



Using Jupyter Notebook within ConverSight

Unleashing the Power of AI and ML with a Collaborative
and Flexible Platform.

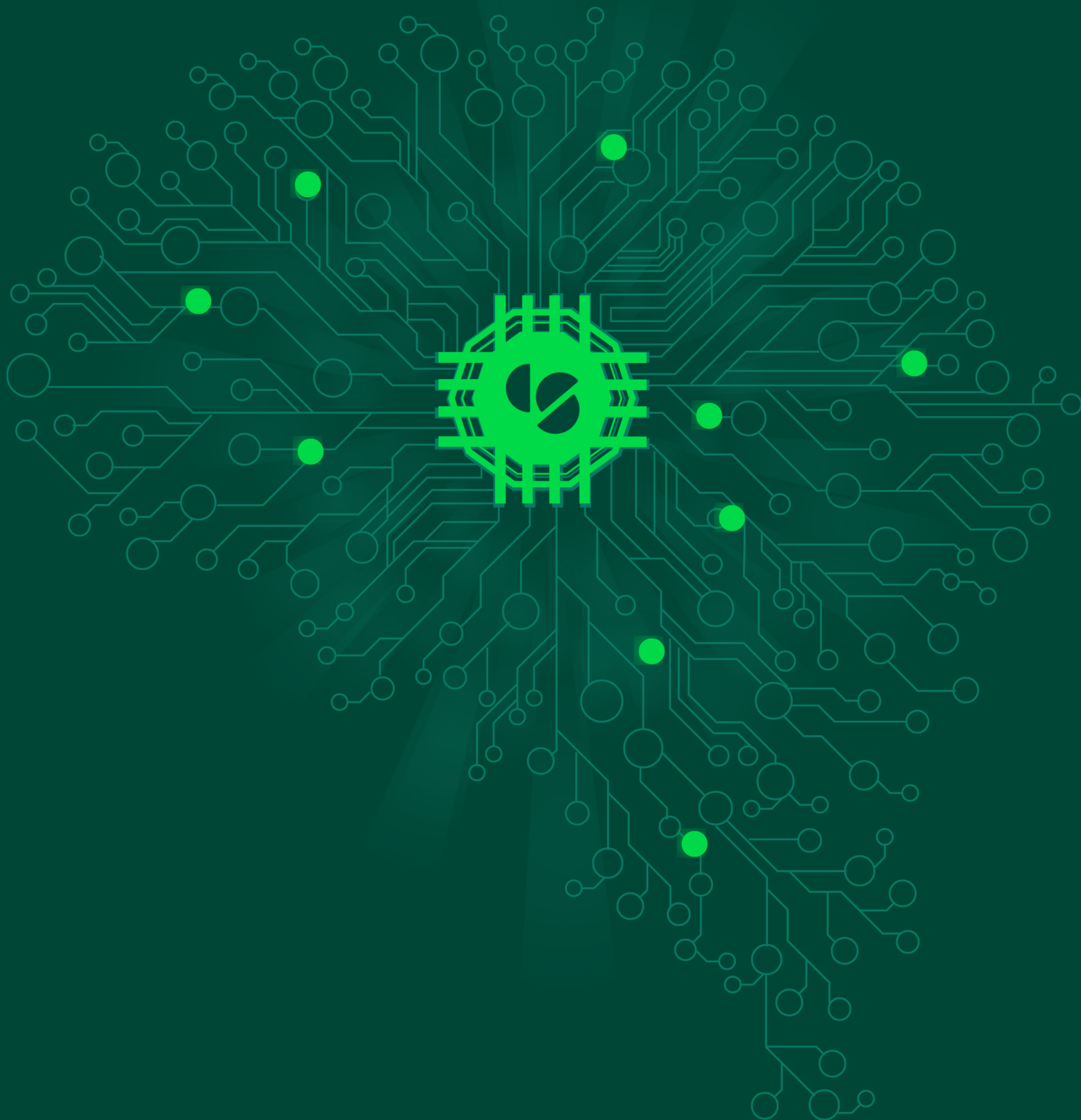




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I. Introduction

Jupyter Notebook is a popular web-based platform for data science and machine learning within the ConverSight platform. With Jupyter Notebook, you can easily create and run code, explore, manipulate data and share your results with others.

ConverSight provides a rich and interactive environment for users to utilize the Jupyter Notebook efficiently. Users can effortlessly explore and analyze data using Python, making it an ideal solution for interactive data analysis.

The platform also allows for collaboration and replicability, enabling users to share and reproduce or replicate their work, ensuring the accuracy and validity of the analysis. With the hassle-free accessibility of Jupyter Notebook in ConverSight, it offers a user-friendly and convenient platform for all data science and machine learning needs.

This datasheet provides a comprehensive guide to using Jupyter Notebook within ConverSight, starting with an introduction to its features and technicalities, followed by a step-by-step guide on how to get started and navigate its user interface. You will also learn how to collaborate with others through co-authoring and debugging and discover diverse applications for data analysis and sharing notebooks with peers. So, let's dive in and discover the potential of Jupyter Notebook within the ConverSight platform.



1.1 What is Jupyter Notebook?

Notebook serves as a foundation for all the other components in AI Workbench. The Notebook directs users to the Jupyter Notebook server providing a rich and interactive web-based platform for data science and machine learning. Notebook provides an efficient solution for running code that requires significant resources as it is already set up in the platform.



1.2 Why use Jupyter Notebook?

1.2.1 Interactive Data Analysis

Jupyter Notebook within ConverSight provides a versatile solution for data analysis and machine learning. This feature-rich platform is well-suited for performing intricate data analysis and machine learning tasks in ConverSight.

1.2.2 Collaboration

Jupyter Notebook makes it easy to collaborate with other users by allowing them to share Notebooks and work on them simultaneously. This can be especially useful when working on large-scale projects with multiple team members.

1.2.3 Replicability

Jupyter Notebook allows users to document and reproduce their work by providing a record of their code, visualizations and results. This can help ensure the accuracy and validity of the analysis and make it easier for others to understand and build upon the work.

