1.3.2

Sample Reports of Project Work/ Field Work / Internship

INTERNSHIP REPORT

ON

PROGRAMMING WITH PYTHON

Department of Electronics & Communication Engineering

Submitted by: -

Nandni Jha

Roll N0- 2001320310019

In partial fulfilment for the award of the degree

Of

BACHELOR OF TECHNOLOGY

In

ELECTRONICS AND COMMUNICATION ENGINEERING
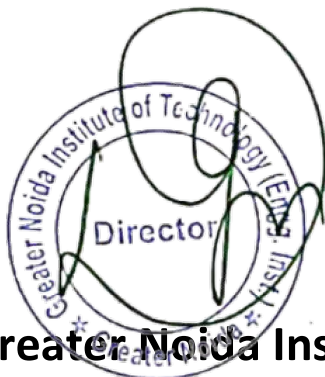
Under the guidance of

Mr.Saurabh Dubey

Submitted To: -

Mr. Abhishek Kaushik

(Asst. Prof.)

Greater Noida Institute of Technology, Greater Noida

PREFACE

This training report reflects the 4 weak summer training at UDEMY

The report has detailes of the practical experience and the academic knowledge that I have gained from during these 4 weak as a student and also it is included details of many practical knowledge that I have conduct and involved.

I have made this report on python. I have tried my best elucidate all the relevant details to be included in the report. While in the beginning I have tried to give a general view about this language

CERTIFICATE

CERTIFICATE OF COMPLETION

Python for Beginners with Real-World Applications (Hindi)

Instructors **Saurabh Dubey**

Nandni jha

Date **Jan. 24, 2022**
Length **12 total hours**

Acknowledgement

It is our proud privilege and duty to acknowledge the kind of help and guidance received from several people in preparation of this report. It would not have been possible to prepare this report in this form without their valuable help, cooperation and guidance.

First and foremost, we wish to record our sincere gratitude to Prof., **Mr.Abhishek Kaushik sir** for his constant support and encouragement in preparation of this report and for making available library and laboratory facilities needed to prepare this report.

The seminar on **"Python"** was very helpful to us in giving the necessary background information and inspiration in choosing this topic for the seminar. Their contributions and technical support in preparing this report are greatly acknowledged.

Last but not the least, we wish to thank our parents for financing our studies in this college as well as for constantly encouraging us to learn engineering. Their personal sacrifice in providing this opportunity to learn engineering is gratefully acknowledgement.

Table Of Contents

Python

Python is a widely used <u>high-level</u>, <u>general-purpose</u>, <u>interpreted</u>, <u>dynamicprogramming language</u>. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than would be possible in languages such as C++ or Java. The language provides constructs intended to enable clear programs on both a small and large scale.

Python supports multiple programming paradigms, including <u>object-oriented</u>, imperative and functional programming or procedural styles. It features a dynamic type system and automatic memory management and has a large and comprehensive standard library. Python interpreters are available for installation on many operating systems, allowing Python code execution on a wide variety of systems.

Object Oriented Programming Language

Object-oriented programming (OOP) is a programming paradigm based on the concept of "objects", which may contain data, in the form of fields, often known as attributes; and code, in the form of procedures, often known as methods. A distinguishing feature of objects is that an object's procedures can access and often modify the data fields of the object with which they are associated (objects have a notion of "this" or "self").

In OO programming, computer programs are designed by making them out of objects that interact with one another. There is significant diversity in objectoriented programming, but most popular languages are class-based, meaning that objects are instances of classes, which typically also determines their type.

History

Python was conceived in the late 1980s, and its implementation was started in December 1989 by Guido van Rossum at CWI in the Netherlands as a successor to the ABC language (itself inspired by SETL) capable of exception handling and interfacing with the Amoeba operating

system. Van Rossum is Python's principal author, and his continuing central role in deciding the direction of Python is reflected in the title given to him by the Python community, benevolent dictator for life (BDFL).

"Python is an experiment in how much freedom programmers need. Too much freedom and nobody can read another's code; too little and expressiveness is endangered."

