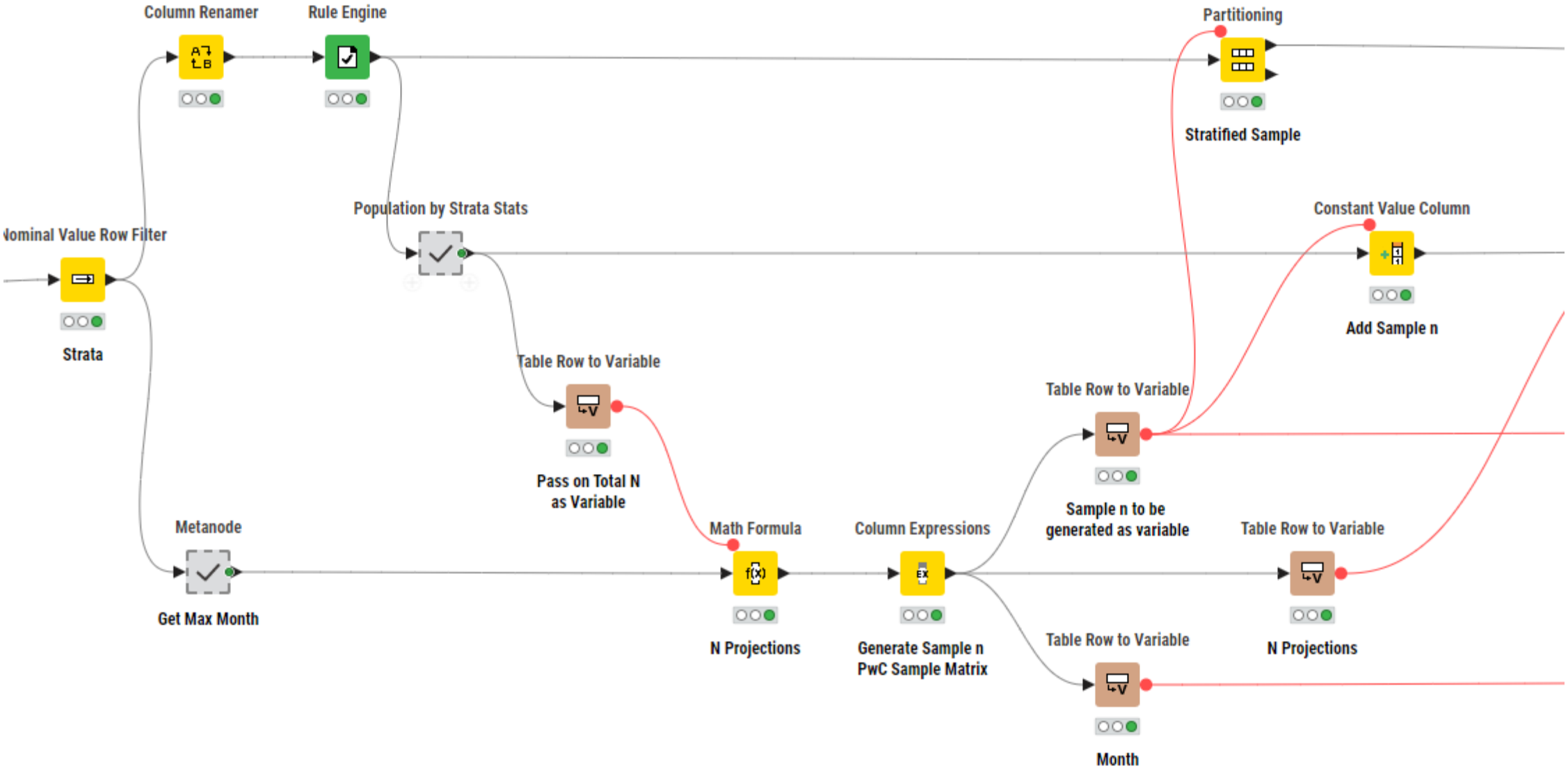
1: Table containing dimensions | Flow Variables