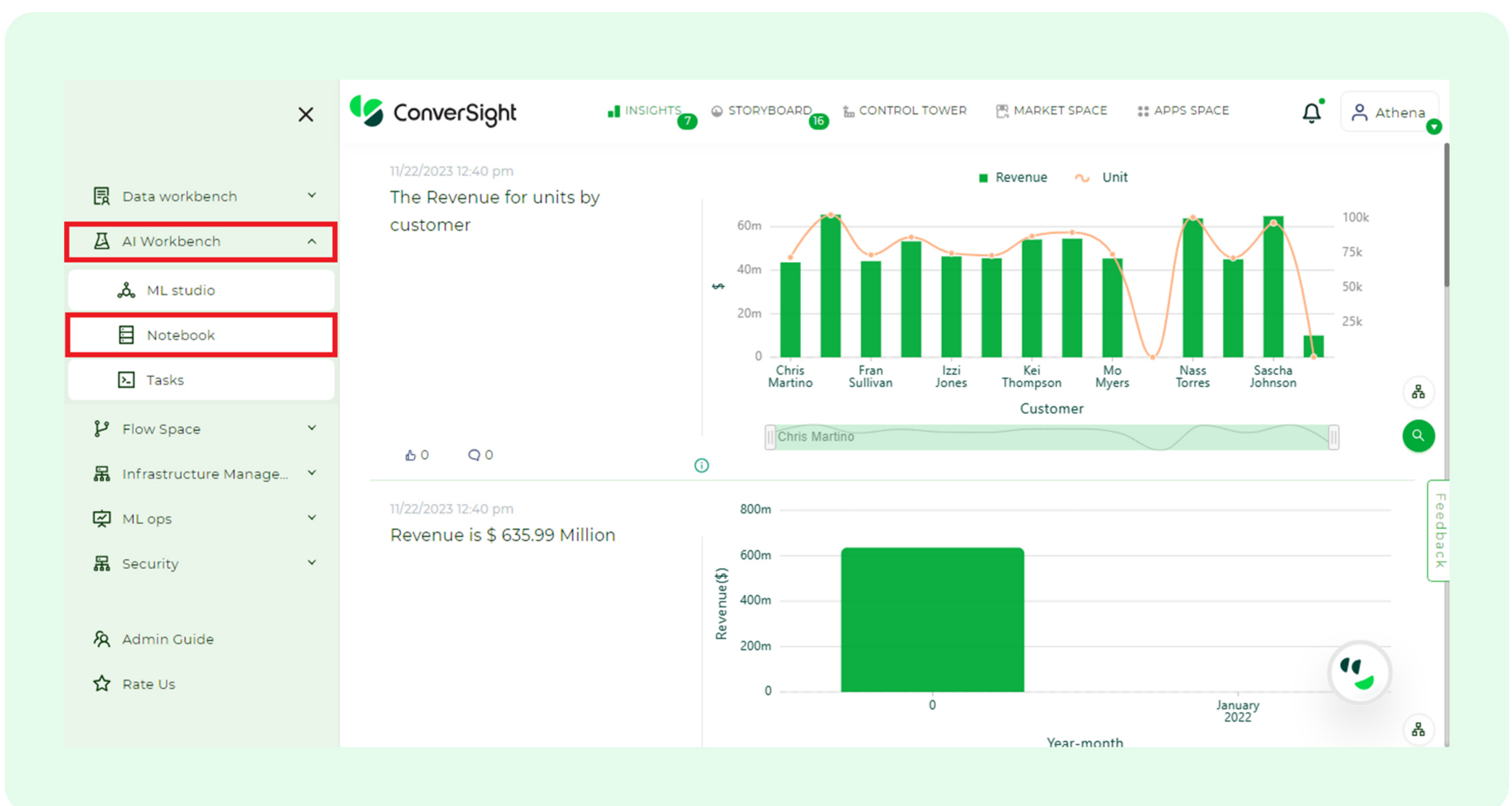
1.3 Types of Notebook in ConverSight

Accessing Jupyter Notebook in ConverSight is easy and hassle-free, eliminating the need for users to install it from scratch. To launch Jupyter Notebook, users can navigate to the configuration sidebar in AI Workbench and select the **'Notebook'** option.

ConverSight provides two default Base Notebooks: the Standard ConverSight Notebook and the Machine Learning Notebook.

Standard ConverSight Notebook : The Standard ConverSight Notebook serves as a foundational tool, encompassing essential packages for executing tasks, flows, CS App and conducting fundamental analytical operations.

Machine Learning Notebook : The Machine Learning Notebook is specifically crafted to empower users with an extensive set of packages catering to the intricate requirements of machine learning and advanced analytics.



Note

Editing or deleting a default Standard ConverSight Notebook and Machine Learning Notebook is restricted.

