



### Experiment - 3

Programme	: B.Tech. CSE	Semester	: Winter 2023-24
Course Title	: Internet of Things Lab	Code	: BECE352E
		Slot	: L23-24
Register Number	: 21BAI1106	Name	: Ojas Patil
Faculty (s)	: Dr. Manimaran P	Date	: 26 <sup>th</sup> Feb 2024

### AIM

To perform Sales Analytics by utilizing Data Preprocessing Techniques on the Kmine Analytics Platform.

### Steps to Follow

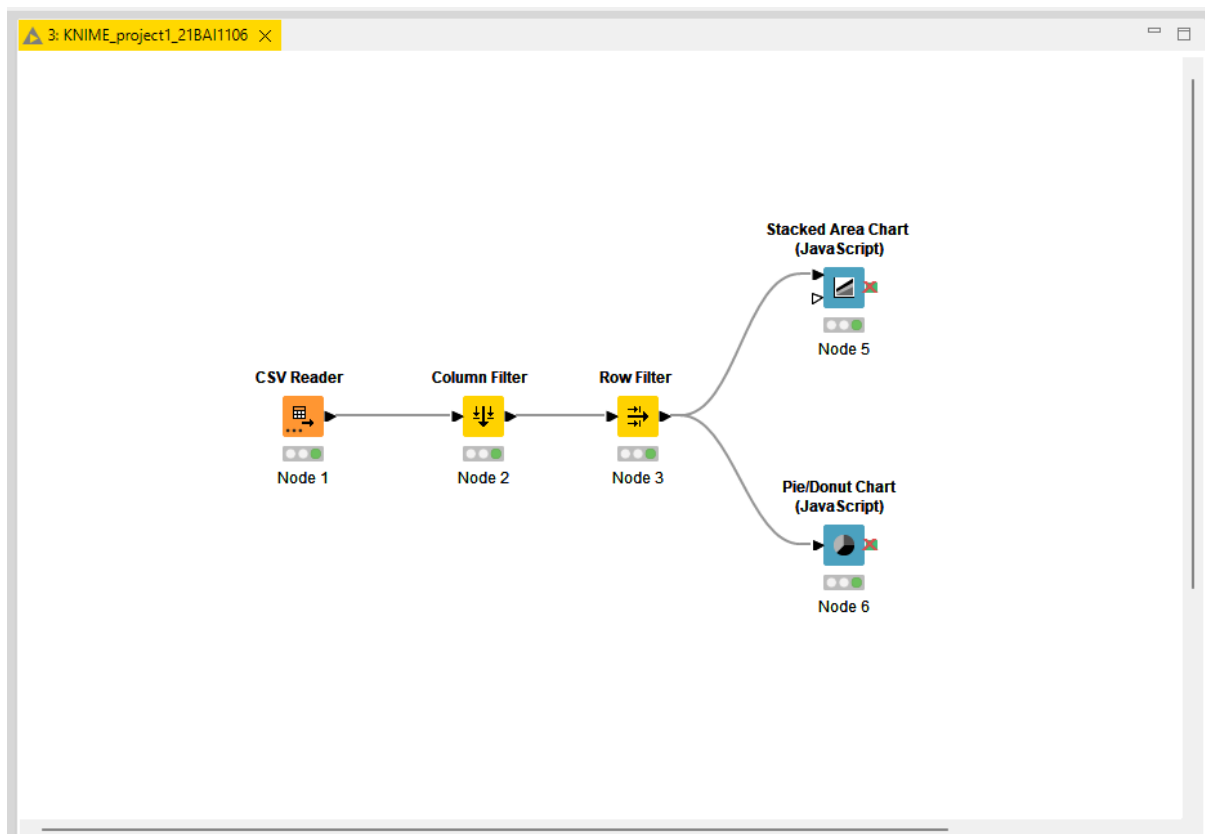
Import the Sales Dataset

1. Download and Launch the Kmine Analytics Application.
2. Download data and create new workflow.
3. Drag and drop CSV file into the workbench editor.
4. Filter data with the Column Filter node.
5. Exclude "unknown" values with the Row Filter node.
6. Visualize your data with Stacked Area Chart & Pie Chart.
7. Execute and open output visualization.

