

## k-Nearest Neighbors (k-NN) - Supervised Learning method

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

**Repository**

- Training Resources (connected)
- Samples
- Community Samples (connected)
- Local Repository (Local)**
  - Connections
  - data
  - processes
  - iris\_KNN (6/7/25 4:41 PM -)
- DB (Legacy)

**Operators**

- read csv
- Data Access (1)
  - Files (1)
    - Read (1)
      - Read CSV

No results were found.

**Process**

Process CSV

Please select a file to open.

Documents

| Bookmarks | File Name                    | Size | Type                | Last Modified |
|-----------|------------------------------|------|---------------------|---------------|
| ---       | Fax                          |      | Directory           | Dec 4, 2020   |
| ---       | My Data Sources              |      | Directory           | Jun 1, 2024   |
| ---       | My Tableau Prep Repository   |      | Directory           | May 22, 2025  |
| ---       | My Tableau Repository        |      | Directory           | May 6, 2025   |
| ---       | OneNote Notebooks            |      | Directory           | Jan 18, 2021  |
| ---       | Python Scripts               |      | Directory           | Sep 3, 2023   |
| ---       | Scanned Documents            |      | Directory           | Nov 25, 2021  |
| ---       | SQL Server Management Studio |      | Directory           | Dec 13, 2023  |
| ---       | TurboTax                     |      | Directory           | Mar 26, 2023  |
| ---       | Visual Studio 2017           |      | Directory           | Sep 21, 2023  |
| ---       | Zoom                         |      | Directory           | May 20, 2021  |
| ---       | iris.csv                     | 3 KB | Microsoft Excel ... | Nov 11, 2024  |

iris.csv

csv\_file (\*.csv)

Open Cancel

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

Help

Read CSV

AI Studio Core

Tags: Load, Import, Read, Data, Files, Text, Commas, Spreadsheet, Excel, Datasets, Tsv

Synopsis

This Operator reads an ExampleSet from the file specified by the input port.

4:45 PM 6/7/2025

File Edit Process View Connections Settings Import Data - Specify your data format

All Studio

Repository

- Training Resources (connected)
- Samples
- Community Samples (connected)
- Local Repository (Local)**
  - DB (Legacy)

Operators

Search for Operators

- Data Access (62)
- Blending (81)
- Cleansing (28)
- Modeling (167)
- Scoring (13)
- Validation (30)
- Utility (85)

Get more operators from the Marketplace

**Process**

Specify your data format

Header Row: 1, File Encoding: windows-1252, Use Quotes: ", Start Row: 1, Escape Character: \, Column Separator: Comma ;, Decimal Character: ., Skip Comments: #, Trim Lines: , Multiline Text: .

sepal length (cm) sepal width (cm) petal length (cm) petal width (cm) species

|    |     |     |     |     |        |
|----|-----|-----|-----|-----|--------|
| 1  | 5.1 | 3.5 | 1.4 | 0.2 | setosa |
| 2  | 4.9 | 3.0 | 1.4 | 0.2 | setosa |
| 3  | 4.7 | 3.2 | 1.3 | 0.2 | setosa |
| 4  | 4.6 | 3.1 | 1.5 | 0.2 | setosa |
| 5  | 5.0 | 3.6 | 1.4 | 0.2 | setosa |
| 6  | 5.4 | 3.9 | 1.7 | 0.4 | setosa |
| 7  | 4.6 | 3.4 | 1.4 | 0.3 | setosa |
| 8  | 5.0 | 3.4 | 1.5 | 0.2 | setosa |
| 9  | 4.4 | 2.9 | 1.4 | 0.2 | setosa |
| 10 | 4.9 | 3.1 | 1.5 | 0.1 | setosa |
| 11 | 5.4 | 3.7 | 1.5 | 0.2 | setosa |
| 12 | 4.8 | 3.4 | 1.6 | 0.2 | setosa |
| 13 | 4.8 | 3.0 | 1.4 | 0.1 | setosa |
| 14 | 4.3 | 3.0 | 1.1 | 0.1 | setosa |
| 15 | 5.8 | 4.0 | 1.2 | 0.2 | setosa |
| 16 | 5.7 | 4.4 | 1.5 | 0.4 | setosa |
| 17 | 5.1 | 3.0 | 1.2 | 0.1 | setosa |

no problems.