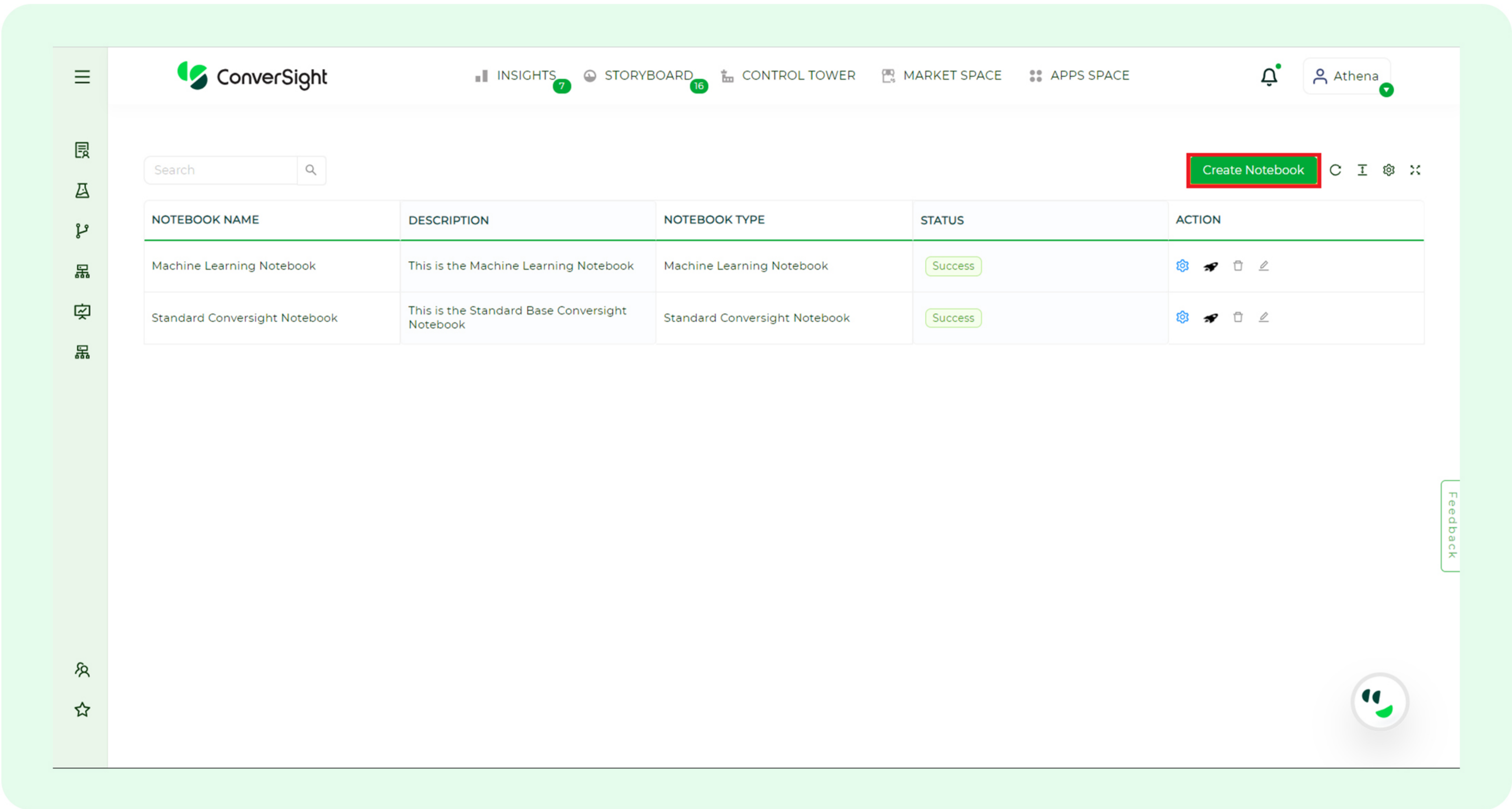


1.4 Custom Notebook

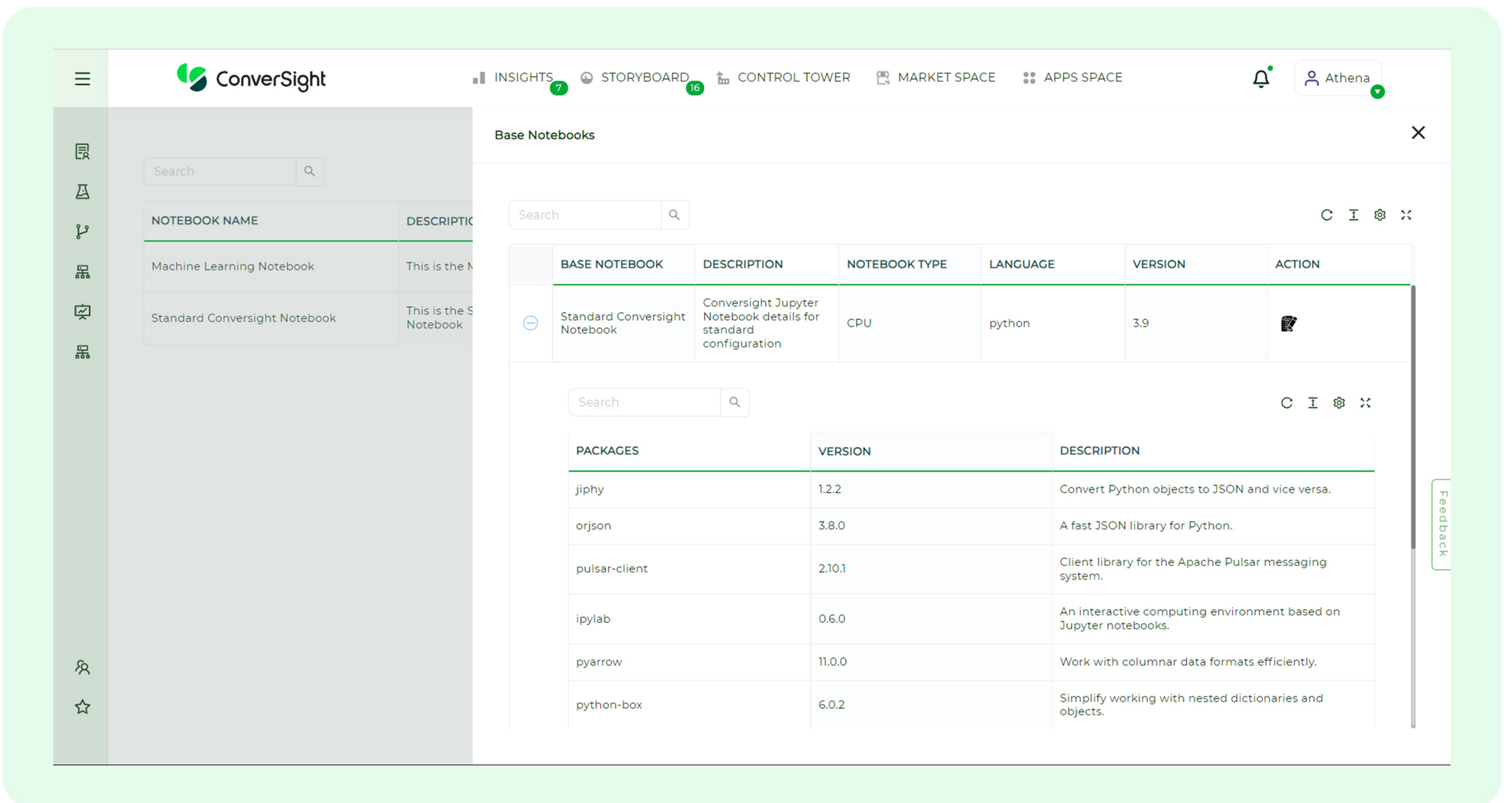
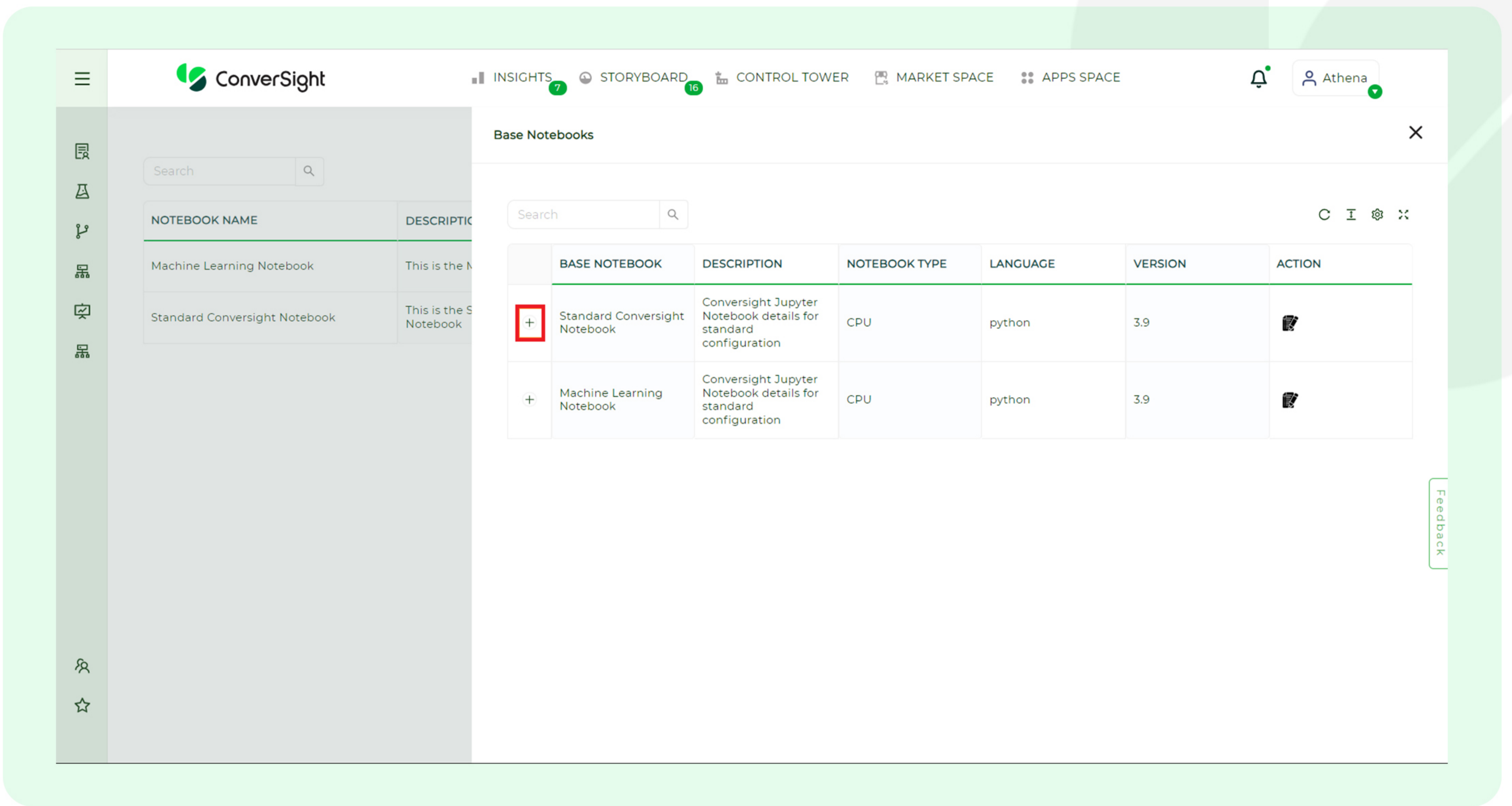
Custom Notebook is created by integrating a custom package or a ConverSight verified package into the Standard ConverSight Notebook, resulting in the creation of a custom Standard ConverSight Notebook. Likewise, incorporating custom packages into the Machine Learning Notebook facilitates the development of a customized Machine Learning Notebook, catering to specific requirements.