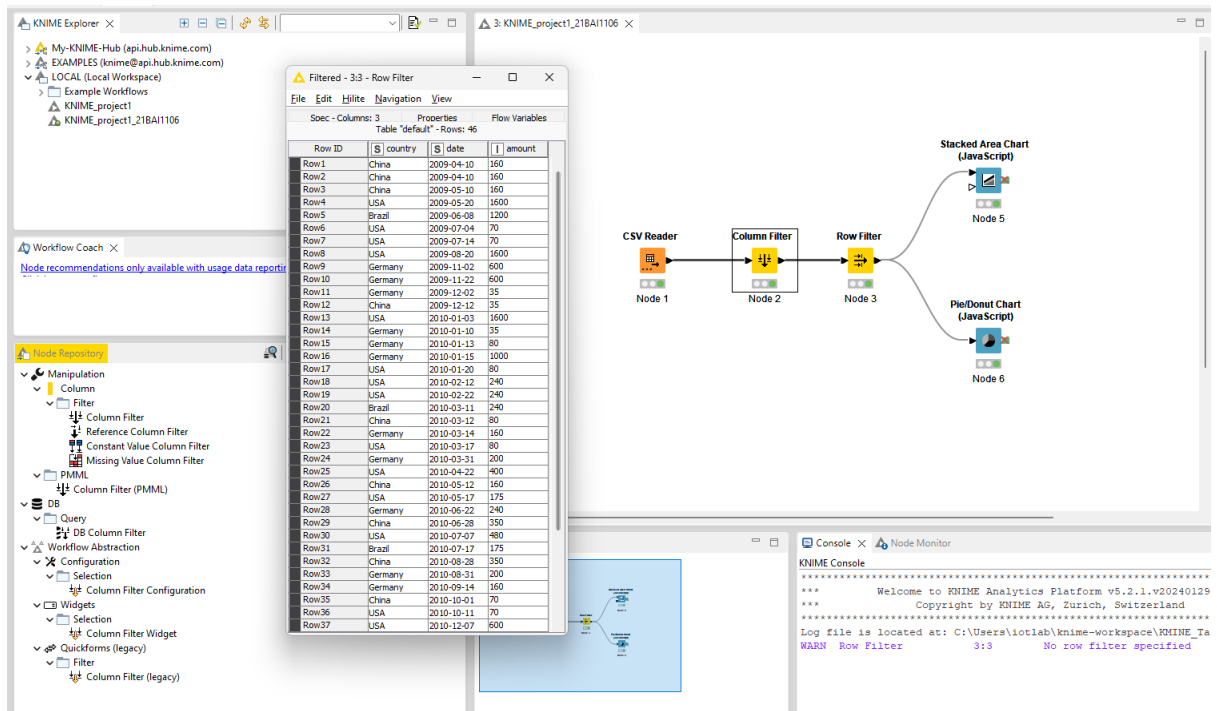
Now Import the Iris Dataset and perform the above operations.

## Workflow Screenshots

The screenshot displays the KNIME Analytics Platform interface. The main workspace shows a workflow with the following nodes: CSV Reader (Node 1), Column Filter (Node 2), Row Filter (Node 3), Stacked Area Chart (JavaScript) (Node 5), and Pie/Donut Chart (JavaScript) (Node 6). The workflow is connected as follows: CSV Reader (Node 1) → Column Filter (Node 2) → Row Filter (Node 3) → Stacked Area Chart (Node 5) and Pie/Donut Chart (Node 6). The left sidebar contains the Node Explorer, Workflow Coach, and Node Repository. The right sidebar shows the Description panel for the project 'KNIME\_project1\_21BA11106', which includes fields for Description, Tags, Links, Creation Date (2024-2-22), and Author (lotlab). The bottom status bar shows the system clock and network status.