Previous Next Cancel

8:46 PM 6/6/2025

**Import Data - Format your columns.**

**Format your columns.**

Date format: Enter value...  Replace errors with missing values

|      | sepal length (cm) | sepal width (cm) | petal length (cm) | petal width (cm) | species    |
|------|-------------------|------------------|-------------------|------------------|------------|
| real | real              | real             | real              | real             | polynomial |
| 1    | 5.100             | 3.500            | 1.400             | 0.200            | setosa     |
| 2    | 4.900             | 3.000            | 1.400             | 0.200            | setosa     |
| 3    | 4.700             | 3.200            | 1.300             | 0.200            | setosa     |
| 4    | 4.600             | 3.100            | 1.500             | 0.200            | setosa     |
| 5    | 5.000             | 3.600            | 1.400             | 0.200            | setosa     |
| 6    | 5.400             | 3.900            | 1.700             | 0.400            | setosa     |
| 7    | 4.600             | 3.400            | 1.400             | 0.300            | setosa     |
| 8    | 5.000             | 3.400            | 1.500             | 0.200            | setosa     |
| 9    | 4.400             | 2.900            | 1.400             | 0.200            | setosa     |
| 10   | 4.900             | 3.100            | 1.500             | 0.100            | setosa     |
| 11   | 5.400             | 3.700            | 1.500             | 0.200            | setosa     |
| 12   | 4.800             | 3.400            | 1.600             | 0.200            | setosa     |
| 13   | 4.800             | 3.000            | 1.400             | 0.100            | setosa     |
| 14   | 4.300             | 3.000            | 1.100             | 0.100            | setosa     |
| 15   | 5.800             | 4.000            | 1.200             | 0.200            | setosa     |
| 16   | 5.700             | 4.400            | 1.500             | 0.400            | setosa     |
| 17   | 5.400             | 3.900            | 1.300             | 0.400            | setosa     |
| 18   | 5.100             | 3.500            | 1.400             | 0.300            | setosa     |

**no problems.** Every process.

Previous Next Cancel

**//Local Repository/iris\_KNN\* – Altair AI Studio Educational 2025.0.1 @ LAPTOP-TLTSR3BM**

**Design**

**Process**

Read CSV → Set Role

**Parameters**

Process

- verbosity: init
- logfile:
- resultfile:
- random seed: 2001
- send mail: never
- encoding: SYSTEM

**Help**

Process: AI Studio Core

Synopsis: The root operator of every process.

Description:

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

//Local Repository/iris\_KNN\* – Altair Ai Studio Educational 2025.0.1 @ LAPTOP-TLTSR3BM

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

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  - iris\_KNN (6/7/25 4:57 PM -)
- DB (Legacy)

**Process**

Edit Parameter List: set roles

This parameter defines new attribute roles.

attribute name target role

|         |       |
|---------|-------|
| species | label |
|---------|-------|

Add Entry Remove Entry Apply Cancel

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

**Operators**

- read csv
- Data Access (1)
  - Files (1)
    - Read (1)
      - Read CSV

No results were found.

Click to select, drag to move.

5:01 PM 6/7/2025

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File Edit Process View Connections Settings Extensions Help

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  - iris\_KNN (6/7/25 4:57 PM -)
- DB (Legacy)

**Process**

Read CSV → Set Role → Split Data

Set Role parameters:

- exa
- exa
- on

Split Data parameters:

- exa
- par

**Parameters**

Split Data

partitions Edit Enumeration (0) ...

sampling type automatic

use local random seed

Hide advanced parameters

**Help**

Split Data

Blending

Tags: Divide, Separate, Part, Training, Testing, Samples, Subsets, Partitions, Sampling

Synopsis

This operator produces the desired number of

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

**Operators**

- split data
- Blending (1)
  - Examples (1)
  - Sampling (1)
    - Split Data

No results were found.

