

Activating virtual environment in UiPath Execution

Objective

Run Python scripts in UiPath using a virtual environment.

Main reasons

Dependencies isolations: avoid conflicts with other library version and eliminates the need to install server dependencies; This includes the version of python used;

Compatibility with Virtual Environment: ensures compatibility with the virtual environment, allowing the project to use the correct dependencies.

How we are doing

Creating a virtual environment using [Poetry](#);

Activating virtual environment with Powershell following [Poetry official documentation](#) using invoke powershell activity;

Using activities from UiPath.Python.Activities to run the script (since virtual environment does not generate a DLL file we are including the file manually in the same folder as the Python executor).

Results obtaneid

Virtual environment is not being activated and Python is using global Python dependencies instead of dependencies from virtual environment;

By default, UiPath is using a host as a Python executor

Evidences

Logs from Python script execution that contain the path of dependencies used and also the path for the Python executor.

It can be seen from the image that the pandas lib is being searched for in the global Python dependencies and that, although the virtual environment is in the first position of the directories in which Python is searching (sys path), this does not cause the dependency to be searched in my virtual environment.

```
2023-11-02 18:27:31,616 - INFO: Log file created
2023-11-02 18:27:31,616 - INFO: Import path pandas: C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\pandas\__init__.py
2023-11-02 18:27:31,616 - INFO: Python execution file: C:\Users\camila.caldas\.nuget\packages\uiopath.python.activities\1.7.1\bin\net5.0-windows7.0\UiPath.Python.Host.exe
2023-11-02 18:27:31,616 - INFO: List of directories where Python searches dependencies:
C:\Users\camila.caldas\Documents\Repositorios UiPath\Ambiente Virtual\Python-scripts\.venv\Scripts\python310.zip
C:\Program Files\Python310\Lib
C:\Program Files\Python310\DLLs
C:\Users\camila.caldas\.nuget\packages\uiopath.python.activities\1.7.1\bin\net5.0-windows7.0
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\win32
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\win32\lib
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\Pythonwin
C:\Program Files\Python310
C:\Program Files\Python310\lib\site-packages
C:\Program Files\dotnet\shared\Microsoft.NETCore.App\5.0.17\
C:\Users\camila.caldas\Documents\Repositorios UiPath\Ambiente Virtual\Python-scripts
2023-11-02 18:27:32,131 - INFO: Received data was included in excel
```

Hypothesis

Powershell only keeps the instance of the virtual environment inside the “invoke powershell” activity;

UiPath sets a configuration in the python package DLL and in the background uses own Python to execute the script.

Workaround

Include in the script a piece of code that adds the site packages of the virtual environment to the first position of the sys path. The sys path is the list of directories that Python uses to search for dependencies. This adjustment ensures that we are not isolating the environment but are making sure that the right dependencies are used. Unfortunately, we have not found any workaround for the Python version issue, as it is conditioned by the DLL developed by UiPath.

```
2023-11-02 18:22:53,708 - INFO: Log file created
2023-11-02 18:22:53,709 - INFO: Import path pandas: C:\Users\camila.caldas\Documents\Repositorios UiPath\Ambiente Virtual\Python-scripts\.venv\Lib\site-packages\pandas\__init__.py
2023-11-02 18:22:53,709 - INFO: Python execution file: C:\Users\camila.caldas\.nuget\packages\uiopath.python.activities\1.7.1\bin\net5.0-windows7.0\UiPath.Python.Host.exe
2023-11-02 18:22:53,709 - INFO: List of directories where Python searches dependencies:
C:\Users\camila.caldas\Documents\Repositorios UiPath\Ambiente Virtual\Python-scripts\.venv\Lib\site-packages
C:\Users\camila.caldas\Documents\Repositorios UiPath\Ambiente Virtual\Python-scripts\.venv\Scripts\python310.zip
C:\Program Files\Python310\Lib
C:\Program Files\Python310\DLLs
C:\Users\camila.caldas\.nuget\packages\uiopath.python.activities\1.7.1\bin\net5.0-windows7.0
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\win32
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\win32\lib
C:\Users\camila.caldas\AppData\Roaming\Python\Python310\site-packages\Pythonwin
C:\Program Files\Python310
C:\Program Files\Python310\lib\site-packages
C:\Program Files\dotnet\shared\Microsoft.NETCore.App\5.0.17\
C:\Users\camila.caldas\Documents\Repositorios UiPath\Ambiente Virtual\Python-scripts
2023-11-02 18:22:54,225 - INFO: Received data was included in excel
```

Questions

Are our Hypotheses are correct?

Is it possible to use a virtual environment with UiPath.Python.Activities?

Are there any attention points in the workaround we are using?