## Row Filter and Column Filter



KNIME Explorer

My-KNIME-Hub (api.hub.knime.com)  
EXAMPLES (knime@api.hub.knime.com)  
LOCAL (Local Workspace)  
Example Workflows  
KNIME\_project1  
KNIME\_project1\_21BA1106

Workflow Coach  
Node recommendations only available with usage data reporting

Node Repository

- Manipulation
  - Column
    - Filter
      - Column Filter
      - Reference Column Filter
      - Constant Value Column Filter
      - Missing Value Column Filter
- PMML
  - Column Filter (PMML)
- DB
  - Query
    - DB Column Filter
- Workflow Abstraction
  - Configuration
    - Selection
      - Column Filter Configuration
- Widgets
  - Selection
    - Column Filter Widget
- Quickforms (legacy)
  - Filter
    - Column Filter (legacy)

Filtered - 3:3 - Row Filter

File Edit Hilt Navigation View

Soec - Columns: 3 Properties Table "default" - Rows: 46 Flow Variables

Row ID	country	date	amount
Row1	China	2009-04-10	160
Row2	China	2009-04-10	160
Row3	China	2009-05-10	160
Row4	USA	2009-05-20	1600
Row5	Brazil	2009-06-08	1200
Row6	USA	2009-07-04	70
Row7	USA	2009-07-14	70
Row8	USA	2009-08-20	1600
Row9	Germany	2009-11-02	600
Row10	Germany	2009-11-22	600
Row11	Germany	2009-12-02	35
Row12	China	2009-12-12	35
Row13	USA	2010-01-03	1600
Row14	Germany	2010-01-10	35
Row15	Germany	2010-01-13	80
Row16	Germany	2010-01-15	1000
Row17	USA	2010-01-20	80
Row18	USA	2010-02-12	240
Row19	USA	2010-02-22	240
Row20	Brazil	2010-03-11	240
Row21	China	2010-03-12	80
Row22	Germany	2010-03-14	160
Row23	USA	2010-03-17	80
Row24	Germany	2010-03-31	200
Row25	USA	2010-04-22	400
Row26	China	2010-05-12	160
Row27	USA	2010-05-17	175
Row28	Germany	2010-06-22	240
Row29	China	2010-06-28	350
Row30	USA	2010-07-07	480
Row31	Brazil	2010-07-17	175
Row32	China	2010-08-28	350
Row33	Germany	2010-08-31	200
Row34	Germany	2010-09-14	160
Row35	China	2010-10-01	70
Row36	USA	2010-10-11	70
Row37	USA	2010-12-07	600