5:01 PM 6/7/2025

//Local Repository/iris\_KNN\* – Altair AI Studio Educational 2025.0.1 @ LAPTOP-TLTSR3BM

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

**Repository**

- Import Data
- Training Resources (connect)
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  - Connections
  - data
  - processes
  - iris\_KNN (6/7/25 4:57 PM)
- DB (Legacy)

**Operators**

- split data
- Blending (1)
  - Examples (1)
    - Sampling (1)
      - Split Data

No results were found.

**Process**

Edit Parameter List: partitions

Process

Read CSV

ratio

0.8

0.2

Add Entry Remove Entry OK Cancel

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

**Parameters**

Split Data

partitions

Edit Enumeration (0...)

sampling type automatic

use local random seed

Hide advanced parameters

**Help**

**Split Data**

Tags: Divide, Separate Part, Training, Testing, Samples, Subsets, Partitions, Sampling

**Synopsis**

This operator produces the desired number of

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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

**Repository**

- Import Data
- Training Resources (connect)
- Samples
- Community Samples (connect)
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  - Connections
  - data
  - processes
  - iris\_KNN (6/7/25 4:57 PM)
- DB (Legacy)

**Operators**

- k-nn
- Modeling (1)
  - Predictive (1)
    - Lazy (1)
      - k-NN

No results were found.

