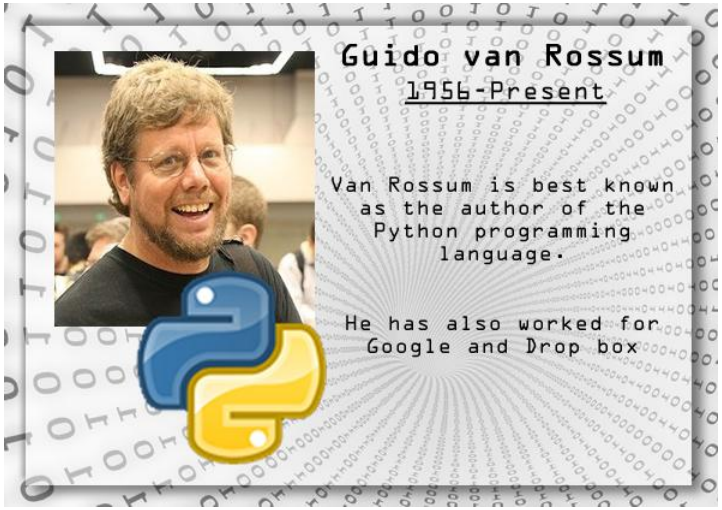
Python Programming
Getting Started

Goals

- In this module you will meet Python's creator:
  - Guido von Rossum



and learn:

- How to write and execute your first Python program

Why Python?

- **Who:** In the early 1990's, Guido van Rossum designed what would become the Python programming language
- **Why:** Van Rossum was dissatisfied with the languages available
  - They were optimized to write large programs that executed quickly
- **What was needed:** He needed a language that could not only be used to create programs quickly but also make them easy to modify
  - It was designed to have a much simpler and cleaner syntax than other popular languages such as Java, C and C++ (making it easier to learn)
  - Python is interpreted, making it easier to develop and test short programs

Creating a Python Program

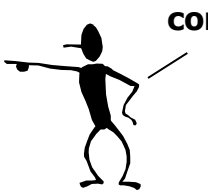
- There are two ways of creating a Python program:
  - Using an Integrated Development Environment (IDE)
    - Example: PyCharm
  - Using a text editor
    - Examples:
      - Notepad++ (Windows)
      - Text Wrangler (Mac OS X)
      - Sublime Text (Linux)
- Either way is OK – you will be handing in a **.py** file for your assignments so the way you choose to create your program is your choice

Your First Program

```
lambleg@newton:~/cis117/w1$ cat hello.py
#Name:  Ann San Mateo
# Description: Hello World Program
# Filename: hello.py
# Date: 6/5/2017
print("Hello, World!")
```

- Once saved as **hello.py**, you can use a console window to:
  - 1) Compile the program
  - 2) Run the program

```
$ python3 hello.py
Hello, World!
```

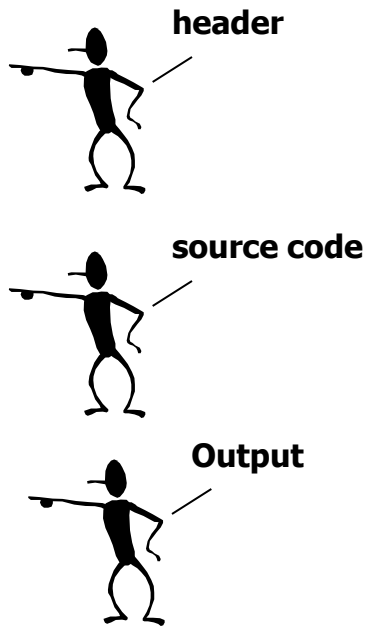


How to Submit Assignments

- Include a program header at the top of your **.py** assignment file
  - Your name
  - Program Description
  - Filename
  - Date
- Source Code
- A copy of your program run (enclosed within comment delimiters)

Assignment Example

```
#Name:  Ann San Mateo
# Description: Hello World Program
# Filename: hello.py
# Date: 6/5/2017
print("Hello, World!")
# Hello World
```



Python Interactive Mode

- You can write/save a complete Python program in a file and let the interpreter execute the instructions in your program file

  Example:

```
$ python3 hello.py
Hello, World!
```

  or

  You can run instructions one at a time using interactive mode

  Example:

```
$ python3
Python 3.4.3 (default, Nov 17 2016, 01:08:31)
[GCC 4.8.4] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>print("Hello, World!")
Hello, World!
>>> exit()
```

Interactive Mode

- To launch the Python interactive mode from a terminal window, enter the command: **python**

Example:

```
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation.  All rights reserved.

C:\Users\glamble>python
Python 3.6.1 (v3.6.1:69c0db5, Mar 21 2017, 17:54:52) [MSC v.1900 32 bit (Intel)]
 on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello, World!")
Hello, World!
>>> exit()
C:\Users\glamble>
```

Exit Interactive Mode

- To exit the Python interactive mode, type **exit()** or **CNTRL-Z Return**

  Example:

```
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation.  All rights reserved.

C:\Users\glamble>python
Python 3.6.1 (v3.6.1:69c0db5, Mar 21 2017, 17:54:52) [MSC v.1900 32 bit (Intel)]
 on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello, again.”)
Hello, again.
>>> exit()

C:\Users\glamble>
```

Python Scripts

- Python Scripts:Scripts have the hashbang (#!) as their first line with the address /usr/bin/python3
- Scripts have permissions **755**
- The filename of scripts need a **.py** extension
- Include a comment at the top of the script that briefly describes what the script does

Python Scripts

```
$cat hello.py
#! /usr/bin/python3
# Hello World Program
# Script filename: hello.py
# Date: 6/5/2017
print("Hello, World!")
$ ls -l hello.py
-rwxr-xr-x 1 lambleg teacher 103 2017-06-06 10:41
    hello.py
$ ./hello.py
Hello, World!
```

Welcome to

PYTHON PROGRAMMING