CSV Reader Node 1

Column Filter Node 2

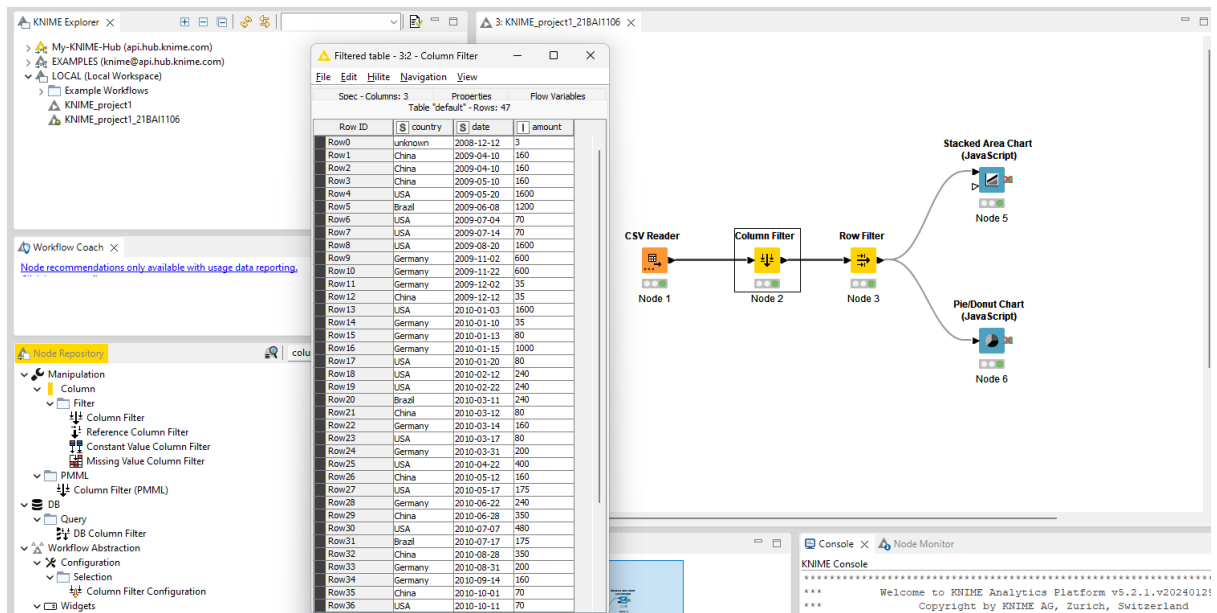
Row Filter Node 3

Stacked Area Chart (JavaScript) Node 5

Pie/Donut Chart (JavaScript) Node 6

KNIME Console

```
*****
*** Welcome to KNIME Analytics Platform v5.2.1.v20240129
*** Copyright by KNIME AG, Zurich, Switzerland
*****
Log file is located at: C:\Users\lotlab\knime-workspace\KNIME_Ta
WARN Row Filter 3:3 No row filter specified
```



KNIME Explorer

My-KNIME-Hub (api.hub.knime.com)  
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Node Repository

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      - Column Filter Configuration
- Widgets
  - Selection
    - Column Filter Widget
- Quickforms (legacy)
  - Filter
    - Column Filter (legacy)

Filtered table - 3:2 - Column Filter

File Edit Hilt Navigation View

Soec - Columns: 3 Properties Table "default" - Rows: 47 Flow Variables

Row ID	country	date	amount
Row0	unknown	2008-12-12	3
Row1	China	2009-04-10	160
Row2	China	2009-04-10	160
Row3	China	2009-05-10	160
Row4	USA	2009-05-20	1600
Row5	Brazil	2009-06-08	1200
Row6	USA	2009-07-04	70
Row7	USA	2009-07-14	70
Row8	USA	2009-08-20	1600
Row9	Germany	2009-11-02	600
Row10	Germany	2009-11-22	600
Row11	Germany	2009-12-02	35
Row12	China	2009-12-12	35
Row13	USA	2010-01-03	1600
Row14	Germany	2010-01-10	35
Row15	Germany	2010-01-13	80
Row16	Germany	2010-01-15	1000
Row17	USA	2010-01-20	80
Row18	USA	2010-02-12	240
Row19	USA	2010-02-22	240
Row20	Brazil	2010-03-11	240
Row21	China	2010-03-12	80
Row22	Germany	2010-03-14	160
Row23	USA	2010-03-17	80
Row24	Germany	2010-03-31	200
Row25	USA	2010-04-22	400
Row26	China	2010-05-12	160
Row27	USA	2010-05-17	175
Row28	Germany	2010-06-22	240
Row29	China	2010-06-28	350
Row30	USA	2010-07-07	480
Row31	Brazil	2010-07-17	175
Row32	China	2010-08-28	350
Row33	Germany	2010-08-31	200
Row34	Germany	2010-09-14	160
Row35	China	2010-10-01	70
Row36	USA	2010-10-11	70