Rows: 2 | Columns: 1

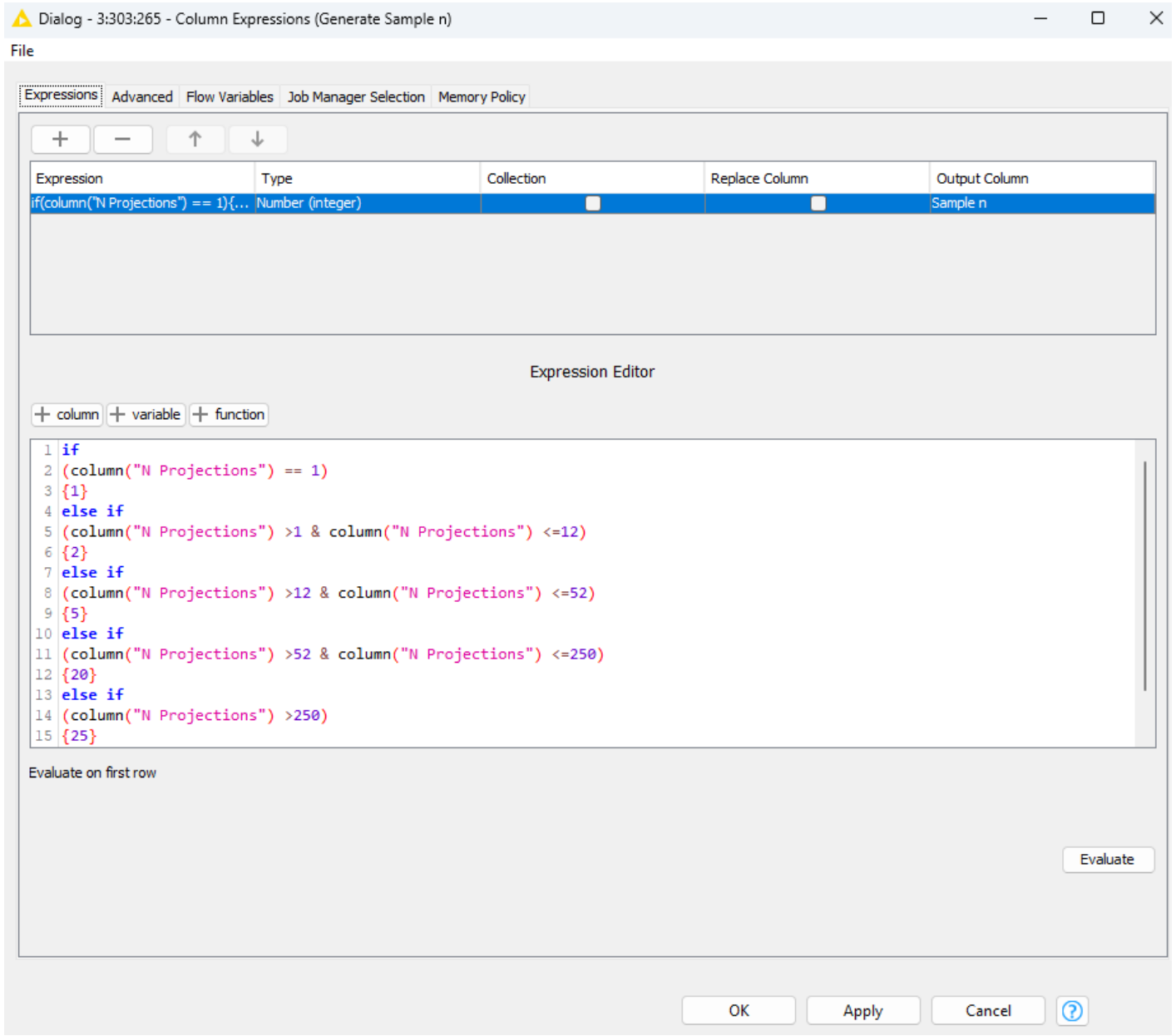
#	RowID	Dimensions *Number (integer)*
1	Number Rows	11042556
2	Number Columns	28