- Guido van Rossum

Behind The Scene of Python

About the origin of Python, Van Rossum wrote in 1996:

Over six years ago, in December 1989, I was looking for a "hobby" programming project that would keep me occupied during the week around Christmas. My office ... would be closed, but I had a home Computer, and not much else on my hands. I decided to write an interpreter for the new scripting language I had been thinking about lately: a **descendant of ABC** that would appeal to Unix/C hackers. I chose Python as a working title for the project, being in a slightly irreverent mood (and a big fan of **Monty Python's FlyingCircus**).

Downloading python

If you don't already have a copy of Python installed on your computer, you will need to open up your Internet browser and go to the Python download page **(http://www.python.org/download/).**

Now that you are on the download page, select which of the software builds you would like to download. For the purposes of this article we will use the most up to date version available (Python 3.4.1).

Download Python

Download Python

The current production versions are Python 3.4.1 and Python 2.7.8.

Once you have clicked on that, you will be taken to a page with a description of all the new updates and features of 3.4.1, however, you can always read that while the download is in process. Scroll to the bottom of the page till you find the "Download" section and click on the link that says "download page."

Download

Please proceed to the download page for the download.

Notes on this release:

- The binaries for AMD64 will also work on processors that implement the Intel 64 architecture. (Also known as the "x64" architecture, and formerly known as both "EM64T" and "x86-64".) They will not work on Intel Itanium Processors (formerly "IA-64").
- There is important information about IDLE, Tkinter, and Tcl/Tk on Mac OS X here.

Now you will scroll all the way to the bottom of the page and find the "Windows x86 MSI installer." If you want to download the 86-64 bit MSI, feel free to do so. We believe that even if you have a 64-bit operating system installed on your computer, the 86-bit MSI is preferable. We say this because it will still run well and sometimes, with the 64bit architectures, some of the compiled binaries and Python libraries don't work well.

Files		
Version	**Operating System**	**Description**
Mac OS X 32-bit i386/PPC installer	Mac OS X	for Mac OS X 10.5 and later
Mac OS X 64-bit/32-bit installer	Mac OS X	for Mac OS X 10.6 and later
Gzipped source tarball	Source release	
XZ compressed source tarball	Source release	
Windows debug information files	Windows	
Windows debug information files for 64-bit binaries	Windows	
Windows help file	Windows	
Windows x86-64 MSI installer	Windows	for AMD64/EM64T/x64, not
Windows x86 MSI installer	Windows	

Installing Python

Once you have downloaded the Python MSI, simply navigate to the download location on your computer, double clicking the file and pressing Run when the dialog box pops up.


If you are the only person who uses your computer, simply leave the "Install for all users" option selected. If you have multiple accounts on your PC and don't want to install it across all accounts, select the "Install just for me" option then press "Next."

f you want to change the install location, feel free to do so; however, it is best to leave it as is and simply select next, Otherwise...