**Process**

Read CSV

Set Role

Split Data

k-NN

**Parameters**

k-NN

k 5

weighted vote

measure types mixed measures

mixed measure MixedEuclideanDistance

**Help**

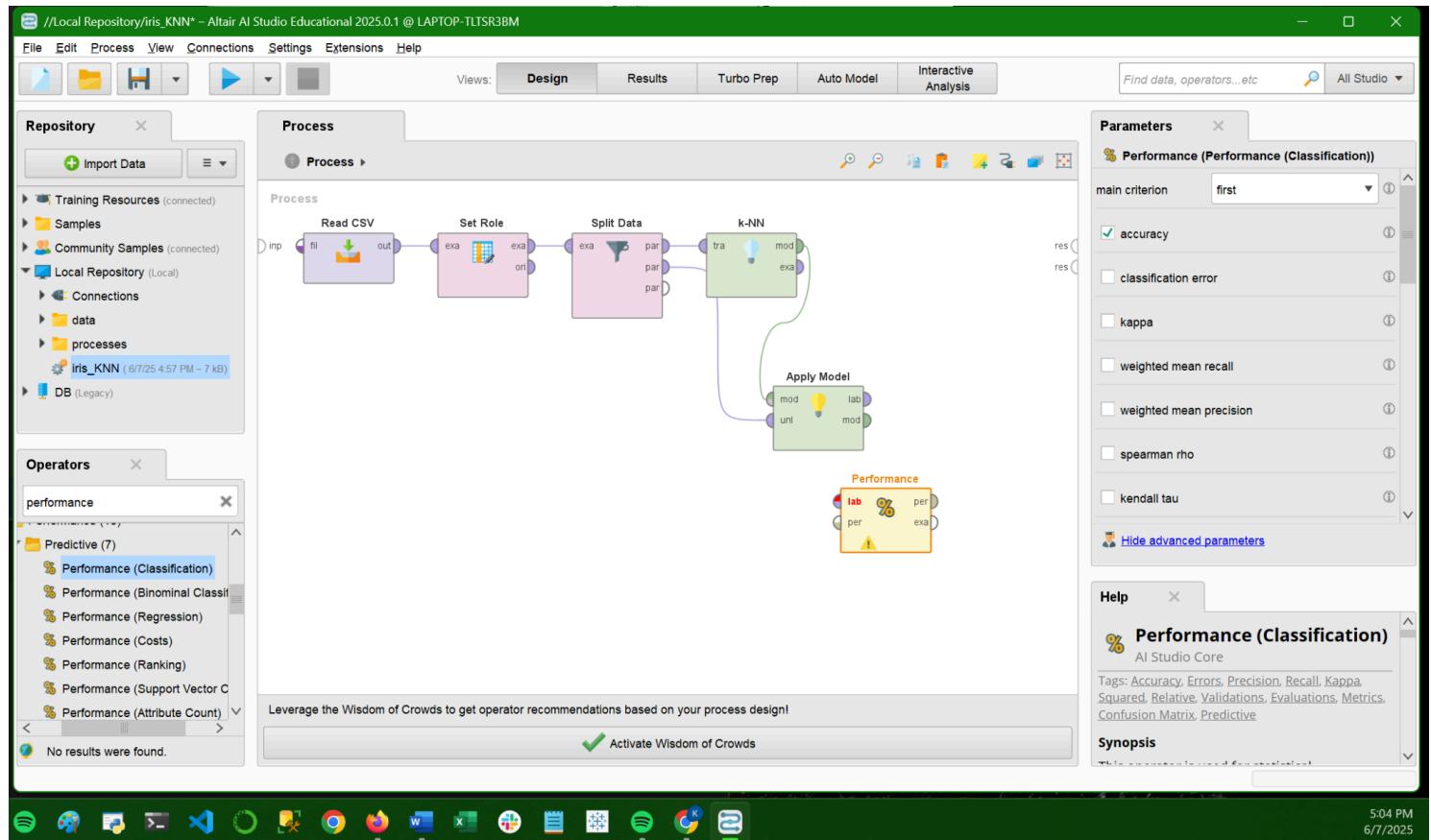
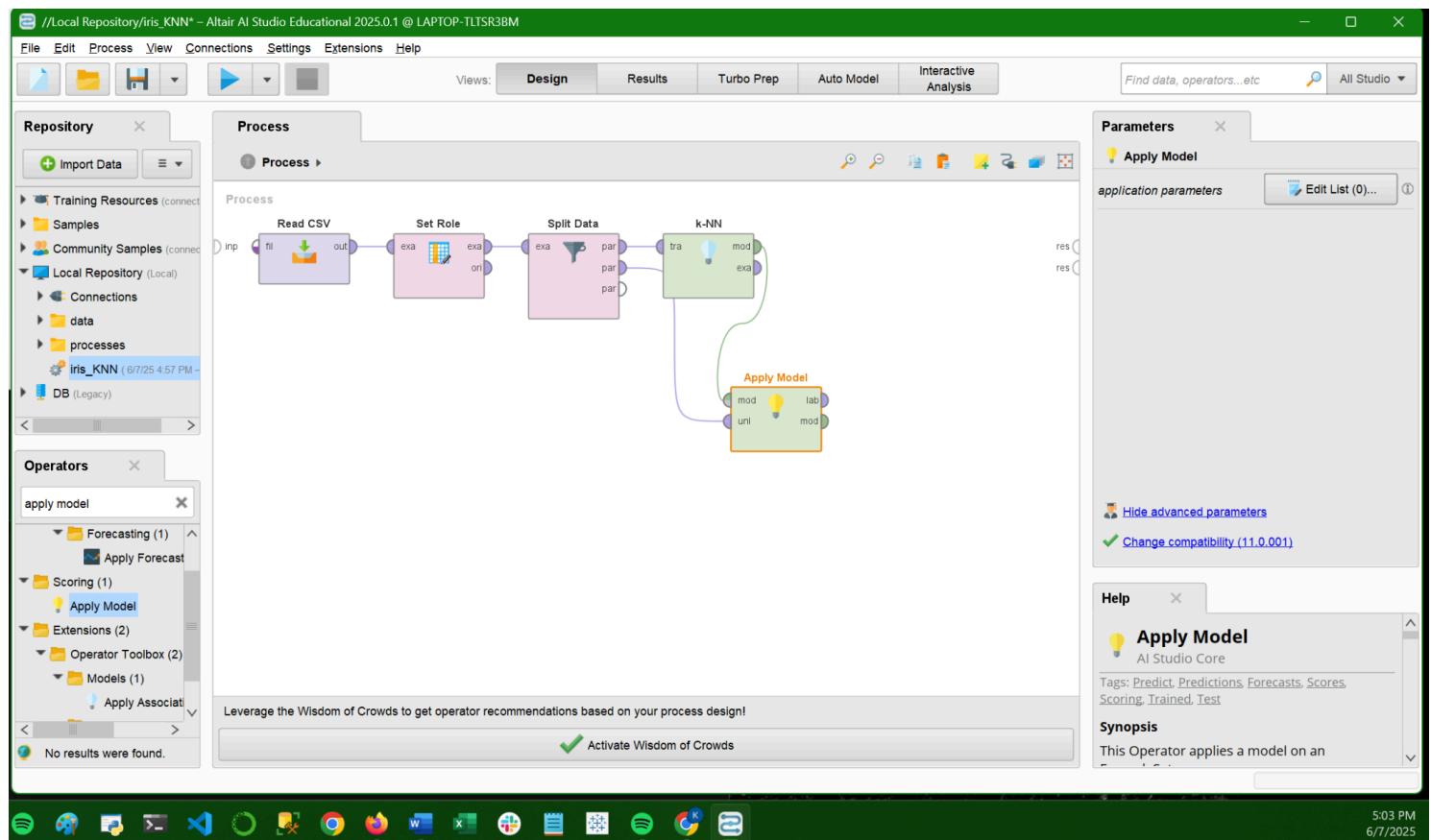
**k-NN**