Population and Sampling Statistics | Stratified Proportional Sampling

… with dynamic parameters | flow variables



… satisfying external auditors' requirements



Insightful & Actionable Analytics

Agility | Efficiency | Sound Data Analytics | Iterative Approach

Code

```
### Format Tables | MarkDown

```{r,echo = FALSE, results= TRUE}
gt(Nevada_Current_Users_Full_Table) %>%
  tab_header(
    title = "Current Nevada Users List",
    subtitle =("Added and Removed Users")
  ) %>%
  cols_align(
    align = "center",columns = vars("Added/Removed","Maintenance - Operator?","Maintenance - Engineer?")
  )




```

Total Runtime:

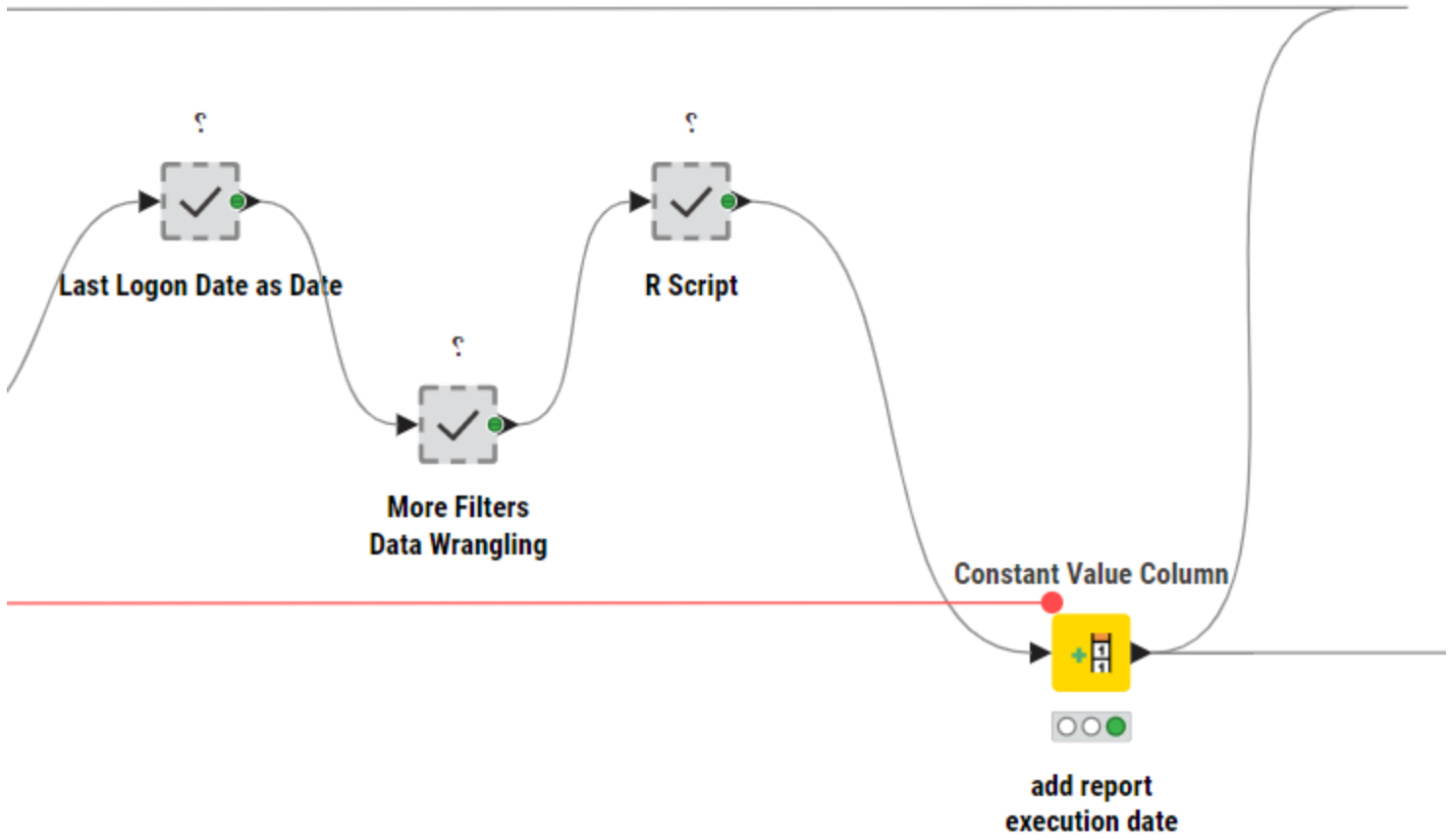
```{r}
end_time <- Sys.time()
print(end_time)
```

```{r, echo = TRUE, results = TRUE}
run_time <- end_time - start_time
print(run_time)
```
```