CSV Reader Node 1

Column Filter Node 2

Row Filter Node 3

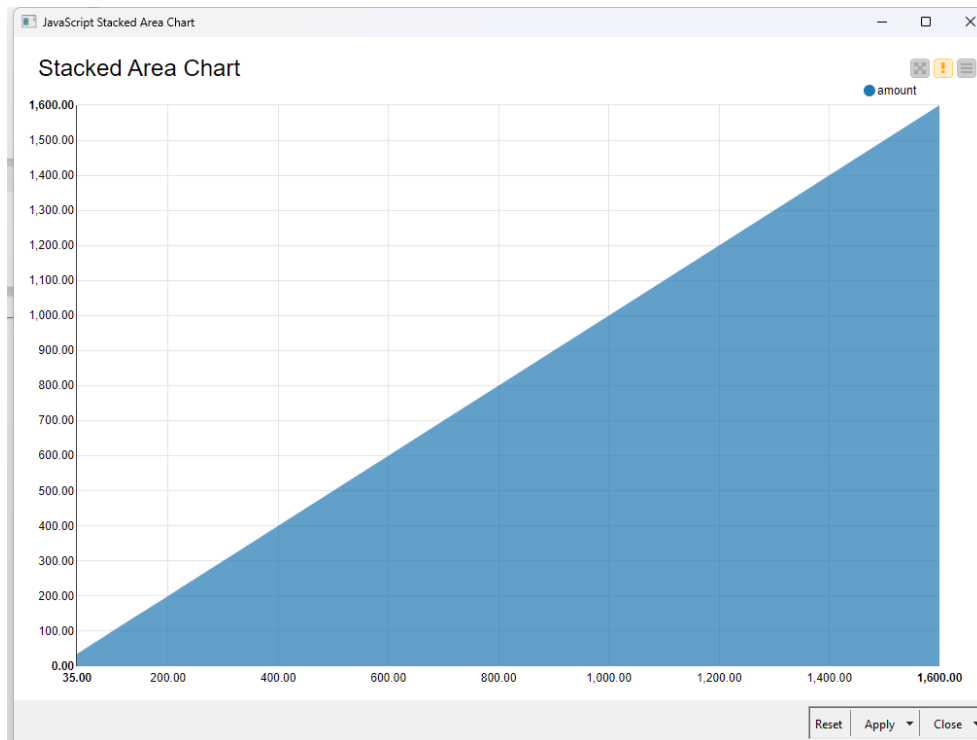
Stacked Area Chart (JavaScript) Node 5

Pie/Donut Chart (JavaScript) Node 6

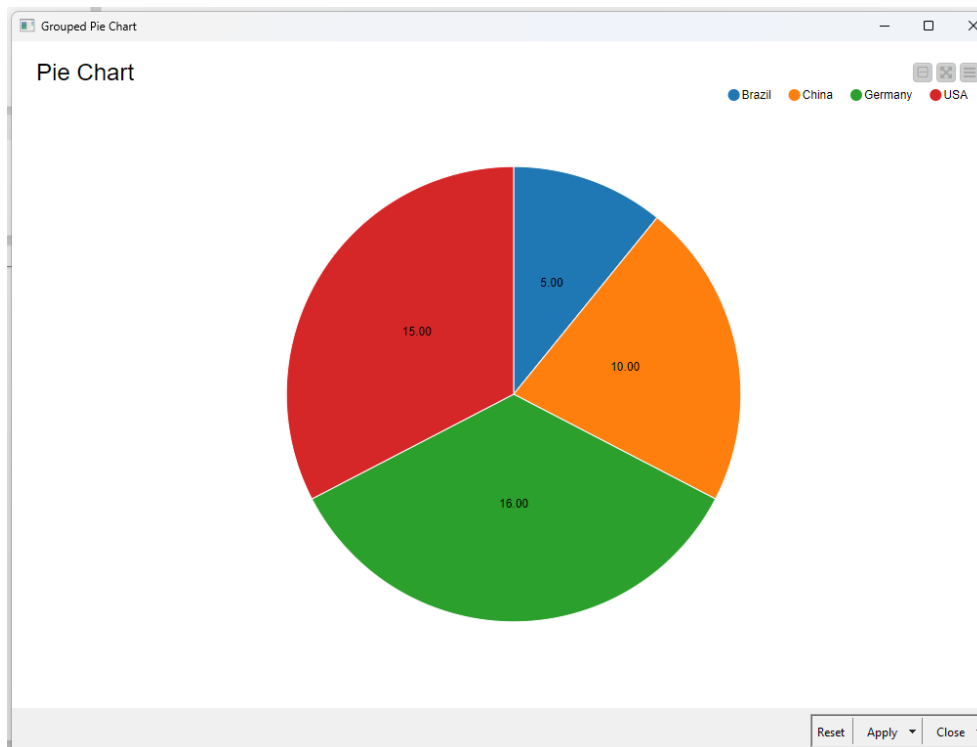
KNIME Console

```
*****
*** Welcome to KNIME Analytics Platform v5.2.1.v20240129
*** Copyright by KNIME AG, Zurich, Switzerland
*****
```