Creating Custom Notebook

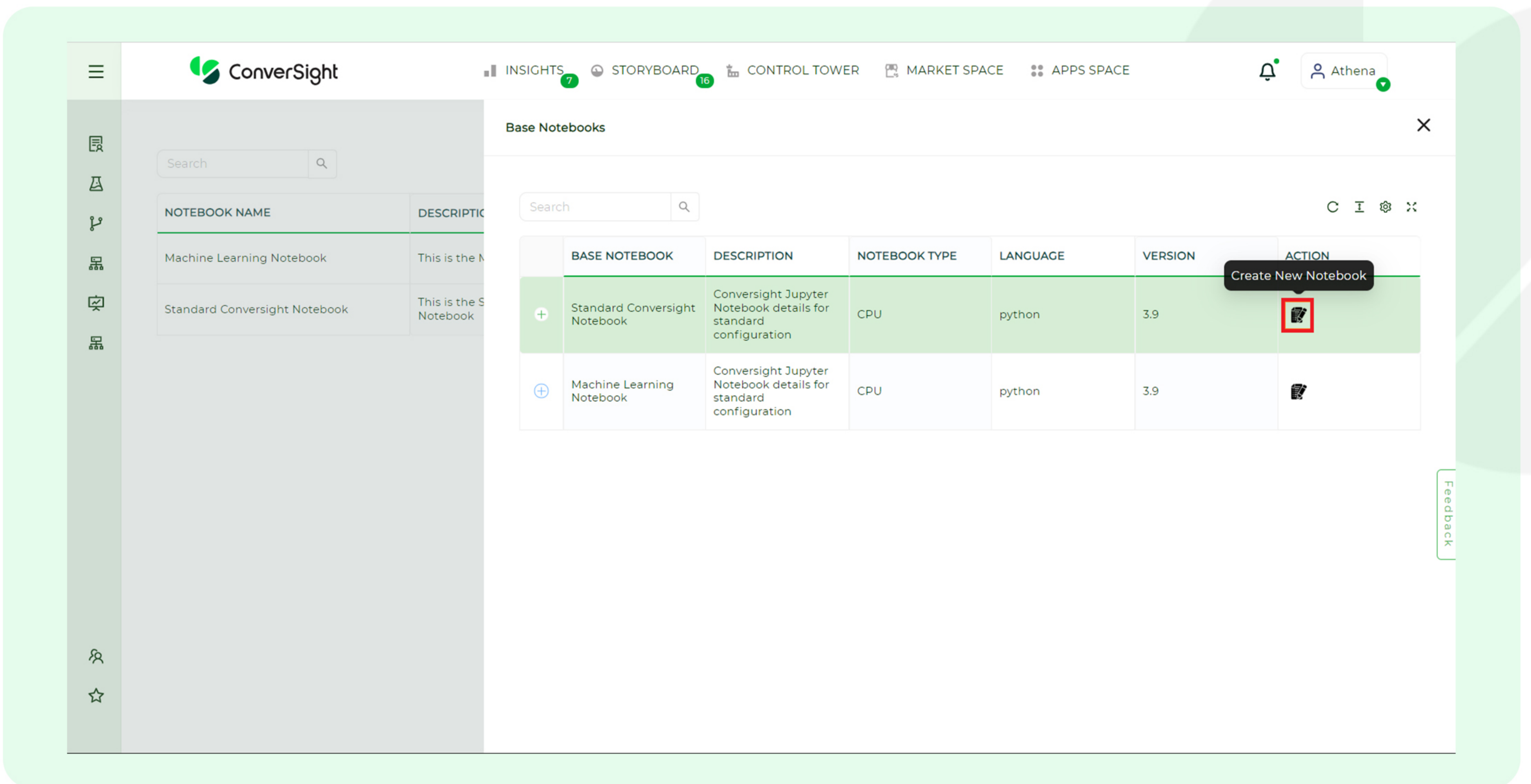
To access Notebook in the ConverSight platform, navigate to the Configuration section and choose **'Notebook'** under **'AI Workbench'**. On the Notebook Configuration page, simply click on the **'Create Notebook'** button to create a Custom Notebook.



In the Base Notebooks tab, Clicking the **'+'** icon reveals a list of packages, its descriptions and versions available in the Base Notebook.



Select the 'Create New Notebook' icon located under the Action column of the desired Base Notebook.



