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# Using Azure Data Studio with Python for Machine Learning

Event Code: #10184

meetup.com/Microsoft-Reactor-Abu-Dhabi

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# Speaker

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**Speaker Bio: Published Author, Sr.Data Architect with experience in Azure Government, AWS, and Google Cloud.  Technical Evangelist and Conference speaker for wellness, Data and AI. Senior Content Developer for SQL Machine Learning.**

# Objective

- Understanding your relationship with data.
- Building a bridge to Machine Learning.
- Intro to Machine Learning Services.
- Demonstration.
- Learning path.
- Tools to build your own environment.
- Q&A

# Terms

**Python** is an object-oriented, high-level programming language.

A **python package** is a collection of modules. When a module from an external package is required, it can be imported.

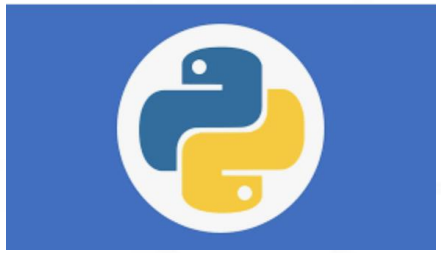
**Azure Data Studio** a portable data tool that uses notebooks based on SQL*, Python, Spark, or Scala. (*comparable to sql-extensions added to Visual Studio Code*)* Could replace SSMS(SQL Server Management Studio) in some cases.

# Packages

The **pandas** package is commonly use as a data analysis or manipulation tool. Pandas uses a dataframe(df) which is two-dimensional labeled data structure with columns. A good example of this is a spreadsheet or a table.

**Pyodbc** is the package used to connect to the SQL Database.

I will show you how these packages are added through the **Azure Data Studio** tool.



# Microsoft Tools

## Available for Download

- Azure Data Studio with Python Kernel Installed
- SQL Server 2019 Machine Learning Services for Windows
- Sample data from Microsoft

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# Using Azure Data Studio with Python for Machine Learning

https://docs.microsoft.com/en-us/sql/machine-learning/data-exploration/python-dataframe-sql-server?view=sql-server-ver15

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# Learning Paths – Microsoft Learn

- Intro to Python https://docs.microsoft.com/en-us/learn/modules/intro-to-python/
- Create Machine Learning Models https://docs.microsoft.com/en-us/learn/paths/create-machine-learn-models/
- Intro to Azure Machine Learning SDK https://docs.microsoft.com/en-us/learn/modules/intro-to-azure-machine-learning-service/
- Build AI Solutions with Azure Machine Learning https://docs.microsoft.com/en-us/learn/paths/build-ai-solutions-with-azure-ml-service/

# Setup for Machine Learning Services for Windows

- Install Azure Data Studio https://docs.microsoft.com/en-us/sql/azure-data-studio/download-azure-data-studio?view=sql-server-ver15
- Create and Run a Python Notebook https://docs.microsoft.com/en-us/sql/azure-data-studio/notebooks-tutorial-python-kernel?view=sql-server-ver15
- Install SQL Server Machine Learning Services on Windows https://docs.microsoft.com/en-us/sql/machine-learning/install/sql-machine-learning-services-windows-install?view=sql-server-ver15
- Insert Python dataframe into SQL table https://docs.microsoft.com/en-us/sql/machine-learning/data-exploration/python-dataframe-sql-server?view=sql-server-ver15

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# Thank You!

## Q&A

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