## Lets Visualize the data using a Stacked Area Chart



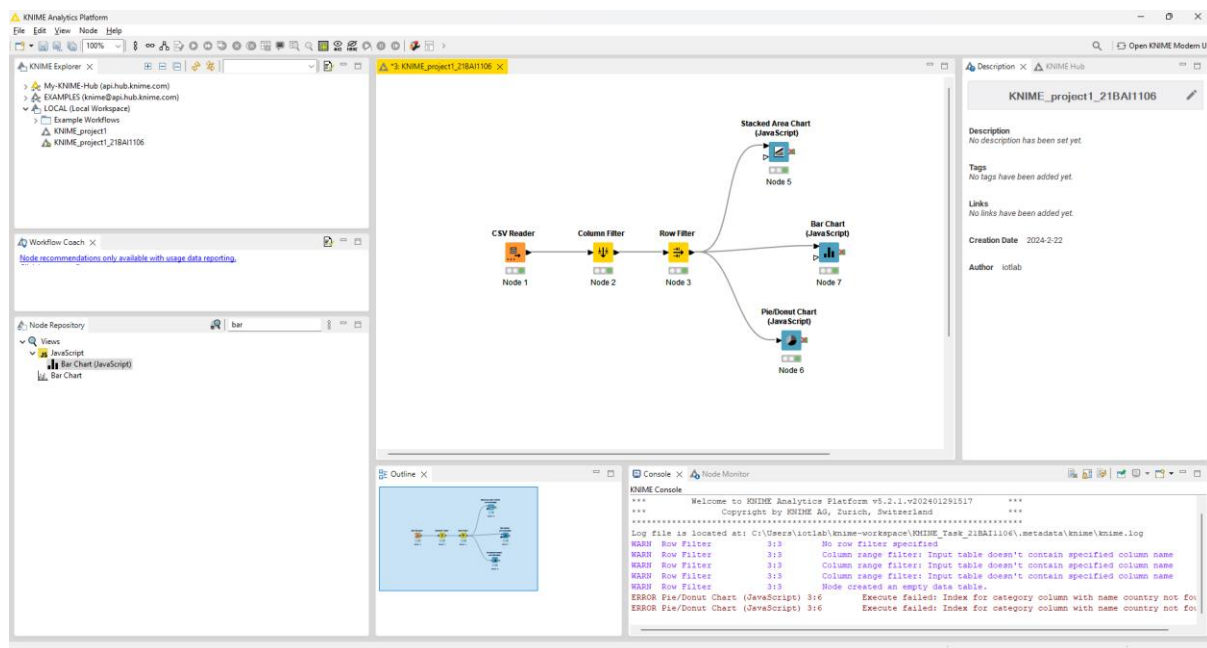
## Lets now visualize the data using a Pie Chart