Al Studio Core

Tags: Supervised, Classification, Regression, Model, Nearest, Neighbors, Neighbours, Knn, Instance-based, Instancebased, Similarity, Similarities, Euclidean, Distances, Lazy

**Synopsis**

5:02 PM 6/7/2025



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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

**Repository**

- Import Data
- Training Resources (connected)
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  - data
  - processes
  - iris\_KNN (6/7/25 4:57 PM - 7 kB)
- DB (Legacy)

**Process**

Process

```

graph LR
    ReadCSV[Read CSV] --> SetRole[Set Role]
    SetRole --> SplitData[Split Data]
    SplitData --> kNN[k-NN]
    kNN --> ApplyModel[Apply Model]
    ApplyModel --> Performance[Performance]
    
```

Parameters

|             |        |
|-------------|--------|
| Process     |        |
| verbosity   | init   |
| logfile     |        |
| resultfile  |        |
| random seed | 2001   |
| send mail   | never  |
| encoding    | SYSTEM |

Operators

performance

- Predictive (7)
  - Performance (Classification)
  - Performance (Binomial Classification)
  - Performance (Regression)
  - Performance (Costs)
  - Performance (Ranking)
  - Performance (Support Vector Classification)
  - Performance (Attribute Count)

No results were found.

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

Help

Process

AI Studio Core

Synopsis

The root operator of every process.

Description

5:05 PM  
6/7/2025

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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