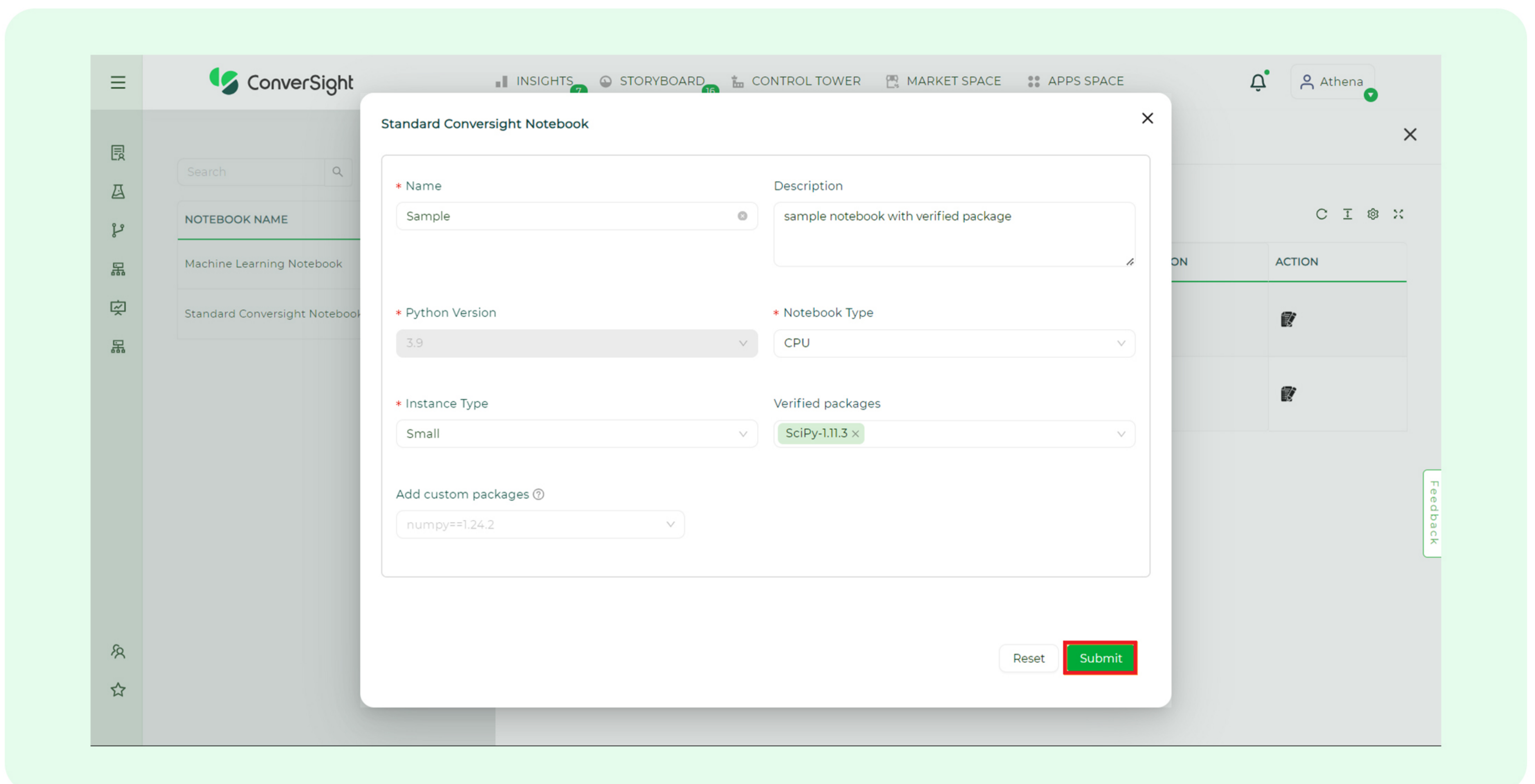
Specify the requirements for your Custom Notebook.

REQUIREMENT	DESCRIPTION
Name	Provide a name for your Custom Notebook.
Description	Offering a description enhances comprehension and provides additional details about the Notebook. Providing a description is optional.
Python Version	By default, the Python Version is set to the latest version.
Notebook Type	Presently, ConverseSight provides Notebooks with CPU capability. Additional types of Notebooks may be introduced in the future.
Instance Type	Depending on memory space needs and instance storage needs, users can opt for different instance types categorized as small, medium, large or extra-large.
Verified Packages	The Verified Packages dropdown includes all packages approved by ConverseSight, ensuring their suitability for use in Notebooks.
Add Custom Packages	You can include either the latest version of a package or a specific version by specifying the version number. Downgrading the packages in the Notebook is not permissible. Only upgrading the existing packages is allowed.