## IRIS DATASET – Overview

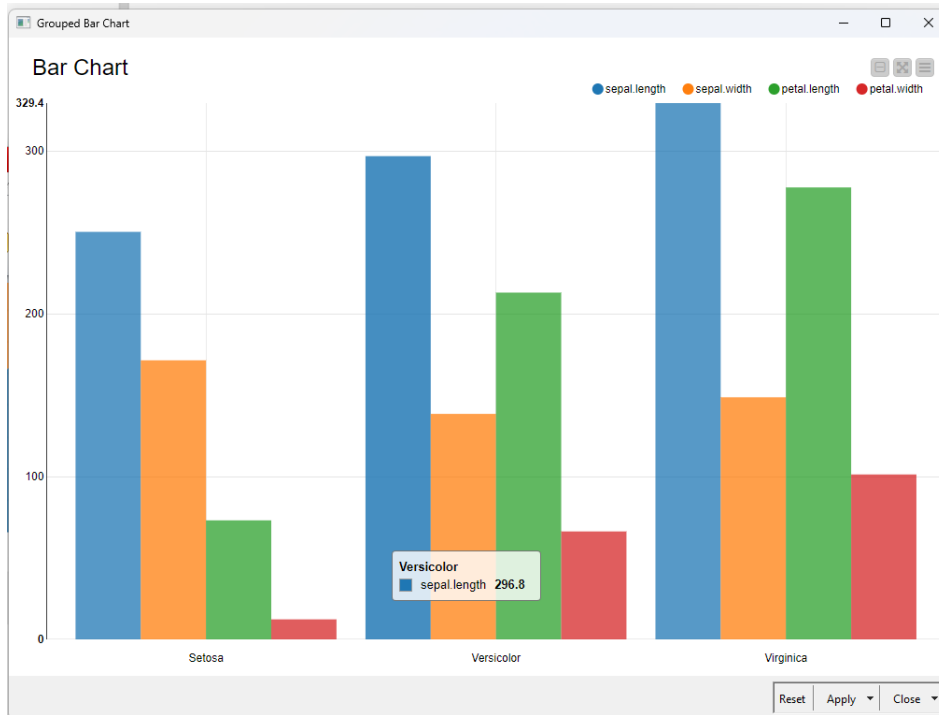
	sepal.length	sepal.width	petal.length	petal.width	variety
0	5.1	3.5	1.4	0.2	Setosa
1	4.9	3.0	1.4	0.2	Setosa
2	4.7	3.2	1.3	0.2	Setosa
3	4.6	3.1	1.5	0.2	Setosa
4	5.0	3.6	1.4	0.2	Setosa

## Workflow

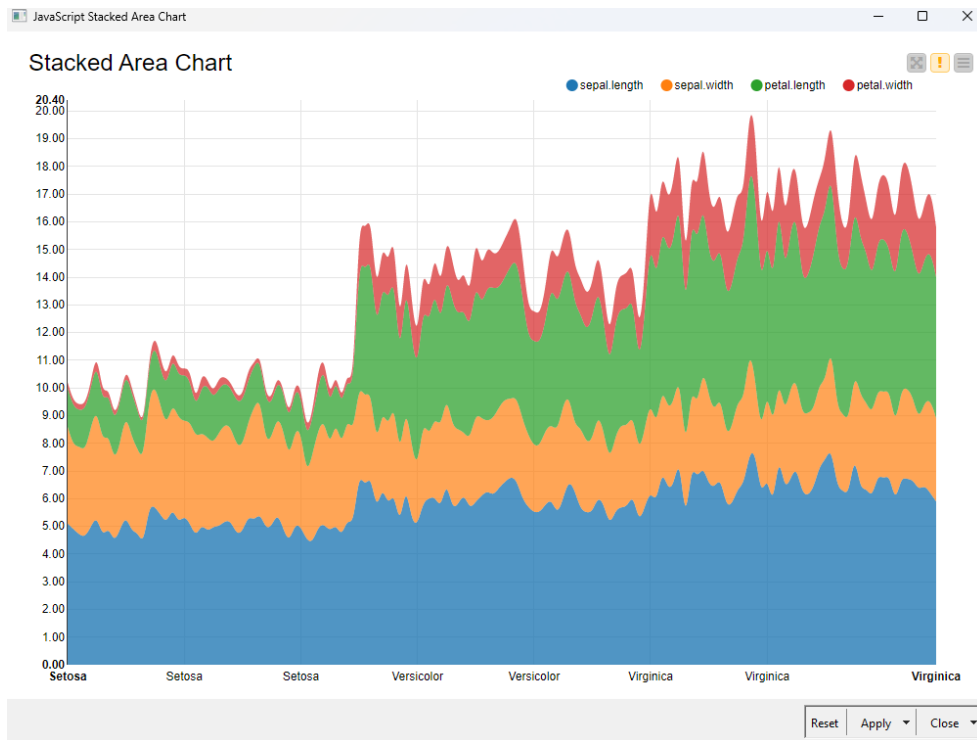


After Applying all the filters, lets visualize the data using a Bar Chart, Stacked Area Chart and a Pie Chart.