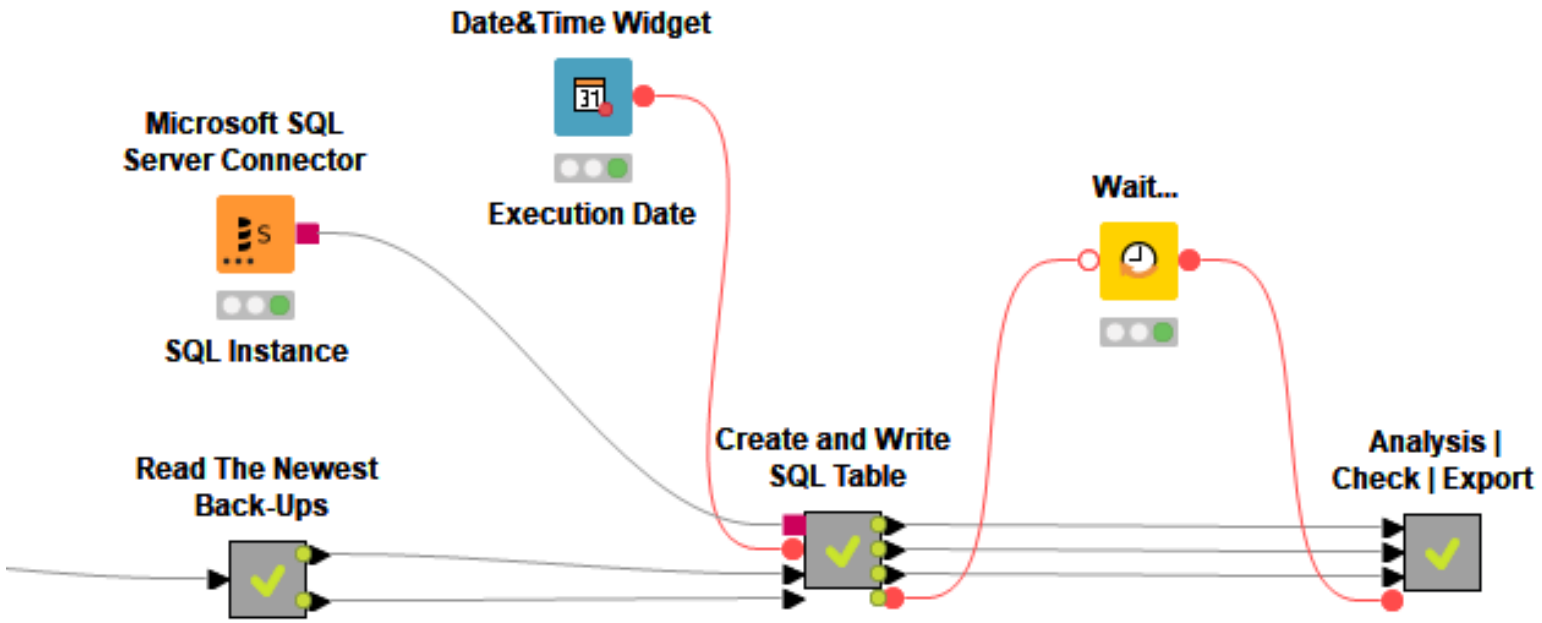
Code

Node (Low Code)

