

Udemy Course: Working with Python® on Windows® and SQL Server® Databases
Instructor: Artemakis Artemiou, B.Sc., M.Sc., MCP, MCTS, MCITP.

<https://www.udemy.com/course/python-windows-sql-server>

Course Summary

In this course, you've learned how to work with Python on Windows and SQL Server databases.

More analytically, you've learned the below in each section:

Introductory Section

In this section, we've talked about Python on Windows and some popular Integrated Development Environments (IDEs) that support Python development.

Moreover, via a live demonstration, we have started setting up this course's demo environment.

Section: Basic Python Knowledge

In this section, you've learned basic Python knowledge, such as how to install Python on Windows and set up your development environment, as well as, we've talked about the basic Python commands and data structures.

More analytically, you've learned how to install Python on a Windows environment, along with installing Visual Studio Code with the Python extension.

Moreover, you've learned how to write, compile and run your first Python program in Visual Studio Code.

Last but not least, we've refreshed our memory on the basic Python commands and data structures.

Section: Basic Interaction with SQL Server

In this section, you've learned more about the pyodbc module, how to connect to SQL Server and run a simple query, as well as about exception handling.

More analytically, in this section, you've learned:

- About the pyodbc module and how to install it on a Windows environment.
- About the different options, for setting up a connection string for SQL Server data access, in your Python programs using pyodbc and the ODBC Driver for SQL Server.
- About the procedure for connecting to SQL Server via a Python Program.

- More about exception handling and how to apply exception handling capabilities to your SQL Server data access code in Python.
- How to run your first SQL Server T-SQL query from within your Python program, and display the query results.

Section: Running SQL Server Queries from within a Python Program

In this section, you've learned how to execute SELECT, INSERT, UPDATE and DELETE T-SQL statements from within your Python programs, as well as, how to use parameters and call Dynamic Management Views (DMVs), aggregation functions and SQL Server global system variables.

More analytically, in this section, you've learned:

- How to execute SQL Server SELECT T-SQL statements from within your Python programs.
- How to execute SQL Server INSERT T-SQL statements from within your Python programs.
- How to execute SQL Server UPDATE T-SQL statements from within your Python programs.
- How to execute SQL Server DELETE T-SQL statements from within your Python programs.
- How to run other SQL Server T-SQL statements from within your Python programs, such as aggregations, along with calling SQL Server system global variables and Dynamic Management Views (DMVs).
- How to use parameters and exception handling for all the above database operations.

Section: Working with SQL Server Stored Procedures

In this section, you've learned how to work with SQL Server stored procedures, from within your Python programs.

More analytically, in this section, you've learned:

- How to create SQL Server Stored Procedures from within your Python Programs.
- How to execute SQL Server Stored Procedures from within your Python Programs and get the results.
- How to execute SQL Server Stored Procedures from within your Python Programs that do not return a result.

Section: Working with SQL Server Functions

In this section, you've learned how to work with SQL Server functions, from within your Python programs.

More analytically, in this section, you've learned:

- How to create SQL Server Functions from within your Python Programs.
- How to execute SQL Server Functions from within your Python Programs and get the results.
- How to call SQL Server System Functions from within your Python Programs and get the results.

Useful Links

- Python releases for Windows:
 - <https://www.python.org/downloads/windows/>
- Visual Studio Code Official Website
 - <https://code.visualstudio.com/>
- SQL Server Downloads
 - <https://www.microsoft.com/en-cy/sql-server/sql-server-downloads>
- SQL Server Management Studio (SSMS)
 - <https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms>
- The Python Language Reference
 - <https://docs.python.org/3/reference/>
- pyodbc - PyPI
 - <https://pypi.org/project/pyodbc/>
- pip - PyPI
 - <https://pypi.org/project/pip/>
- ODBC Driver for SQL Server
 - <https://docs.microsoft.com/en-us/sql/connect/odbc/download-odbc-driver-for-sql-server>
- Create a Stored Procedure
 - <https://docs.microsoft.com/en-us/sql/relational-databases/stored-procedures/create-a-stored-procedure>
- What are SQL database functions?
 - <https://docs.microsoft.com/en-us/sql/t-sql/functions/functions>