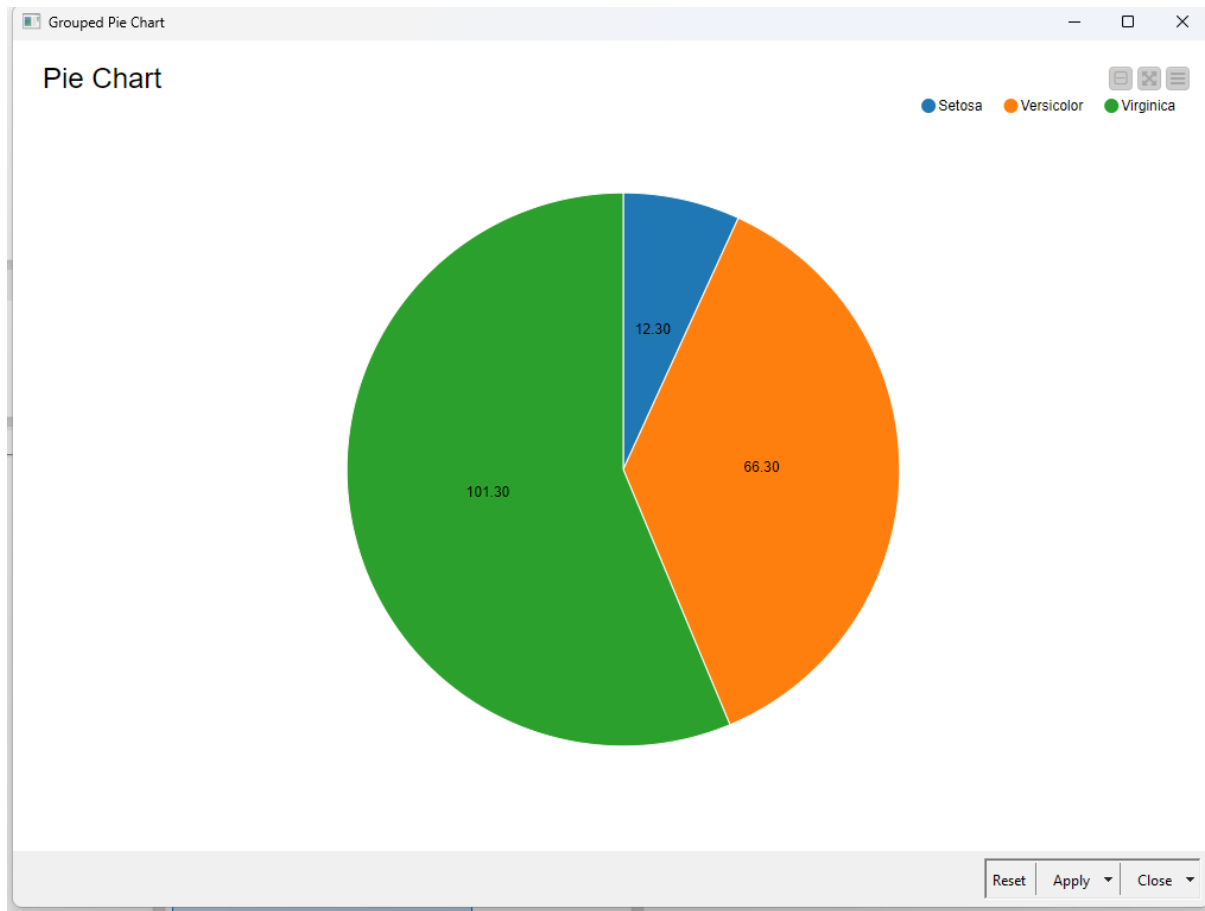
## Visualizing the data by comparing values using Bar Charts



## Now, let's visualize the data using Stacked Area Chart



Finally, lets view the percent of varieties present using a Pie Chart



## Results

Thus, we have performed data analytics on the Sales and Iris Datasets with the help of the Knime Application.