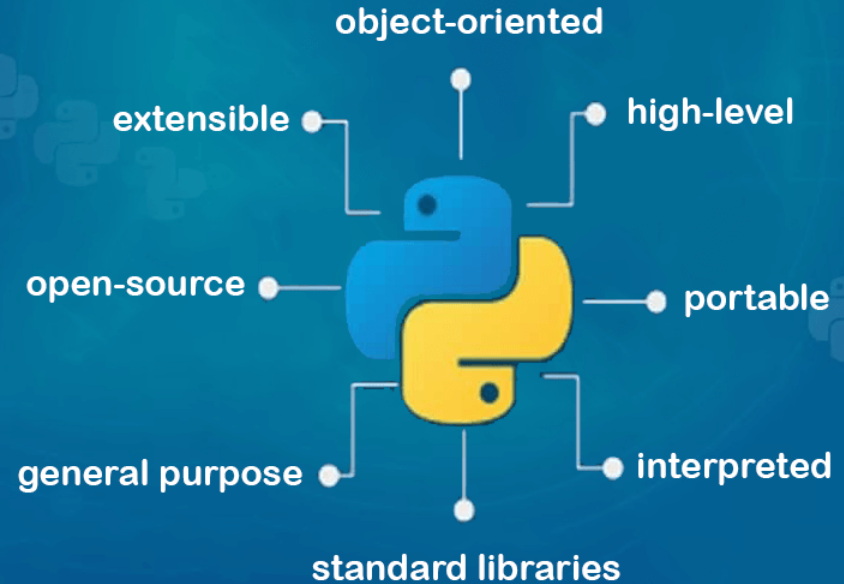# PYTHON

Python is an object-oriented scripting language that was released publicly in 1991.
It was developed by Guido van Rossum of the National Research Institute for Mathematics and Computer Science in Amsterdam.

object-oriented

extensible

high-level

open-source

portable

general purpose

interpreted

standard libraries

● Python code can be written using any text editor that can load and save text using UTF-8 Unicode character encoding. By default, Python files are assumed to use the UTF-8 character encoding, a superset of ASCII that can represent almost every character of all the popular world languages (129 languages are currently supported)

● Using an IDE will make creating/debugging/running programs easier.

IDE (Integrated Development Environment)

IDE stands for Integrated Development Environment.

It's a tool that allows a developer to write, test, and

debug code easily and interactively, as IDEs typically

offer code completion, resource management,

debugging tools and context-sensitive help.

Jupyter is the most common open-source IDE for

python and the easiest way to get it is by downloading

Anaconda distribution.

01 Jupyter

02 PyCharm

03 VS Code

04 Colab

Installing Anaconda

Step1: go to https://www.anaconda.com/products/individual

Step2: Scroll down to see Anaconda Installers

Step3: Download installer appropriate for your computer

Anaconda Installers

Windows ⊞

Python 3.8

64-Bit Graphical Installer (457 MB)

32-Bit Graphical Installer (403 MB)

MacOS

Python 3.8

64-Bit Graphical Installer (435 MB)

64-Bit Command Line Installer (428 MB)
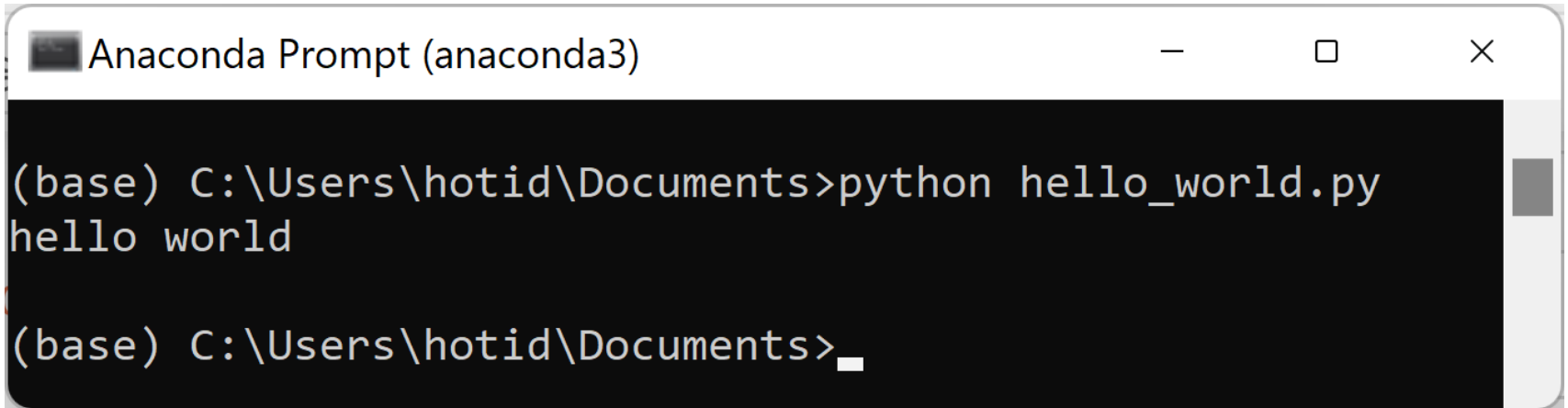
Linux 🐧

