

ptv vision

PTV Vision – Tutorial
Using VISUM with Python



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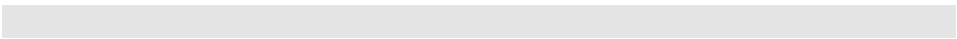
About this Tutorial

This document is part of the tutorial on the PTV Vision product family by PTV AG. It is designed to assist users of these products by explaining step by step the common procedures of project work.

The purpose of this document is to introduce Python scripting to VISUM users. It is intended for those with very little scripting or programming experience and those with little Python experience. It is however useful for those with programming experience, as it can serve as a quick introduction to the key features of using Python with VISUM. Note that there are no additional files or example scripts included with this tutorial. The only example that is used is KA.VER, which is included with your VISUM installation.

The tutorial unfolds its full usefulness together with your version-specific manual and COM documentation. In the tutorial you learn which decisions to make and which steps to take. The users manual provides you with information how to take the steps with the program version available.

The editorial staff of the PTV Vision tutorials hope that you enjoy an interesting and instructive read!



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3.2 VISUM Object Model

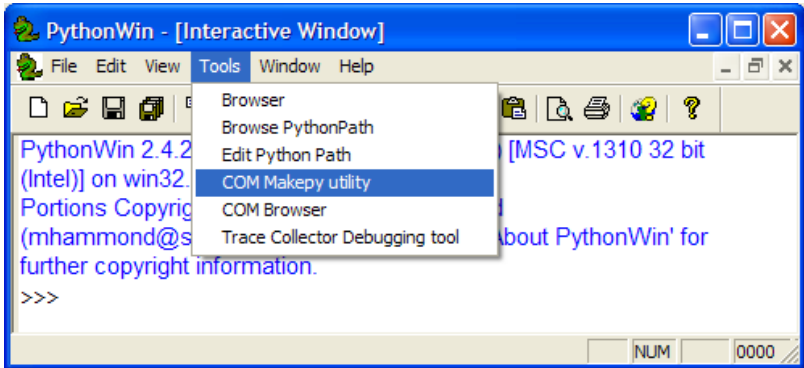
The VISUM object model is the key to COM programming. The object model describes all of the objects that make up your VISUM model. For example, there are links, nodes, turns, zones, transit lines, etc. Each one of these is an object, and each one has attributes and methods/functions. For example, links have a from node attribute (`FROMNODENO`) and a to node attribute (`TONODENO`). It is these objects that we will work with via COM. We will also work with the procedures, the graphics and matrices a bit, but the main emphasis is on the VISUM objects.



The VISUM COM documentation is the best reference for the object model. This tutorial only serves as an introduction to the object model.

3.2.1 COM Makepy Utility

Before we discuss the VISUM object model, it is important to mention a useful helper tool for exploring the object model. The COM Makepy utility under the **TOOLS** menu of PythonWin builds the object intellisense information for COM libraries. This tool is extremely useful as it makes working with COM objects much easier. To build the intellisense information for VISUM, select the COM Makepy utility, scroll down to the VISUM Object Library you want, and click OK. PythonWin should think for a minute and then return “completed successfully” in the status bar.



Once the intellisense information is generated, you should get pop-up information for VISUM objects in addition to built-in objects. This makes working with VISUM via COM easier, as you can quickly see what objects can and cannot do.