INTRODUCTION TO PYTHON

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COURSE OUTLINE

- What is Python?
- What can Python do?
- Why Python?
- Python Syntax compared to other programming languages
- Python Install
- Python Quickstart
- The Python Command Line

WHAT IS PYTHON?

- Python is a popular programming language.
- It was created by Guido van Rossum, and released in 1991.
- It is used for:

1. web development (server-side),
2. software development,
3. mathematics,
4. system scripting.

WHAT CAN PYTHON DO?

- Python can be used on a server to create web applications.
- Python can be used alongside software to create workflows.
- Python can connect to database systems.
- It can also read and modify files.
- Python can be used to handle big data and perform complex mathematics.
- Python can be used for rapid prototyping, or for production-ready software development.

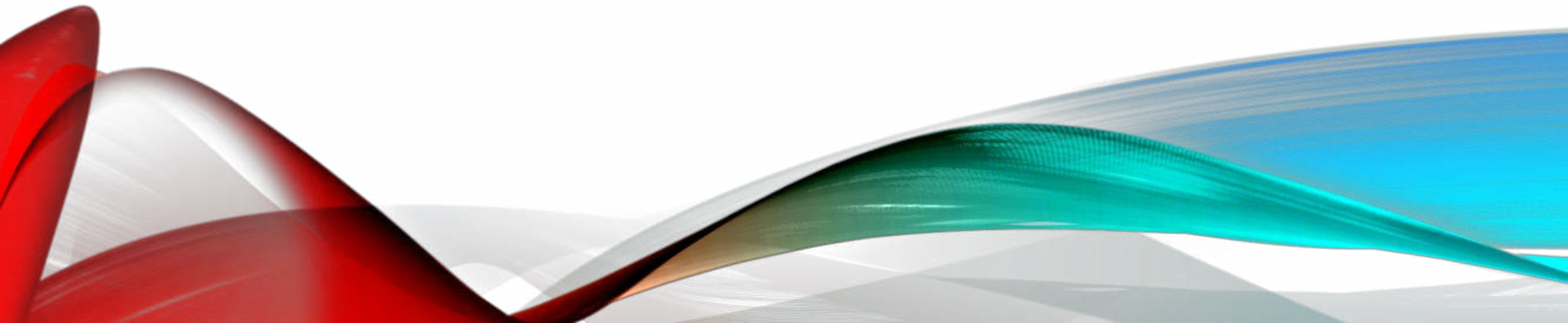
WHY PYTHON?

- Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
- Python has a simple syntax similar to the English language.
- Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- Python runs on an interpreter system, meaning that code can be executed as soon as it is written.
- This means that prototyping can be very quick.
- Python can be treated in a procedural way, an object-orientated way or a functional way.

PYTHON SYNTAX VS OTHER PROGRAMMING LANGUAGES

- Python was designed for readability, and has some similarities to the English language with influence from mathematics.
- Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.
- Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose.

PYTHON GETTING STARTED



PYTHON INSTALL

- Many PCs and Macs will have python already installed.
- To check if you have python installed on a Windows PC, search in the start bar for Python or run the following on the Command Line (cmd.exe):

```
C:\Users\Your Name>python --version
```

- To check if you have python installed on a Linux or Mac, then on linux open the command line or on Mac open the Terminal and type:

```
python --version
```

- If you find that you do not have python installed on your computer, then you can download it for free from the following website: **https://www.python.org/**

PYTHON QUICKSTART

- Python is an interpreted programming language, this means that as a developer you write Python (.py) files in a text editor and then put those files into the python interpreter to be executed.
- The way to run a python file is like this on the command line:

```
C:\Users\Your Name>python helloworld.py
```

- Where "helloworld.py" is the name of your python file.
- Let's write our first Python file, called helloworld.py, which can be done in any text editor.

THE PYTHON COMMAND LINE

- To test a short amount of code in python sometimes it is quickest and easiest not to write the code in a file.
- This is made possible because Python can be run as a command line itself.
- Type the following on the Windows, Mac or Linux command line:

```
C:\Users\Your Name>python
```

OR

```
C:\Users\Your Name>py
```

- From there you can write any python, including our hello world example from earlier in the tutorial:

```
C:\Users\Your Name>python
Python 3.6.4 (v3.6.4:d48eceb, Dec 19 2017, 06:04:45) [MSC v.1900 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello, World!")
```

```
exit()
```

ANY QUESTIONS ??

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