Hybrid | Advanced Data Science
in a Node Workflow Environment

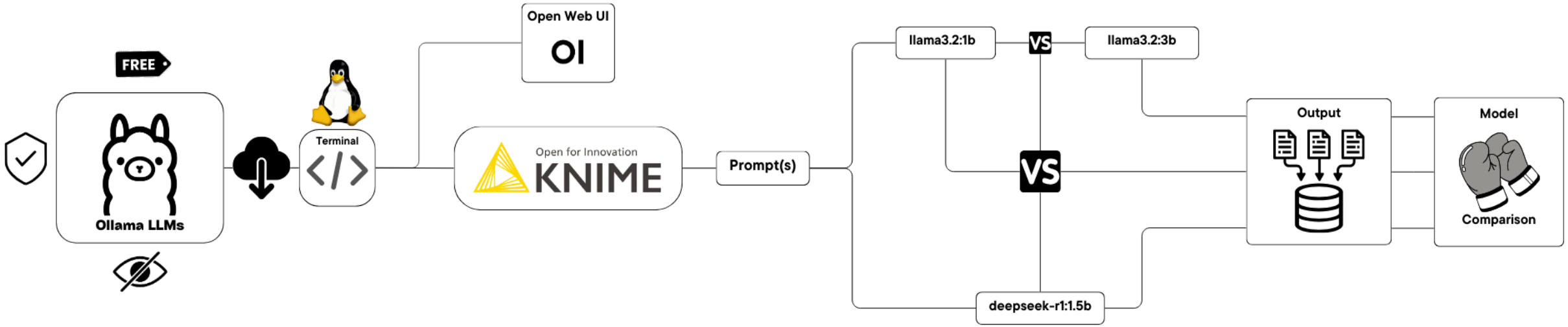


SQL to SQL

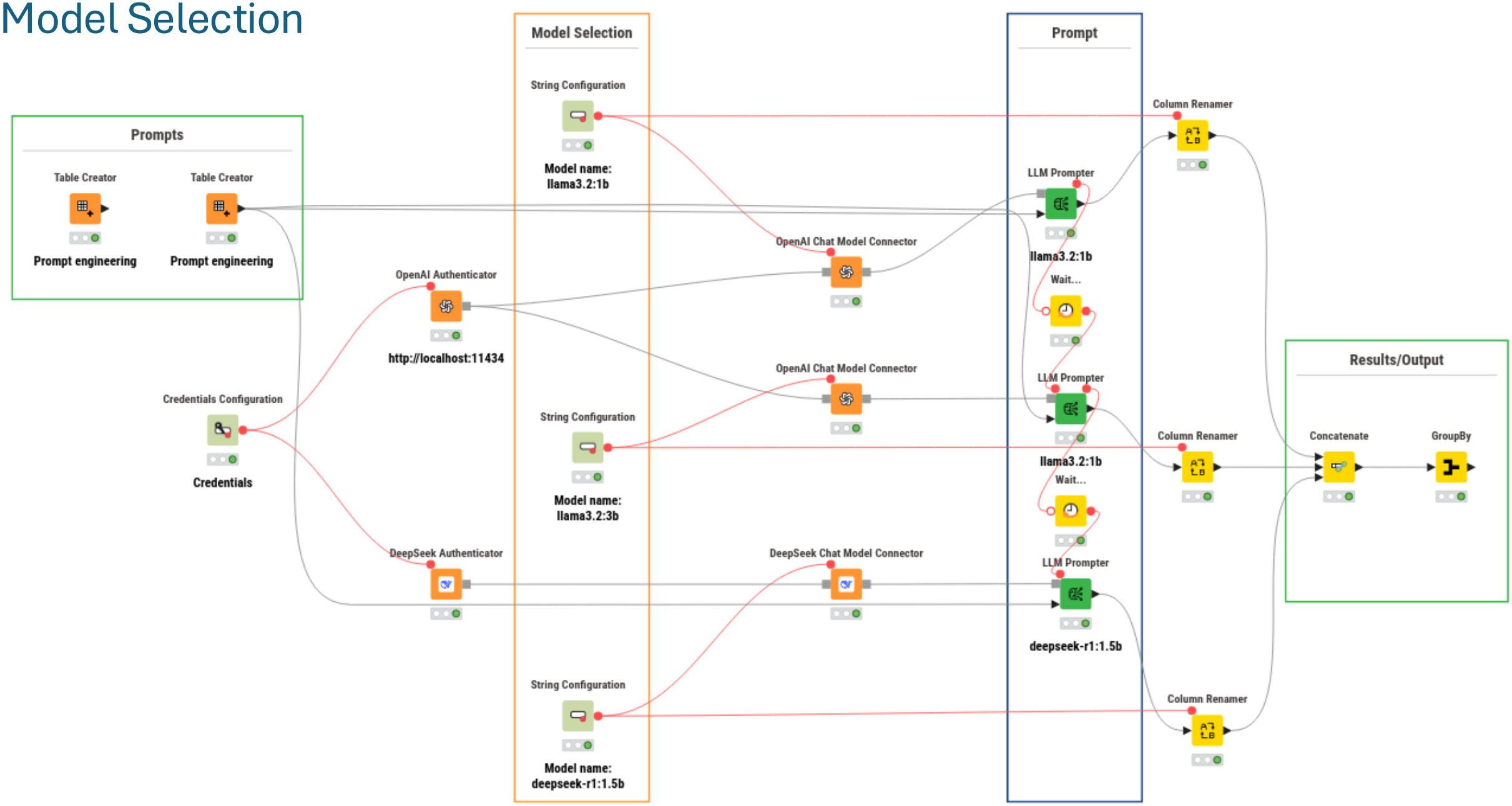


- ✓ Read
- ✓ Create SQL Tables
- ✓ Write to SQL Tables
- ✓ Custom SQL
- ✓ Completeness Check
- ✓ Analysis Export
- ✓ Audit Log | Reproducibility

AI in IA


FREE
Ollama LLMs
Terminal
Open Web UI
OI
Open for Innovation
KNIME
Prompt(s)
llama3.2:1b
VS
llama3.2:3b
VS
deepseek-r1:1.5b
Output
Model
Comparison