**Result History**

**PerformanceVector (Performance)**

Criterion: accuracy

Table View Plot View

accuracy: 96.67%

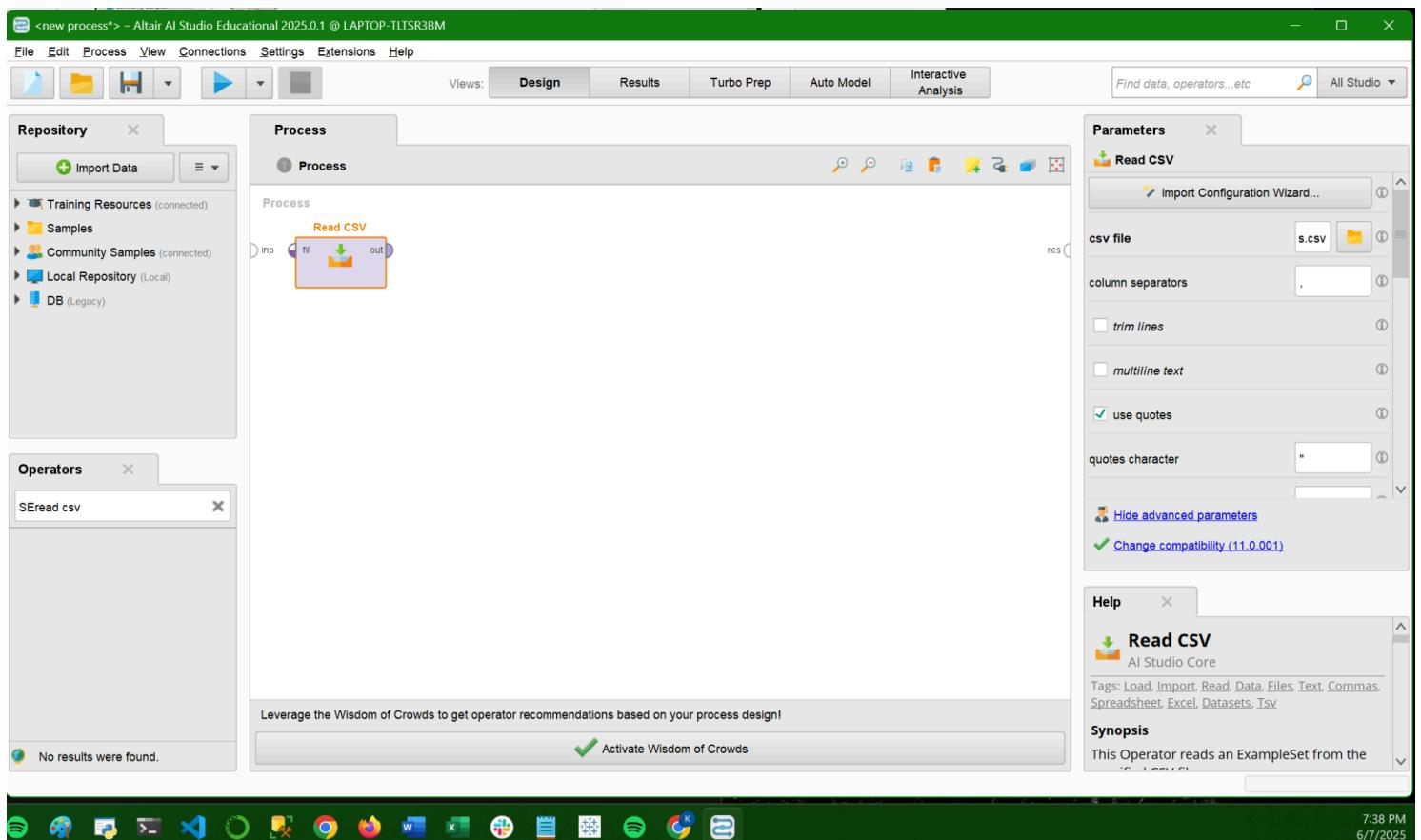
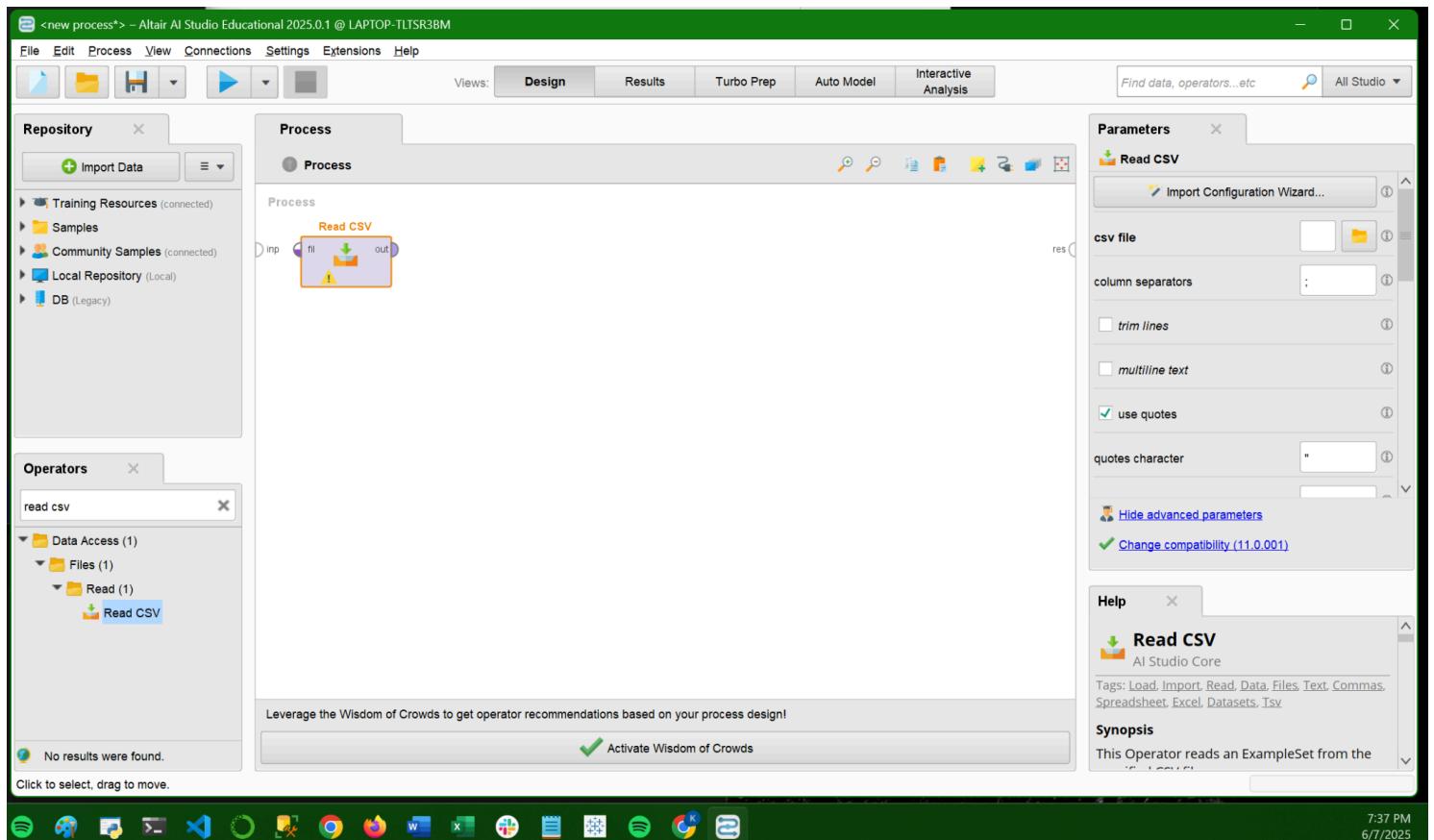
|                  | true setosa | true versicolor | true virginica | class precision |
|------------------|-------------|-----------------|----------------|-----------------|
| pred. setosa     | 10          | 0               | 0              | 100.00%         |
| pred. versicolor | 0           | 10              | 1              | 90.91%          |
| pred. virginica  | 0           | 0               | 9              | 100.00%         |
| class recall     | 100.00%     | 100.00%         | 90.00%         |                 |