Note

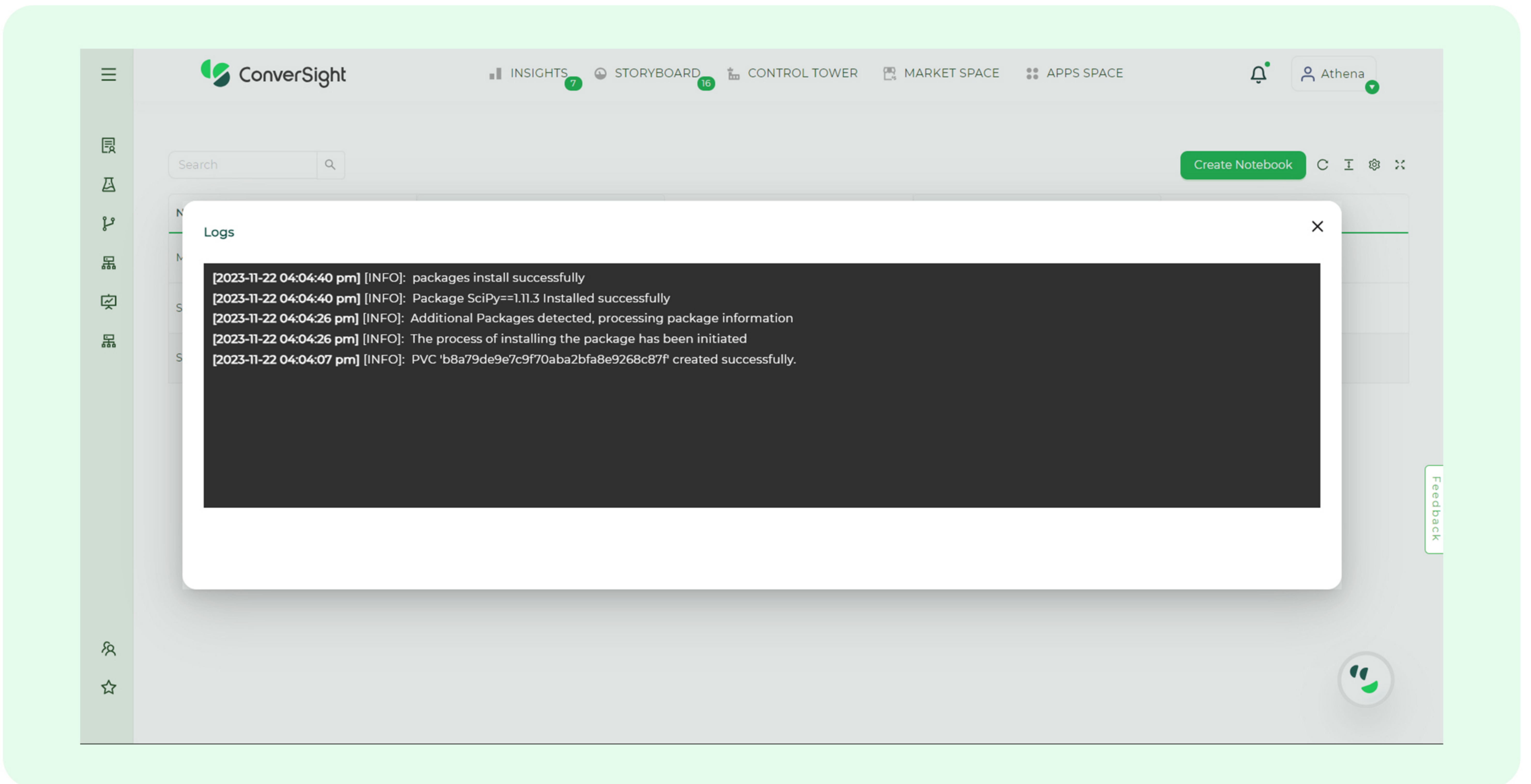
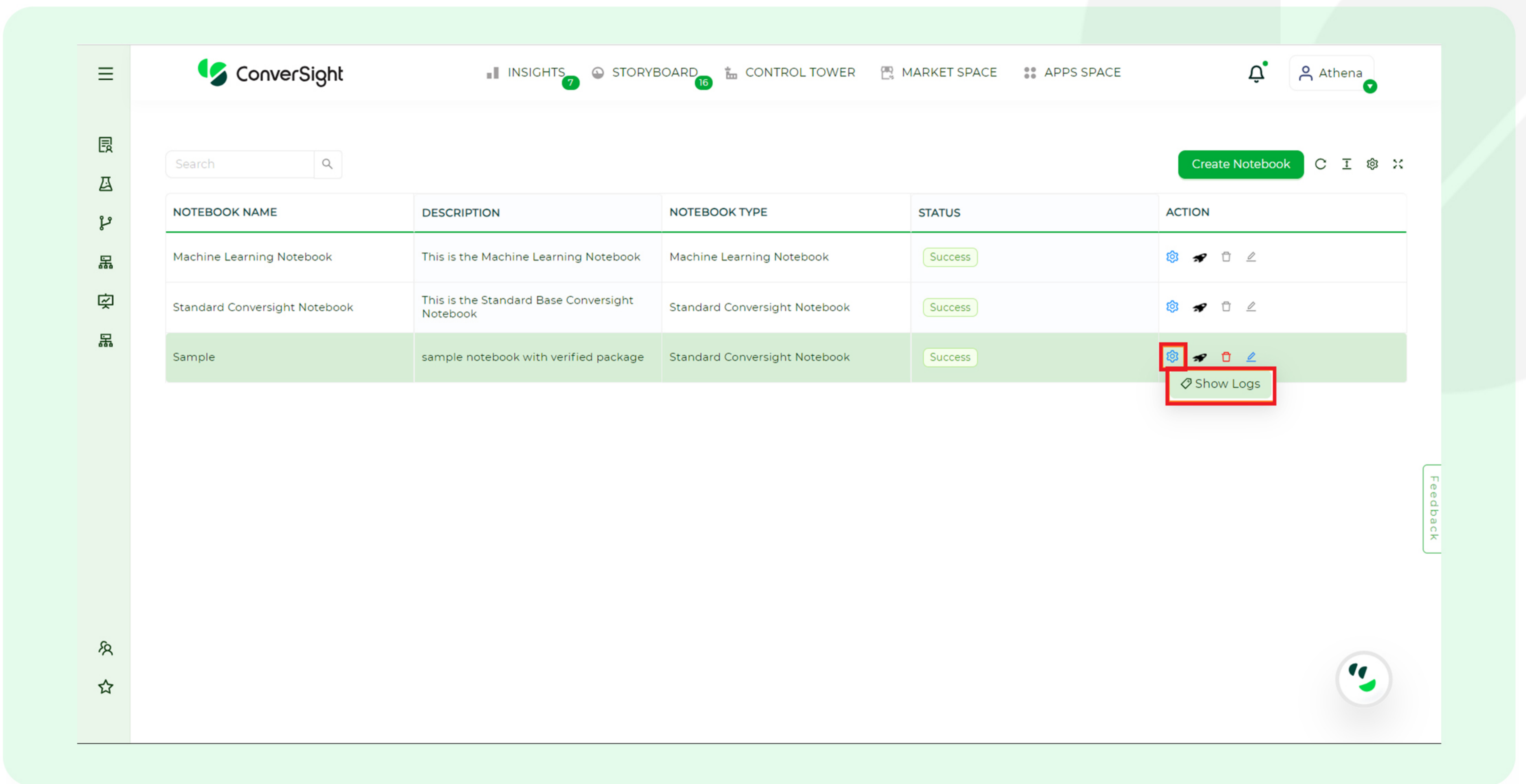
Adding at least one verified package or one custom package is a mandatory requirement to create a Custom Notebook.

Once you have provided the necessary specifications, click on the **'Submit'** button. After clicking the Submit button, the new Notebook with your specified configurations will be saved successfully.



Show Logs

