python / Shell Scripting

Python

IDEs for Python

1) **IDLE** : IDLE is the default Python programming language editor, and is provided with Python. IDLE provides an integrated development environment (IDE) with a limited set of features.
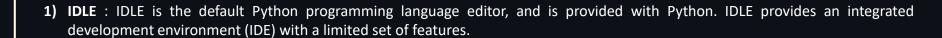
2) **PyCharm** : Developed by JetBrains, PyCharm is a powerful and feature-rich IDE specifically designed for Python development. It offers code analysis, debugging, testing, and version control integration.

3) **Visual Studio Code (VS Code)** : Although not exclusively for Python, VS Code is a highly customizable and widely used code editor with excellent Python support. It offers a rich set of extensions and features, including debugging capabilities.

4) **Jupyter Notebook/JupyterLab** : Jupyter Notebook is a web-based interactive environment widely used for data science and exploratory coding in Python. JupyterLab is the next-generation interface that provides an improved user experience.

5) **Spyder** : Spyder is a Python IDE specifically tailored for scientific computing and data analysis. It provides a MATLAB-like environment with features such as an interactive console, variable explorer, and debugging tools..

6) **Sublime Text** : Sublime Text is a lightweight and highly customizable code editor that is popular among developers. It supports Python development with syntax highlighting and an extensive plugin ecosystem.

Python

Python Environment Variable

- For **Windows** : https://datatofish.com/add-python-to-windows-path/
- For **Ubuntu/Debian** : https://www.tutorialspoint.com/python/python_environment.htm
- For **Fedora/CentOS/RHEL** : https://www.tutorialspoint.com/python/python_environment.htm
- For **Mac OS** : https://www.mygreatlearning.com/blog/add-python-to-path/
- Using **Shell/Bash Script** : https://github.com/themr255/Learn-Python-Bash-Scripting/blob/main/Session%202%20-%20Intro%20to%20Python%20and%20Shell-Bash%20Scripting/set_python_path_using_bash.sh
- Using **Ansible** : https://github.com/themr255/Learn-Python-Bash-Scripting/blob/main/Session%202%20-%20Intro%20to%20Python%20and%20Shell-Bash%20Scripting/set_python_path_using_ansible.yml

Check Python version using command : **python --version**

Shell | Bash

IDEs for Python

1) **Visual Studio Code (VS Code)** : A versatile and powerful code editor with excellent support for shell scripting. It offers syntax highlighting, code completion, debugging capabilities, and a wide range of extensions for additional features.

2) **Sublime Text** : A lightweight and customizable text editor with syntax highlighting, code snippets, and extensive plugin support. It provides a good environment for writing and editing shell scripts.

3) IntelliJ IDEA with Shell Script Plugin: A full-featured IDE primarily designed for Java development but has a shell script plugin that provides syntax highlighting, code completion, and code analysis for shell scripts.

4) Eclipse with ShellEd Plugin: An extensible IDE mainly used for Java development but with the ShellEd plugin, it provides features like syntax highlighting, code folding, and code templates for shell scripting.

5) Emacs: A highly customizable text editor with a shell scripting mode that provides syntax highlighting, code navigation, and integration with external tools.

6) Vim: A powerful and popular text editor with extensive support for shell scripting, including syntax highlighting, auto-indentation, and various plugins for additional functionality.

Shell | Bash

Bash Environment Variable

- For **Ubuntu/Debian** : https://github.com/themr255/Learn-Python-Bash-Scripting/blob/main/Session%202%20-%20Intro%20to%20Python%20and%20Shell-Bash%20Scripting/set_bash_path_ubuntu_rhel_mac.txt

- For **Fedora/CentOS/RHEL** : https://github.com/themr255/Learn-Python-Bash-Scripting/blob/main/Session%202%20-%20Intro%20to%20Python%20and%20Shell-Bash%20Scripting/set_bash_path_ubuntu_rhel_mac.txt

- For **Mac OS** : https://github.com/themr255/Learn-Python-Bash-Scripting/blob/main/Session%202%20-%20Intro%20to%20Python%20and%20Shell-Bash%20Scripting/set_bash_path_ubuntu_rhel_mac.txt

Check Python version using command : **bash --version**

Shebang in Linux

- shebang ("#!") tell our Unix-like system how to interpret an executable file.

- When we try to run an executable file, the execve program is called to replace the current process (bash shell if we are using terminal) with a new one and decide how exactly that should be done.

- If we try to run a text file, execve expects the first two characters of the file to be "#!" (read "shebang" or "hashbang") followed by a path to the interpreter that will be used to interpret the rest of the script.

- **Read more about it -**

https://linuxhandbook.com/shebang/

https://www.baeldung.com/linux/shebang

Shell Vs Bash

Sh	Bash
SHell	Bourne Again Shell
#!/bin/sh	#!/bin/bash
Developed by Stephen R. Bourne	Developed by Brain Fox
Predecessor of bash	Successor of sh
sh is the not default SHELL	bash is the default SHELL
It has less functionality.	It has more Functionality with up-gradation.
sh is a valid POSIX shell.	bash is not a valid POSIX shell.
more portable than bash.	less portable than sh.
Shell scripting is scripting in any shell	Bash scripting is scripting specifically for Bash
does not supports command history.	supports command history.