Model Selection

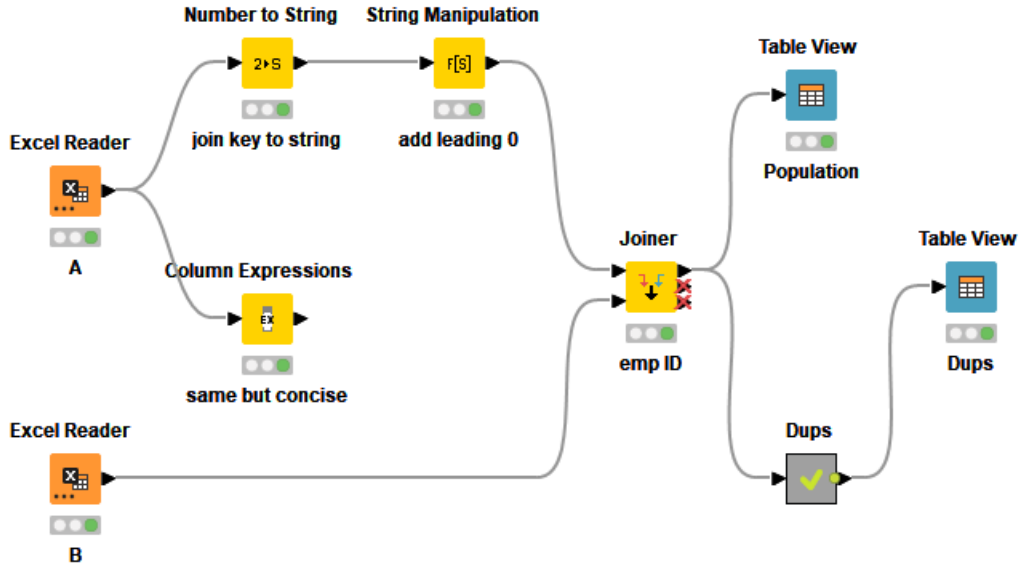


Simple but Practical | Lookups vs Joins

	Emp ID	Name
1	1112233	John Smith
2	1112234	Jessica Lang
3	1112235	Dorothy Hubert
4	1112236	Jamal Jones
5	1112237	Leticia Wang
6	1112238	Jeremy Liu
7	1112239	Mike Wise

	Emp ID	Dep
1	01112233	IT
2	01112233	Analytics
3	01112234	Analytics
4	01112235	Finance
5	01112236	Finance
6	01112237	Marketing
7	01112238	R&D
8	01112239	Internal Audit
9	01112240	HR
10	01112241	HR
11	01112242	Marketing
12	01112243	Finance

	Emp ID	Name	New ID Lookup	Dep Lookup
1	1112233	John Smith	01112233	IT
2	1112234	Jessica Lang	01112234	Analytics
3	1112235	Dorothy Hubert	01112235	Finance
4	1112236	Jamal Jones	01112236	Finance
5	1112237	Leticia Wang	01112237	Marketing
6	1112238	Jeremy Liu	01112238	R&D
7	1112239	Mike Wise	01112239	Internal Audit



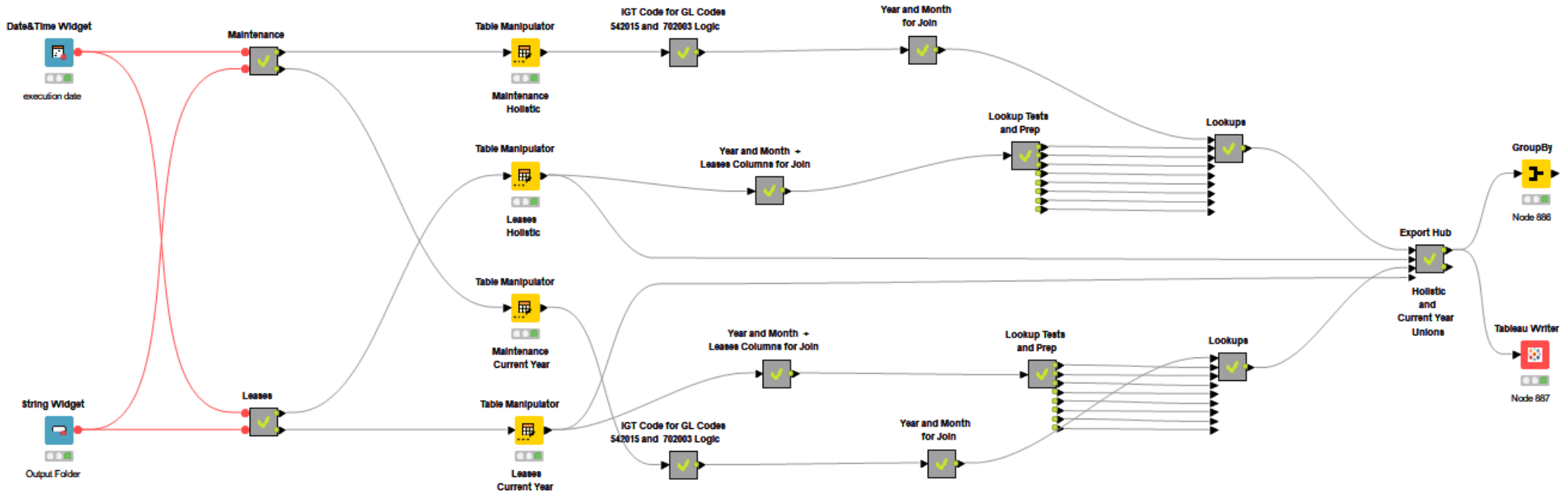
Full Data

#	Emp ID String	Name String	Dep String
1	01112233	John Smith	IT
2	01112233	John Smith	Analytics
3	01112234	Jessica Lang	Analytics
4	01112235	Dorothy Hubert	Finance
5	01112236	Jamal Jones	Finance
6	01112237	Leticia Wang	Marketing
7	01112238	Jeremy Liu	R&D
8	01112239	Mike Wise	Internal Audit

