# The Impact of Healthcare Spending on Life Expectancy

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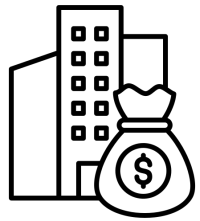
# Data

## Sources

WORLD BANK GROUP

OECD

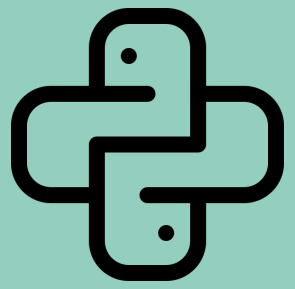
36 countries over
a 15-year period



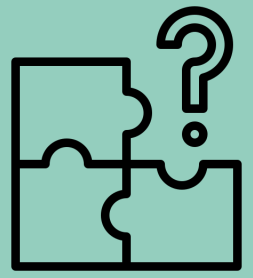
Healthcare
Spending

Health
Outcomes

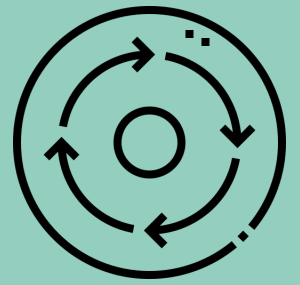
# Data Cleaning



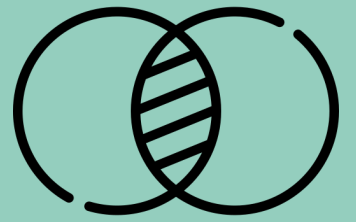
Python for initial cleaning.



Handling missing data with NaN values

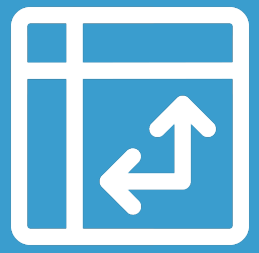


Type conversions for consistency

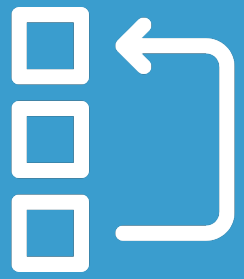


Removing duplicates and irrelevant data.

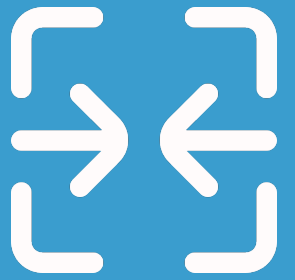
# Data Reshaping and Transformation



Pivoting, melting, and transposing tables.



Renaming and reordering columns.



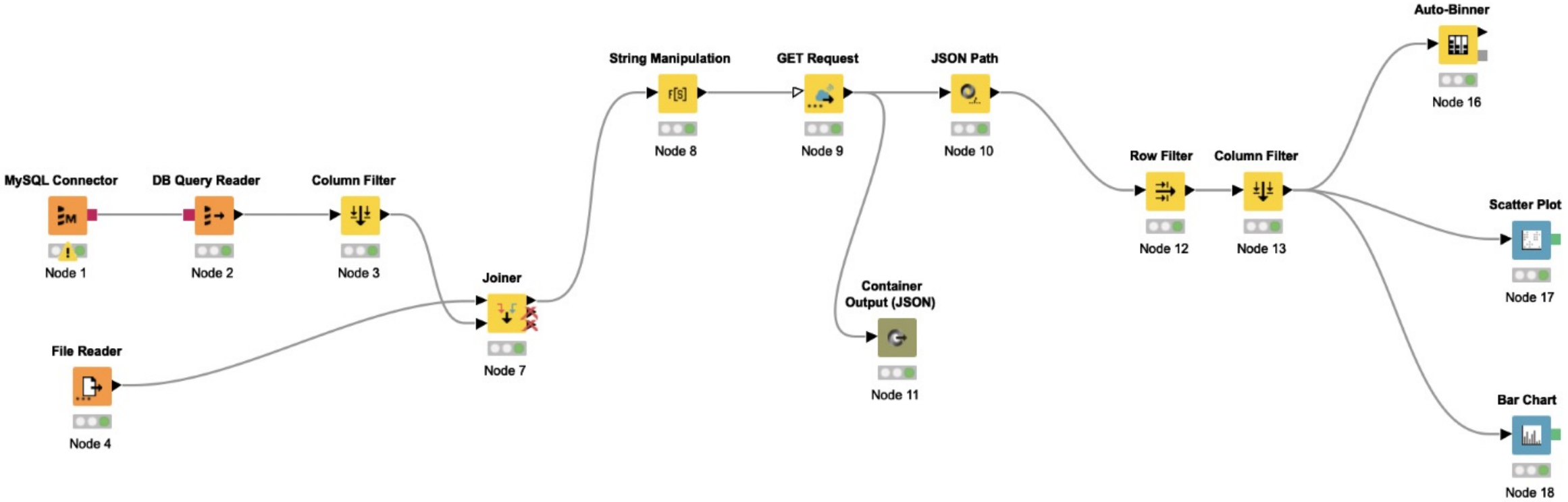
Merging tables to include region for comprehensive datasets.