Scroll down in the window and find the "Add Python.exe to Path" and click on the small red "x." Choose the "Will be installed on local hard drive" option then press "Next."
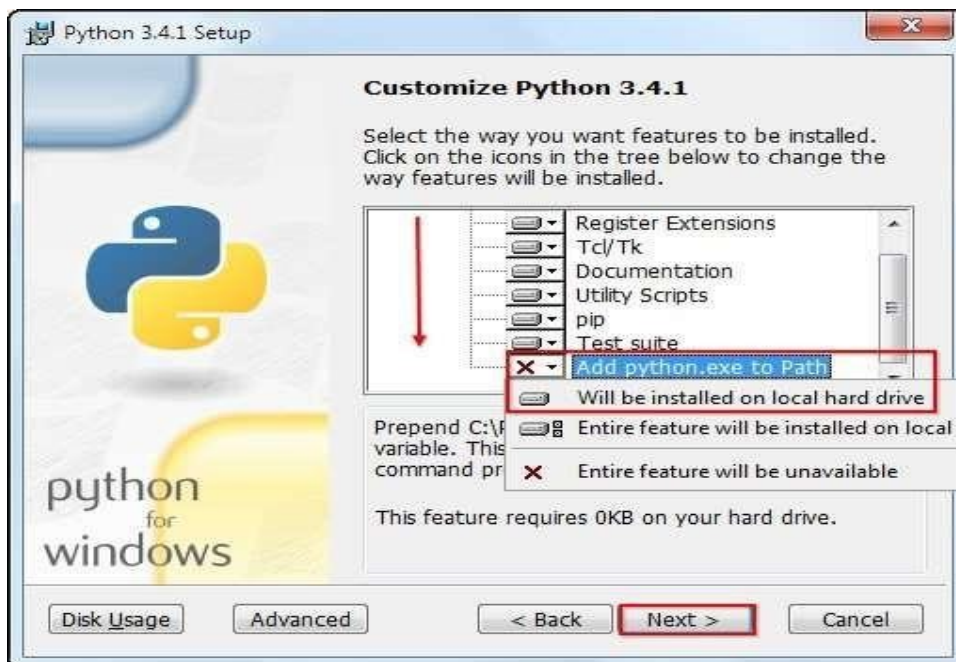
Now that you have completed the installation process, click on "Finish.

Setup the Path Variable

Begin by opening the start menu and typing in "environment" and select the option called

"Edit the system environment variables."

When the "System Properties" window appears, click on "Environment Variables…"

Once you have the "Environment Variables" window open, direct your focus to the bottom half. You will notice that it controls all the "System Variables" rather than just this associated with your user. Click on "New…" to create a new variable for Python.
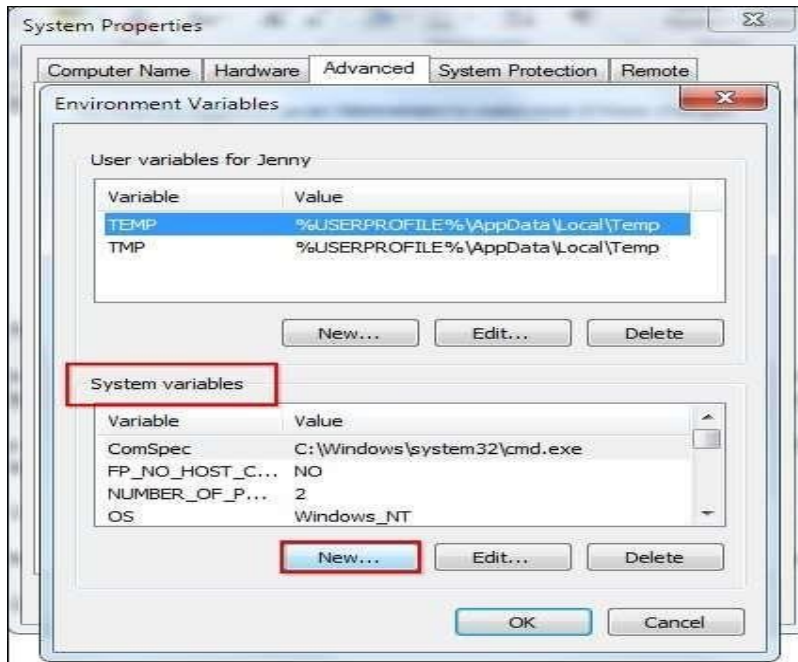
Simply enter a name for your Path and the code shown below. For the purposes of this example we have installed Python 2.7.3, so we will call the path: "Pythonpath." The string that you will need to enter is: "C:\Python27\;C:\Python27\Scripts;"
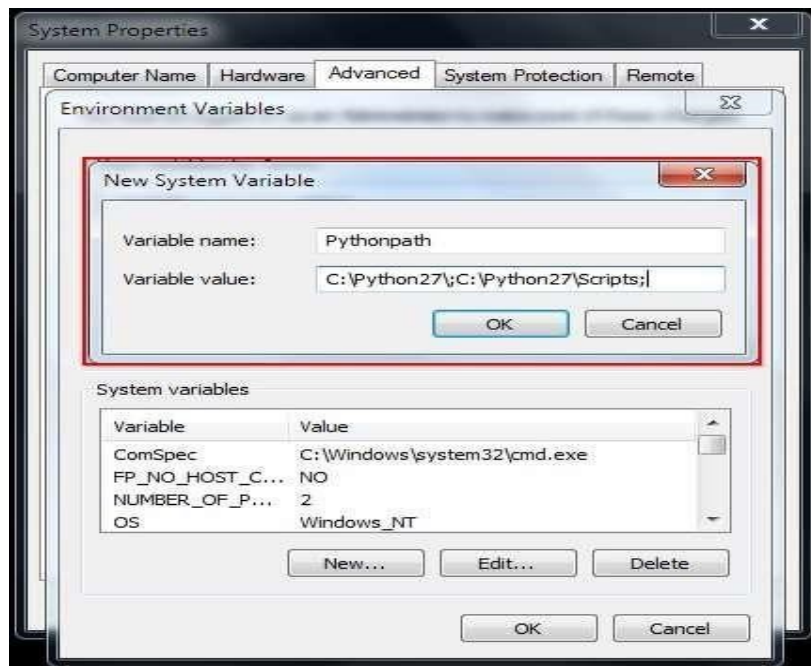
Running The Python IDE