To access the creation logs of a notebook, click on the **'Settings'** icon in the Action column for the specific notebook and then select the Show Logs option.



2. Understanding User Interface

Menu Bar

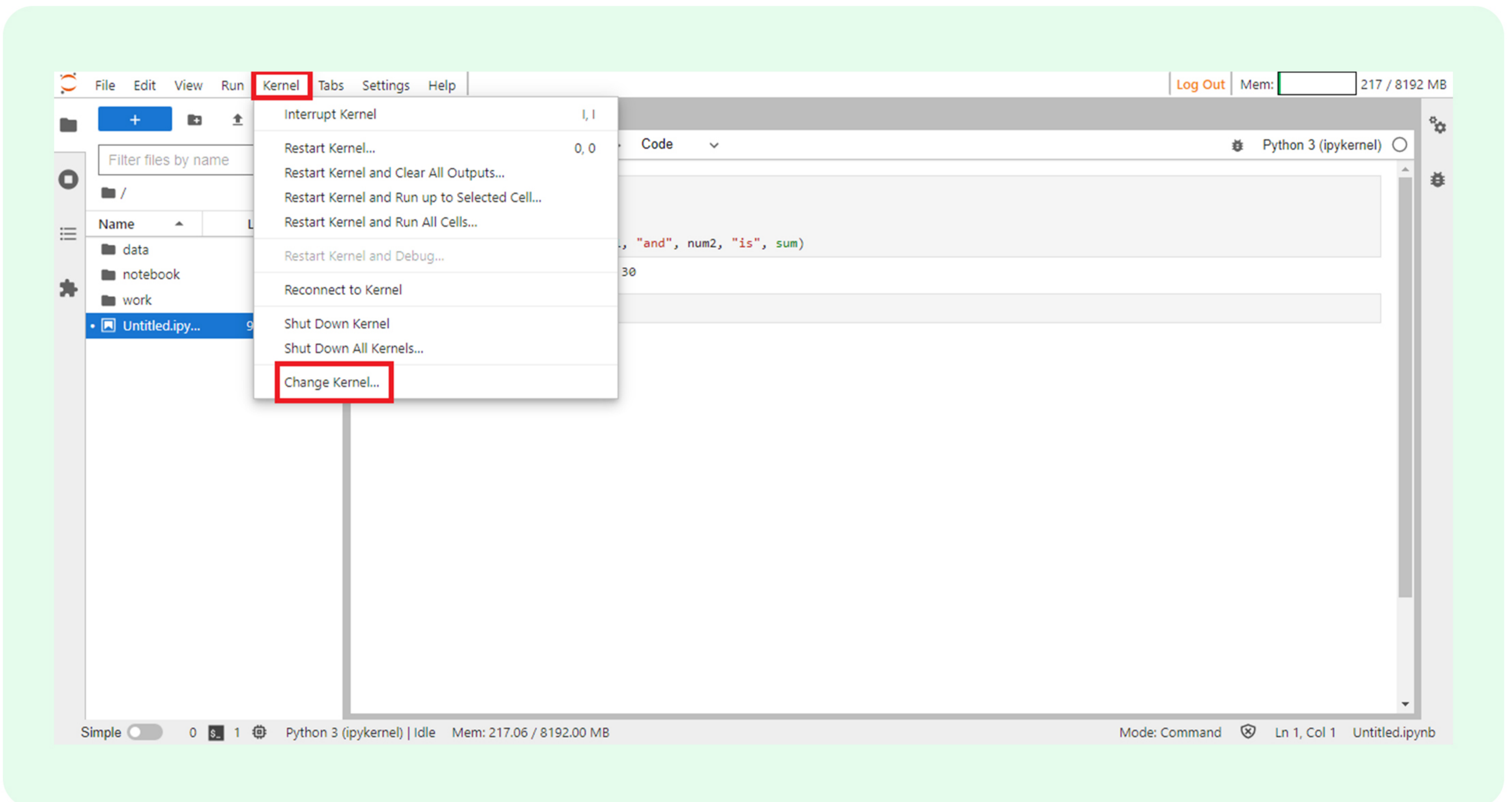
The menu bar is located at the top of the Notebook interface and contains various menu items to perform different tasks such as opening a new Notebook, saving your work and running code.

