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| *Agnel Charities*  **Fr. C. Rodrigues Institute of Technology, Vashi**  **Department of Electronics and Telecommunication Engg.**  **SUB:-Linux & Networking & Server Configuration ( LNSC) ECL-604** | | |  |  |
| **Running Python script on Ubuntu** | | |  |
| **EXPT NO** | **8** |  |  |
| **AIM** | **Running Python script on Ubuntu** | |  |
| **THEORY** | **Python** is a [high-level](https://en.wikipedia.org/wiki/High-level_programming_language), [general-purpose programming language](https://en.wikipedia.org/wiki/General-purpose_programming_language). Its design philosophy emphasizes [code readability](https://en.wikipedia.org/wiki/Code_readability) with the use of [significant indentation](https://en.wikipedia.org/wiki/Off-side_rule). Its [language constructs](https://en.wikipedia.org/wiki/Language_construct) and [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming) approach aim to help [programmers](https://en.wikipedia.org/wiki/Programmers) write clear, logical code for small- and large-scale projects.  Python is [dynamically-typed](https://en.wikipedia.org/wiki/Type_system#DYNAMIC) and [garbage-collected](https://en.wikipedia.org/wiki/Garbage_collection_(computer_science)). It supports multiple [programming paradigms](https://en.wikipedia.org/wiki/Programming_paradigm), including [structured](https://en.wikipedia.org/wiki/Structured_programming) (particularly [procedural](https://en.wikipedia.org/wiki/Procedural_programming)), object-oriented and [functional programming](https://en.wikipedia.org/wiki/Functional_programming). It is often described as a "batteries included" language due to its comprehensive [standard library](https://en.wikipedia.org/wiki/Standard_library).  [Guido van Rossum](https://en.wikipedia.org/wiki/Guido_van_Rossum) began working on Python in the late 1980s as a successor to the [ABC programming language](https://en.wikipedia.org/wiki/ABC_(programming_language)) and first released it in 1991 as Python 0.9.0. Python 2.0 was released in 2000 and introduced new features such as [list comprehensions](https://en.wikipedia.org/wiki/List_comprehension), [cycle-detecting](https://en.wikipedia.org/wiki/Cycle_detection) garbage collection, [reference counting](https://en.wikipedia.org/wiki/Reference_counting), and [Unicode](https://en.wikipedia.org/wiki/Unicode) support. Python 3.0, released in 2008, was a major revision that is not completely [backward-compatible](https://en.wikipedia.org/wiki/Backward_compatibility) with earlier versions. Python 2 was discontinued with version 2.7.18 in 2020. | |  |
| **PROCEDURE** | To run a Python script in Linux Python programs are very similar to text files; they can be written with something as simple as a basic text editor. The choice of available editors varies by the operating system in use. Let’s have a look at how we can run a Python script in Linux. Running a Script Once the script has been written, save it to a specific location in your system and then follow the steps below to run it:   * Open the terminal by searching for it in the dashboard or pressing Ctrl + Alt + T. * Navigate the terminal to the directory where the script is located using the cd command. * Type python SCRIPTNAME.py in the terminal to execute the script.   If the script is python3, use python3 in the terminal command:python3 SCRIPTNAME.py Alternate method If you find it cumbersome to write python in the terminal every time you run the script, follow the procedure below:   * Prepend #! /usr/bin/python with your script. * Run the following command in your terminal to make the script executable: chmod +x SCRIPTNAME.py * Now, ​simply type ./SCRIPTNAME.py to run the executable script.  **Option 1: Call the interpreter**  * For Python 2: python <filename>.py * For Python 3: python3 <filename>.py  **Option 2: Let the script call the interpreter**  1. Make sure the first line of your file has #!/usr/bin/env python. 2. Make it executable - chmod +x <filename>.py. 3. And run it as ./<filename>.py   $ touch sample-script.py  To be able to run the script, it must be marked as an executable file. Mark the file as an executable.  $ chmod +x sample-script.py  **ORE** Check the [file permission](https://linuxhint.com/linux_file_permissions/) to verify if it worked.  $ ls -l sample-script.py  using the [nano text editor](https://linuxhint.com/nano-editor-beginner-guide/).  $ nano sample-script.py  We’ll place a simple program that prints “hello world” on the console  $ print ('hello world')  **Running the Python script**  Finally, we can run the script. Call the Python interpreter and pass the location of the file.  $ python sample-script.py Bash-style Python script So far, we’ve seen the default way of running a Python script. However, there’s an unconventional way of writing and running a Python script as a shell script.  Generally, a shell script contains a list of commands that are interpreted and executed by a shell ([bash](https://linuxhint.com/bash-variables-syntaxes/), [zsh](https://linuxhint.com/install-use-oh-my-zsh/), [fish shell](https://linuxhint.com/install_fish_shell_linux/), etc.). A typical shell script uses [shebang](https://linuxhint.com/shebang-bash-explained-in-examples/) to declare the desired interpreter for the script.  $ which python $ which python3  https://linuxhint.com/wp-content/uploads/2022/01/word-image-745.png Creating a shell script write a simple Python program that prints “hello world” on the next line.  $ print('hello world')  https://linuxhint.com/wp-content/uploads/2022/01/word-image-748.png  Save the file and close the editor. Running the script Run the script as you’d run a shell script.  $ ./sample-script.sh  Run the script as you’d run a shell script.  $ ./sample-script.sh  https://linuxhint.com/wp-content/uploads/2022/01/word-image-749.png  It needs to be passed on to the interpreter to run a Python code. Using this principle, we can use various types of scripts to run our Python code. This guide demonstrated running Python scripts directly (filename.py scripts) or indirectly (filename.sh).  In Linux, scripts are generally used to automate certain tasks. If the task needs to be repeated regularly, it can also be automated with the help of crontab.  Test the following python scripts:  **F:\1-FH2022-SL-Mp1B_DBMS\TE-Skill Lab -Linux server-TE-Sem6-Fh22\Linux Lab Manual-Sample-refeL-dnl\Read take-LNSC\python gaming utilities on ubuntu.jpeg** | |  |
| **CONCLUSION** | In this Practical we learned how to install Ubuntu run python scripts on it. By following above steps, you should have installed Ubuntu with verification of steps. | |  |