**Repository**

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  - data
  - processes
  - iris\_KNN (6/7/25 4:57 PM - 7 kB)
- DB (Legacy)

5:05 PM  
6/7/2025

## k-Means Clustering - Unsupervised Learning method



**File Edit Process View Connections Settings Extensions Help**

**Views:** Design Results Turbo Prep Auto Model Interactive Analysis

**Repository**

- Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- Local Repository (Local)
- DB (Legacy)

**Process**

Process

```

graph LR
    A[Read CSV] --> B[Select Attributes]
    B --> C[Clustering]
  
```

**Operators**

Search for Operators

- Data Access (62)
- Blending (82)
- Cleansing (28)
- Modeling (169)
- Scoring (13)
- Validation (30)
- Utility (86)
- Deployment (1)

[Get more operators from the Marketplace](#)

**Parameters**

Select Attributes

Type: exclude attributes

Attribute filter type: one attribute

Select attribute: species

also apply to special attributes (id, label.)

**Help**

Select Attributes

Blending

Tags: Filter, Keep, Remove, Drop, Delete, Columns, Variables, Features, Feature Set, Selection

**Synopsis**

This Operator selects a subset of Attributes of

7:47 PM  
6/7/2025

**File Edit Process View Connections Settings Extensions Help**

**Views:** Design Results Turbo Prep Auto Model Interactive Analysis

**Repository**

- Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- Local Repository (Local)
- DB (Legacy)

**Process**

Process

```

graph LR
    A[Read CSV] --> B[Select Attributes]
    B --> C[Clustering]
  
```

**Operators**

clustering |

- Modeling (12)
  - Segmentation (12)
    - k-Means
    - k-Means (H2O)
    - k-Means (Kernel)
    - k-Means (fast)
    - X-Means
    - K-Means

We found "Information Selection" in the Marketplace. [Show me!](#)

Click to select, drag to move.

**Parameters**

Clustering (k-Means)

k: 3

max runs: 10

determine good start values

measure types: Bregman Divergence

divergence: Squared Euclidean

max optimization steps: 100

use local random seed

Hide advanced parameters

Change compatibility (11.0.001)

**Help**

k-Means

Concurrency

Tags: Unsupervised, Clustering, Segmentation, Grouping, Similarity, Similarities, Euclidean, Distances, Centroids, K Means, Kmeans, Kmeans

**Synopsis**

7:48 PM  
6/7/2025

**<new process\*> - Altair AI Studio Educational 2025.0.1 @ LAPTOP-TLTSR3BM**

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

**Repository**

+ Import Data

- Training Resources (connected)
- Samples
- Community Samples (connected)
- Local Repository (Local)
- DB (Legacy)

**Process**

Process

```
graph LR; A[Read CSV] --> B[Select Attributes]; B --> C[Clustering]
```

Read CSV → Select Attributes → Clustering

**Parameters**

Process

- logverbosity: init
- logfile:
- resultfile:
- random seed: 2001
- send mail: never
- encoding: SYSTEM

Hide advanced parameters

Change compatibility (11.0.001)

**Operators**

clustering I

Modeling (12)  
Segmentation (12)  
k-Means  
k-Means (H2O)  
k-Means (Kernel)  
k-Means (fast)  
X-Means  
k-Medoids

We found "Information Selection" in the Marketplace. Show me!

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

Help

Process  
AI Studio Core

Synopsis  
The root operator of every process.

Description

7:49 PM  
6/7/2025

File Edit Process View Connections Settings Extensions Help

Find data, operators...etc All Studio

Repository

+ Import Data

- Training Resources (connected)
- Samples
- Community Samples (connected)
- Local Repository (Local)
- DB (Legacy)

Design Results Turbo Prep Auto Model Interactive Analysis

7:49 PM  
6/7/2025

**<new process\*> - Altair AI Studio Educational 2025.0.1 @ LAPTOP-TLTSR3BM**

File Edit Process View Connections Settings Extensions Help

Find data, operators...etc All Studio

**Result History**

**Cluster Model (Clustering)**

## Cluster Model

Description

Cluster 0: 50 items  
Cluster 1: 39 items  
Cluster 2: 61 items  
Total number of items: 150

Folder View

Graph

Centroid Table

Plot

Annotations

Repository

+ Import Data

- Training Resources (connected)
- Samples
- Community Samples (connected)
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- DB (Legacy)

Design Results Turbo Prep Auto Model Interactive Analysis

Find data, operators...etc All Studio

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6/7/2025