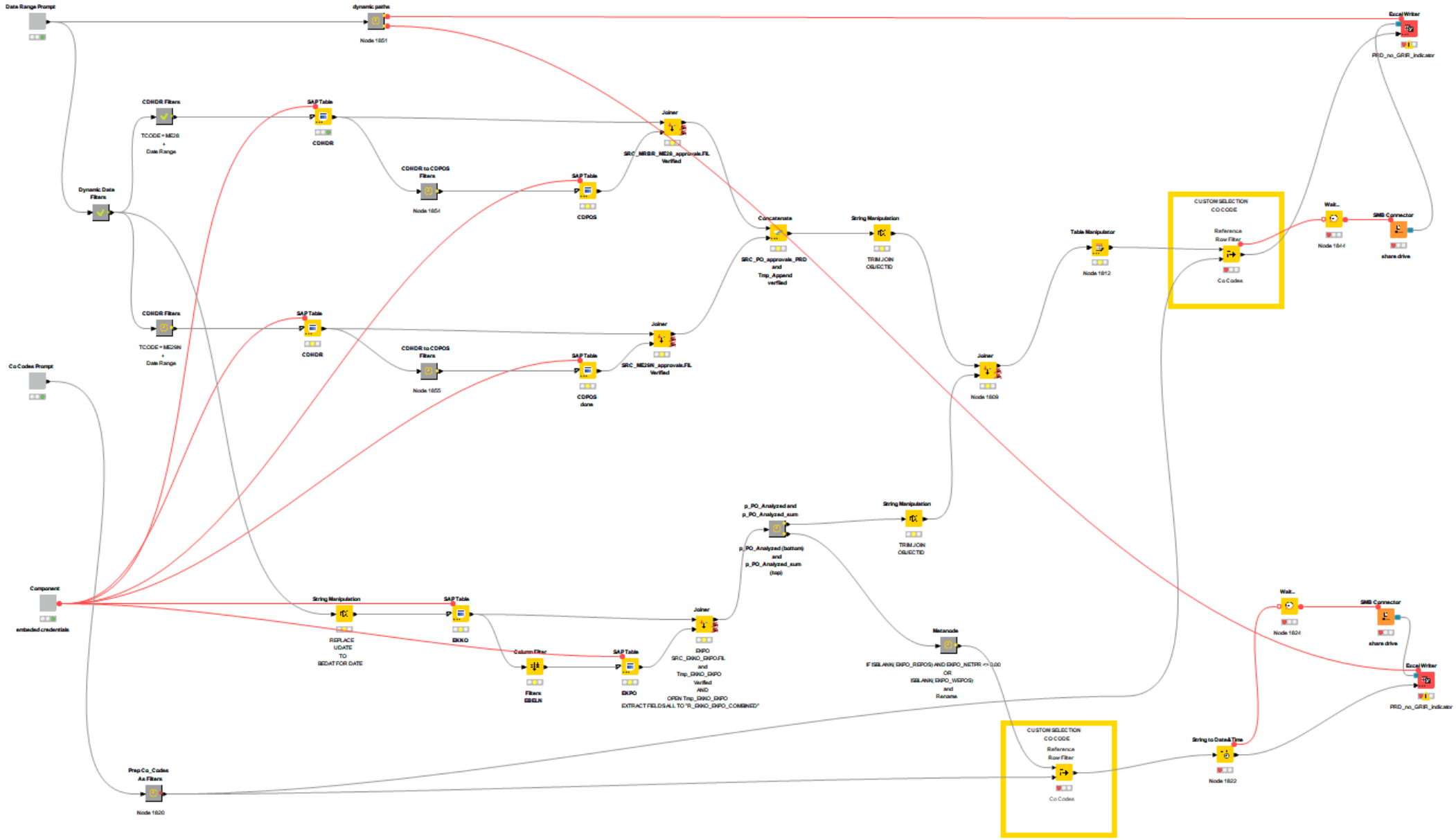
Dups

#	Emp ID String	Name String	Dep String
1	01112233	John Smith	IT
2	01112233	John Smith	Analytics

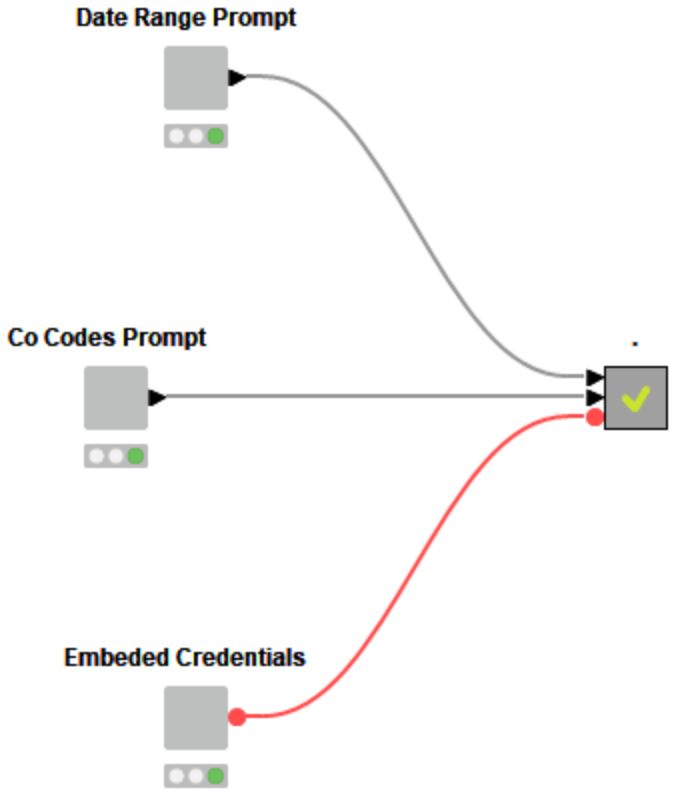
Collaboration | Reproducibility



Reducing Complexity - Sandbox | Dev | Testing



Reducing Complexity | Packaged Version - Production