Now that we have successfully completed the installation process and added our "Environment Variable," you are ready to create your first basic Python script. Let's begin by opening Python's GUI by pressing "Start" and typing "Python" and selecting the "IDLE (Python GUI)."
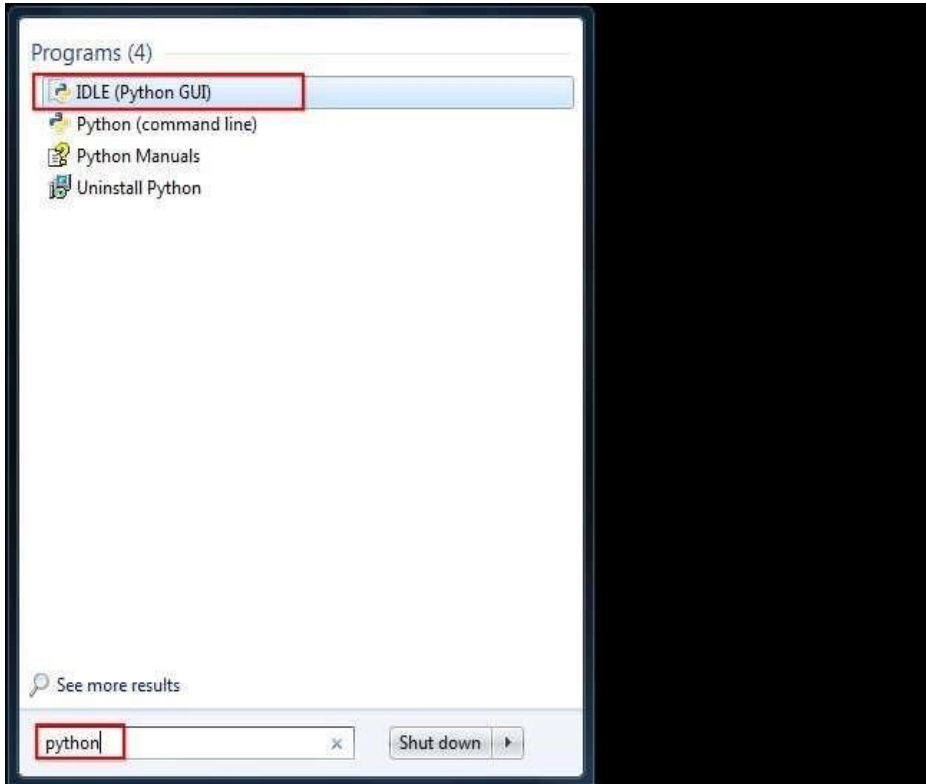

Once the GUI is open, we will begin by using the simplest directive possible. This is the "print" directive which simply prints whatever you tell it to, into a new line. Start by typing a print directive like the one shown in the image below or copy and paste this text then press

"Enter": print ("Congratulations on executing your first print directive!")