# SQL Workflow

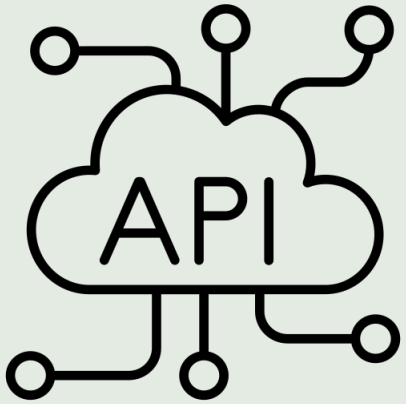
- id
- country_name
- country_code
- region
- year
- current health expendure (%gdp)
- health expenditure per capita
- government health expenditure
- private health expenditure
- external health expenditure
- out of pocket expenditure

- id
- country_name
- country_code
- region
- year
- gdp (usd)
- gdp growth (annual %)
- gdp per capita (usd)
- gdp per capita growth(annual %)
- population growth (annual %)
- popultaion (total)

# Knime Pipeline Workflow



# API Integration



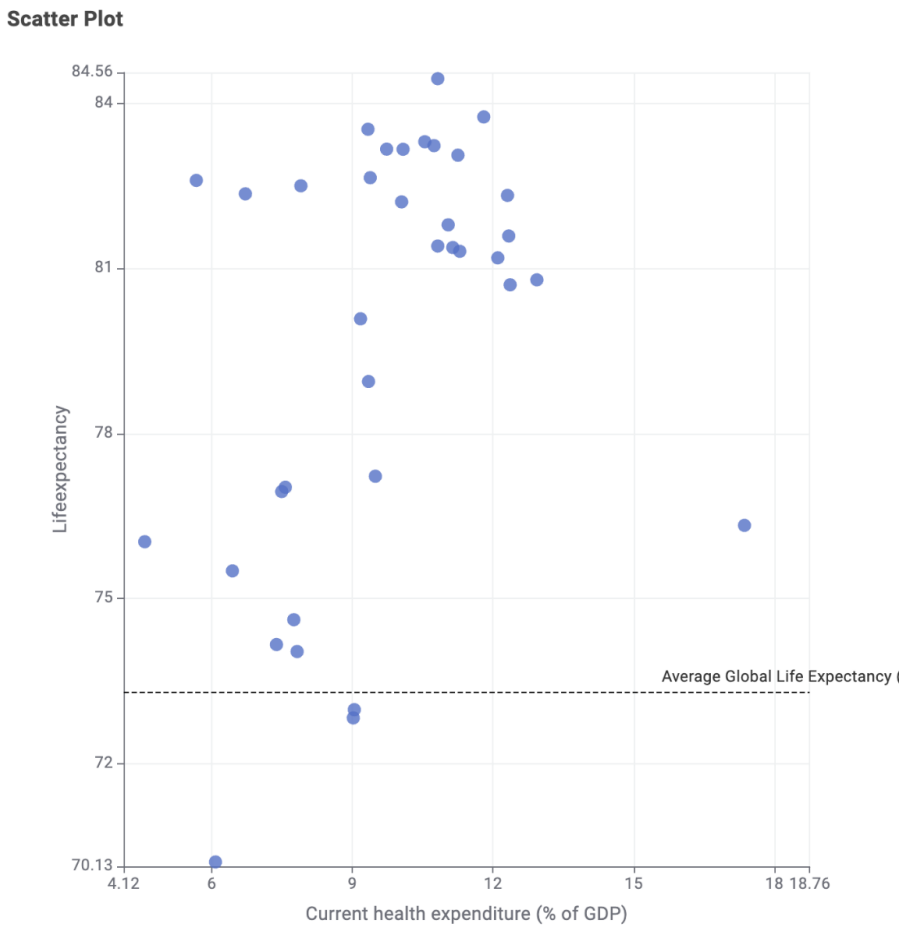

**OECD Data API**

**Data Retrieval** → **Data Integration** → **Analytics Ready Dataset**

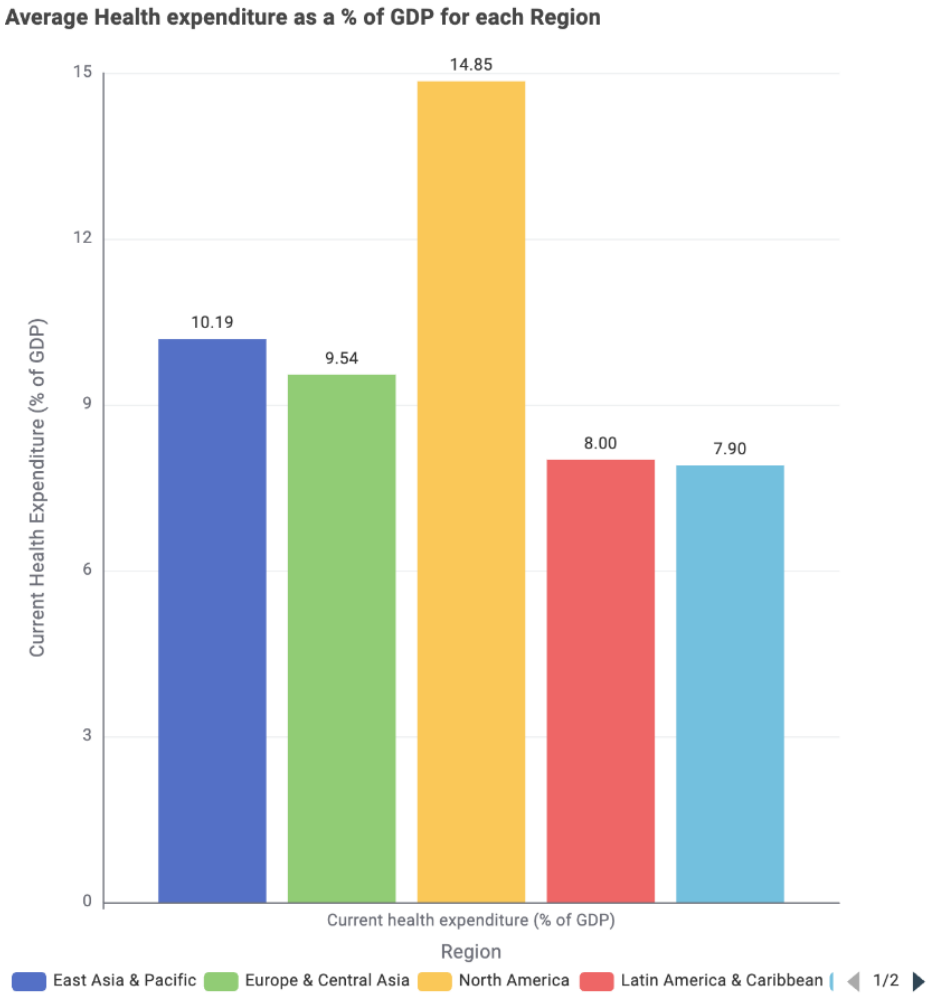
*Sample data snippet*:

```
{
  "Country": "USA",
  "Year": 2023,
  "LifeExpectancy": 78.5
}
```

# Data Insights and Analysis




average health expenditure as a % of GDP for each region




average health expenditure and life expectancy with respect to the global average.

# Futher Data Analysis

- Examine differences in health expenditure types (governmental, private, external, out-of-pocket)
- Identify countries with pigh life expectancy but low healthcare spending, and low life expectancy but high healthcare spending
- Explore the point at which increased spending no longer yields significant life expectancy gains (diminishing returns
- Compare which types of health expenditures have the strongest correlation with life expectancy improvements.

# Conclusion

Integrated and prepared data on healthcare spending and life expectancy across OECD countries over 15 year

Python, MySQL, Knime, OECD Data API, World Bank datasets.