Python 3.8

64-Bit (x86) Installer (529 MB)

64-Bit (Power8 and Power9) Installer (279 MB)

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Jupyter Notebooks use .ipynb file extension for python notebooks. Users will be given option to save these files as .py files also.

Python files normally have an extension of .py and can be executed from the command line by using python followed by space followed by filename with .py extension

Anaconda Prompt (anaconda3)

```
(base) C:\Users\hotid\Documents>python hello_world.py
hello world

(base) C:\Users\hotid\Documents>
```

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Project 1

Write a python program to print **Hello Python**

Hello Python is text and Python refers text as `str` (short for string)

In Python, `str` must be enclosed in single quotes (' ') or double quotes (" ")

or triple single quotes (''' ''') or triple double quotes (""" """)

Python's built-in `print` function can be used to print a string.

print ( )

```
functionname(argument)
```

```
print("Hello Python")
```
python code

```
Hello Python
```
output

What's a computer program

Computer Program

A list of instructions that the computer has to follow to do one or more tasks.

Also called code, so coding is informal word for programming

What's the difference between a program and a script?

Though there were subtle differences between a script and a program in the beginning days of computing, those nuances have disappeared over time. Nowadays, the words script and program can be used interchangeably.

Generally speaking, scripts and programs have the following three differences:

1 Scripts are usually simpler and shorter

2 Scripts are usually written to perform one specific task

3 Scripts are often run periodically

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What is a function?

A function is a piece of code that performs a unit of work (one or more tasks)

For example, the built-in function, print ( ), prints the string that was passed to it.

Current version of Python has 69 built-in functions that are very helpful to accomplish most of the common tasks. We can use **print( )** function to accomplish our task of printing Hello Python

Python Built-in Functions

abs()	delattr()	hash()	memoryview()	set()
all()	dict()	help()	min()	setattr()
any()	dir()	hex()	next()	slice()
ascii()	divmod()	id()	object()	sorted()
bin()	enumerate()	input()	oct()	staticmethod()
bool()	eval()	int()	open()	str()
breakpoint()	exec()	isinstance()	ord()	sum()
bytearray()	filter()	issubclass()	pow()	super()
bytes()	float()	iter()	print()	tuple()
callable()	format()	len()	property()	type()
chr()	frozenset()	list()	range()	vars()
classmethod()	getattr()	locals()	repr()	zip()
compile()	globals()	map()	reversed()	__import__()
complex()	hasattr()	max()	round()	

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Source Code

Python's most popular implementation is cpython which uses the blazingly fast c language.

Python's source code is open-source and can be downloaded from:

https://github.com/python/cpython

You can use developer's guide to explore python:

https://devguide.python.org/ (from left side menu, click **Exploring CPython's Internals**)

Built-in functions: https://github.com/python/cpython/blob/master/Python/bltinmodule.c
(scroll to 1950 for **print** function's source code)

Built-in Types: https://github.com/python/cpython/tree/master/Objects

built-in type **int** is at Objects/longobject.c

built-in type **str** is at Objects/unicodeobject.c

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For best python resources, please visit:

gknxt.com/python/

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Python Bootcamp & Masterclass

Thank You
for your Rating & Review