Knime Business HUB | User-Friendly UI/UX

SOX GLOT

Select the start and end dates

Start Date

2024-01-01

Today

End Date

2024-05-31

Today

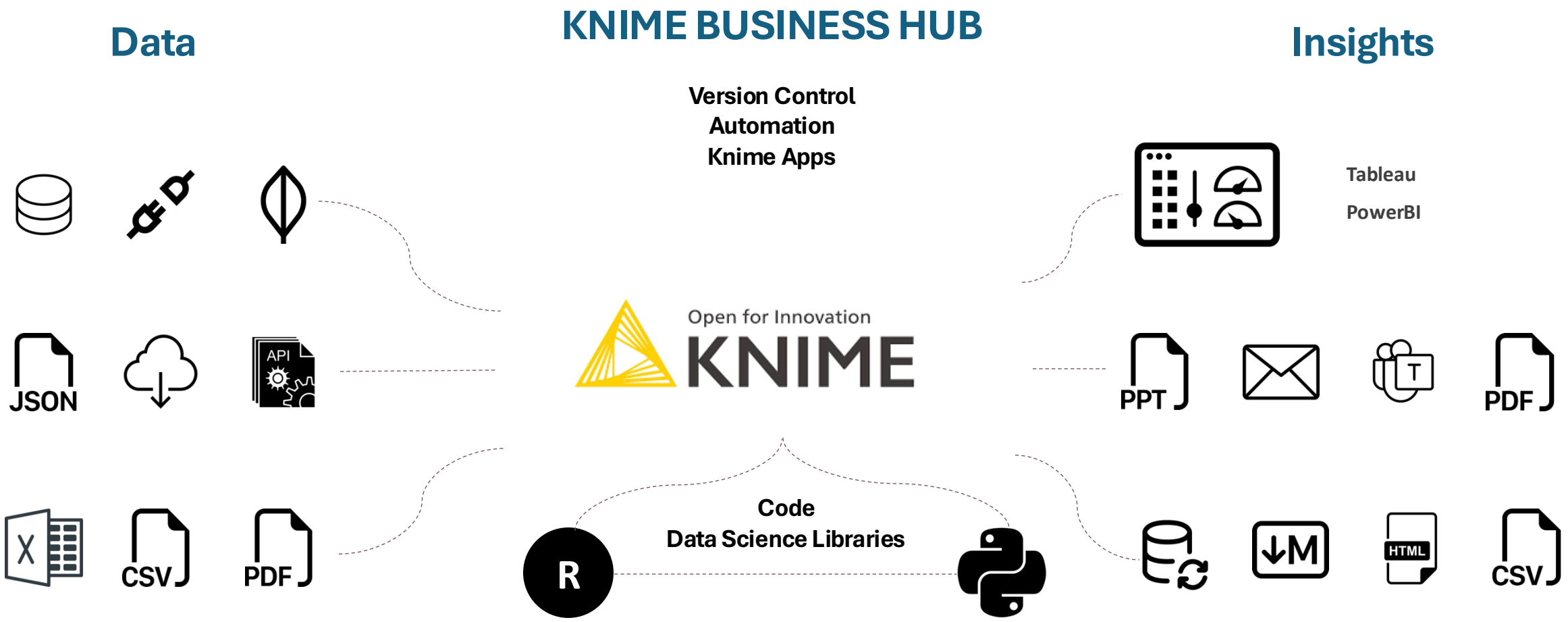
SOX GLOT

Enter Company Code(s)

If multiple, separate by "," | Example: ABC, XYZ

NCYB, MNIB

IA Analytics Framework



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Q&A