Python Code Execution

Python's traditional runtime execution model: source code you type is translated to byte code, which is then run by the Python Virtual Machine. Your code is automatically compiled, but then it is interpreted.
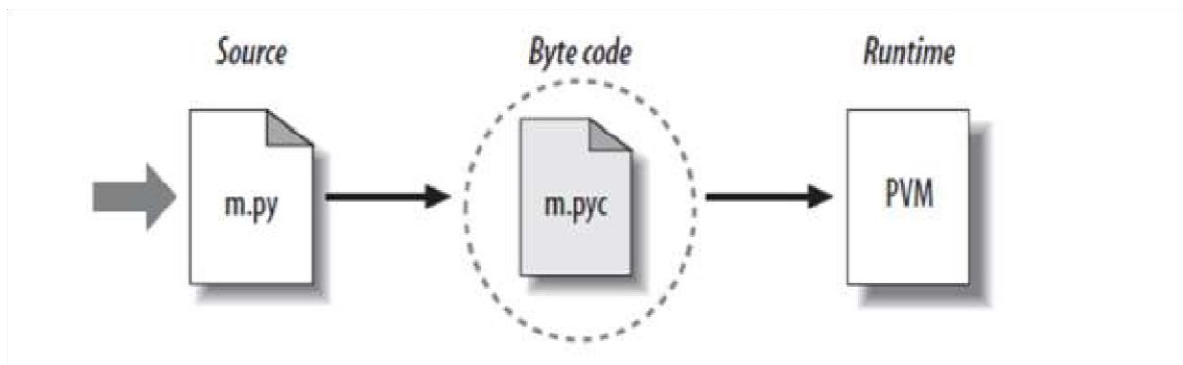
Source code extension is .py

Byte code extension is .pyc (compiled python code)

What Can We do With Python?

1 - System programming

2 - Graphical User Interface Programming

3 - Internet Scripting

4 - Component Integration

5 - Database Programming

6 - Gaming, Images, XML , Robot and more

WHO USES PYTHON TODAY?

- Python is being applied in real revenue-generating products by real companies.

- Google makes extensive use of Python in its web search system, and employs Python's creator.

- Intel, Cisco, Hewlett-Packard, Seagate, Qualcomm, and IBM use Python for hardware testing.

- ESRI uses Python as an end-user customization tool for its popular GIS mapping products.

WHY DO PEOPLE USE PYTHON?

- The YouTube video sharing service is largely written in Python.

- Python is object-oriented ○Structure supports such concepts as polymorphism, operation overloading, and multiple inheritance.

- Indentation ○Indentation is one of the greatest future in Python.

- It's free (open source) ○Downloading and installing Python is free and easy ○Source code is easily accessible

- It's powerful ○Dynamic typing ○Built-in types and tools ○Library
utilities

    ○Third party utilities (e.g. Numeric, NumPy, SciPy) ○Automatic memory management

- It's portable ○Python runs virtually every major platform used today ○As long as you have a compatible Python interpreter installed, Python programs will run in exactly the same manner, irrespective of platform.

Conclusion

I believe the trial has shown conclusively that it is both possible and desirable to use Python as the principal teaching language:

- It is Free (as in both cost and source code).

- It is trivial to install on a Windows PC allowing students to take their interest further. For many the hurdle of installing a Pascal or C compiler on a Windows machine is either too expensive or too complicated;

- It is a flexible tool that allows both the teaching of traditional procedural programming and modern OOP; It can be used to teach a large number of transferable skills;

- It is a real-world programming language that can be and is used in academia and the commercial world;

- It appears to be quicker to learn and, in combination with its many libraries, this offers the possibility of more rapid student development allowing the course to be made more challenging and varied;

and most importantly, its clean syntax offers increased understanding and enjoyment for students

REFERENCES

❖• A Practical introduction to Python 3 by Saurabh Dubey Sir

❖ Python Crash Course by UDEMY

❖ Wikipedia (python,udemy)