Notebook Cells and Types

A Notebook consists of one or more cells, which can contain either code or text. Each cell in a Jupyter Notebook can be of different types like Code and Markdown. Code cells contain code that can be executed while Markdown cells contain text that can be formatted using Markdown syntax.

Kernel

The Kernel is the engine that runs the code in a Jupyter Notebook. Users can select their preferred kernel according to the requirements and specifications. Different kernels support different programming languages such as Python, R and Julia.



Output

The output area is located below each code cell and displays the output of the code that was run in the cell. The output can be text, graphics or other types of data.

Running Code Cells

The steps for running code cells in Jupyter Notebook:

01

Create a new Notebook or open an existing one in Jupyter Notebook in ConverSight.

02

Navigate and click on the cell that contains the code to be executed.

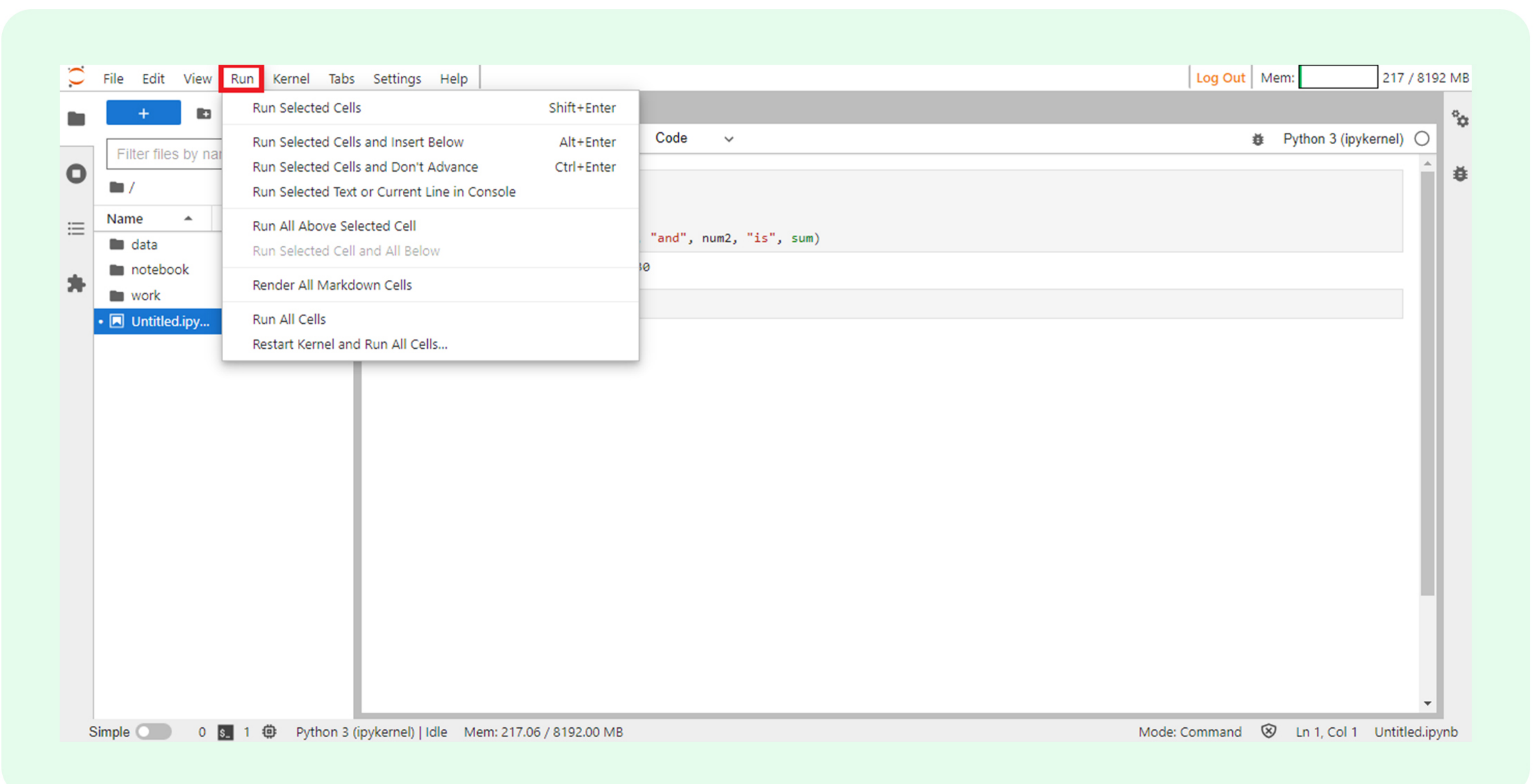


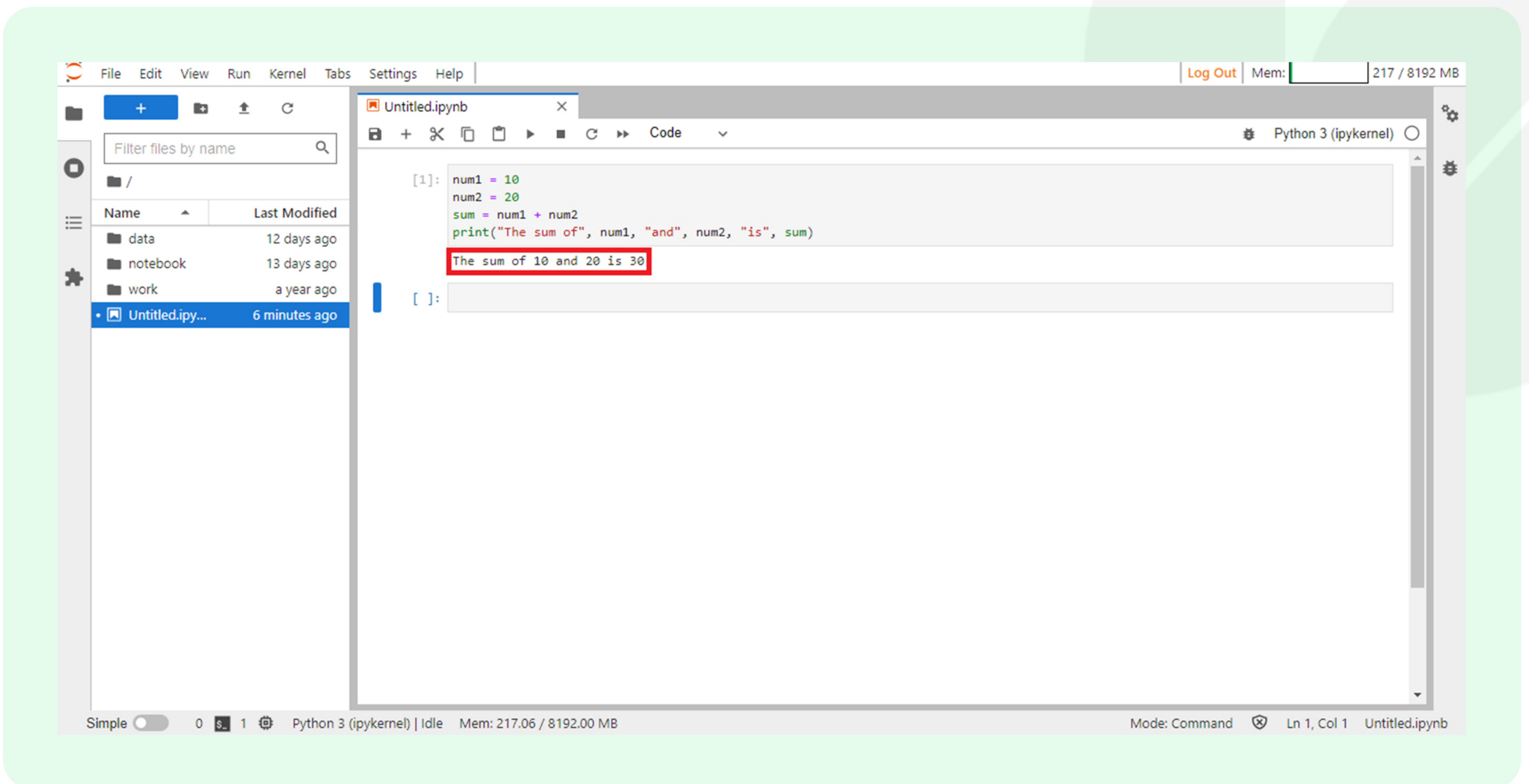
04

The output of the code will be displayed below the cell. If the cell contains a print statement, the output will be displayed in the output area.

03

Press Shift + Enter keys or Run button in the toolbar to run the code in the selected cell.





3. Features and Technicalities

3.1 Integration with pandas and polars

In ConverseSight, the Jupyter Notebook seamlessly integrates with popular Python libraries for data analysis and manipulation, namely pandas and polars. To leverage pandas within your ConverseSight Jupyter Notebook, simply initiate the library using the command **'import pandas as pd'**. Similarly, for polars, use **'import polars as pl'**. This integration establishes a robust platform for users to effortlessly load, transform and explore data, enhancing the capabilities of data analysis and manipulation.

3.2 Co-Authoring and Debugging

Co-Authoring

In ConverseSight's Jupyter Notebook, multiple users can collaborate on the same Notebook simultaneously, and any changes made are automatically synchronized in real-time. Notebooks can be shared as a file or through a web-hosted service, allowing for easy collaboration among team members.

Debugging

Using Debugger Extensions

Jupyter Notebook has several extensions that can help with debugging such as Python Debugger (pdb) and the IPython debugger (ipdb). These extensions allow you to set breakpoints in your code, step through your code line by line and examine variables and other values.

Using %pdb

The %pdb is a magic command in Jupyter Notebook that automatically activates the Python Debugger. Whether experienced or a beginner, one can easily identify and rectify the error that has occurred.

```
[1]: from conversight import Dataset

[2]: ds = Dataset("643cdda2-0PQFfDEVm")

[2023-04-17 10:14:06,198] [INFO] Loading dataset kt_dataset...
[2023-04-17 10:14:06,717] [INFO] smart query loaded successfully for the dataset ==> 643cdda2-0PQFfDEVm
[2023-04-17 10:14:06,779] [INFO] Groups loaded successfully for the dataset ==> 643cdda2-0PQFfDEVm
[2023-04-17 10:14:06,812] [INFO] Roles loaded successfully for the dataset ==> 643cdda2-0PQFfDEVm
[2023-04-17 10:14:06,894] [INFO] ***** 643cdda2-0PQFfDEVm Dataset object created.*****

[3]: %pdb
Automatic pdb calling has been turned ON

[*]: ds.connection.tree()

-----
AttributeError                                Traceback (most recent call last)
Input In [4], in <cell line: 1>()
----> 1 ds.connection.tree()

AttributeError: 'Connection' object has no attribute 'tree'
> /tmp/ipykernel_232/2559150675.py(1)<cell line: 1>()
----> 1 ds.connection.tree()

ipdb> |
```

4. Conclusion

In summary, Jupyter Notebook stands as a pivotal asset within the ConverSight platform, offering a seamless integration for data science and machine learning endeavors. Its user-friendly interface, coupled with robust features like collaborative workspaces, replicability and versatile data analysis capabilities, makes it an indispensable tool for professionals in diverse fields. Jupyter Notebook within ConverSight empowers users to delve into data analysis and build models effortlessly. Embracing this amalgamation of technology and accessibility, ConverSight continues to pave the way for innovative and efficient data-driven solutions within a collaborative ecosystem.

Join our customers who have accelerated growth with ConverSight



Request a demo

About ConverSight

ConverSight's Adaptive Analytics platform uses conversational AI, Natural Language Processing and machine learning to converge the distance between humans and data through data stories, presenting the meaning of data in the most effective, personalized and efficient form possible. ConverSight's patented AI business assistant, Athena, connects distributed databases to answer questions and Augment the consumers through 4 key functions: Information on demand, Automated Story Telling, Proactive Insights, and Recommended Actions.

For more information, visit www.conversight.ai

