

Using Python

Spring 2021

Installing Python

<https://www.python.org>

- Download the latest version of Python to your machine
 - Mac and Windows versions are available through the website
 - Linux machines should have it pre-installed
 - IDLE requires external download
- Once downloaded, there should be an application known as “IDLE” on your machine (the basic IDE that comes packaged with Python)

Other Ways to Run Python

- IDEs that support Python:
 - PyCharm
 - Microsoft Visual Studio
 - PyDev
 - WingIDE
- Text Editor and Command Line
 - Must have Python added to Path of your machine
 - Mac and Linux should do this automatically for you
 - Windows should have an option to do this when installing (check)
- OnlineGDB.com is an online program for writing programs (multiple languages), nothing needs to be installed to run it except a web browser

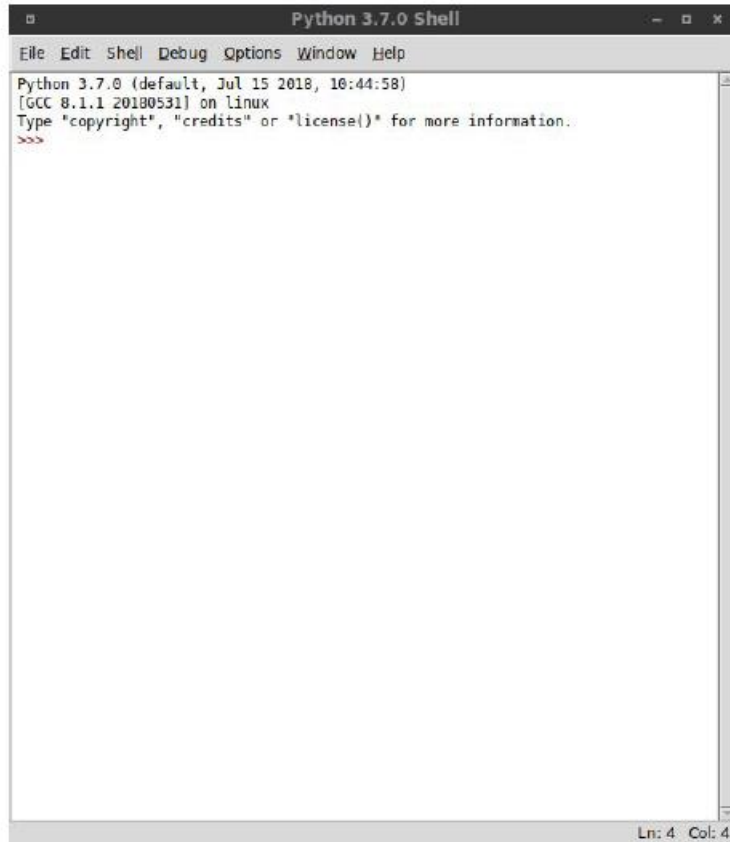
Basic Syntax

- Delimiters - how a language determines the end of a command
 - Python uses whitespace
 - Newlines
 - Indentation
- Comments - used to explain what a section of code is doing in plain English without causing errors
 - Python denotes comments with a “#”
 - Lets the program know to not execute that line
- Built-in Functions - basic commands built in to Python to execute common instructions
 - `print(“Hello World”)` is an example, with `print()` being the function

Coding Convention

- Coding convention is essentially how someone writes code
- Good coding convention dictates:
 - Good whitespace (blank lines between different sections of code)
 - Increases readability
 - Good commenting
 - Makes inheriting code easier for those involved
 - Makes looking at old code easier to follow
- Boils down to a matter of opinion
 - Gets more apparent the more complicated the programs become

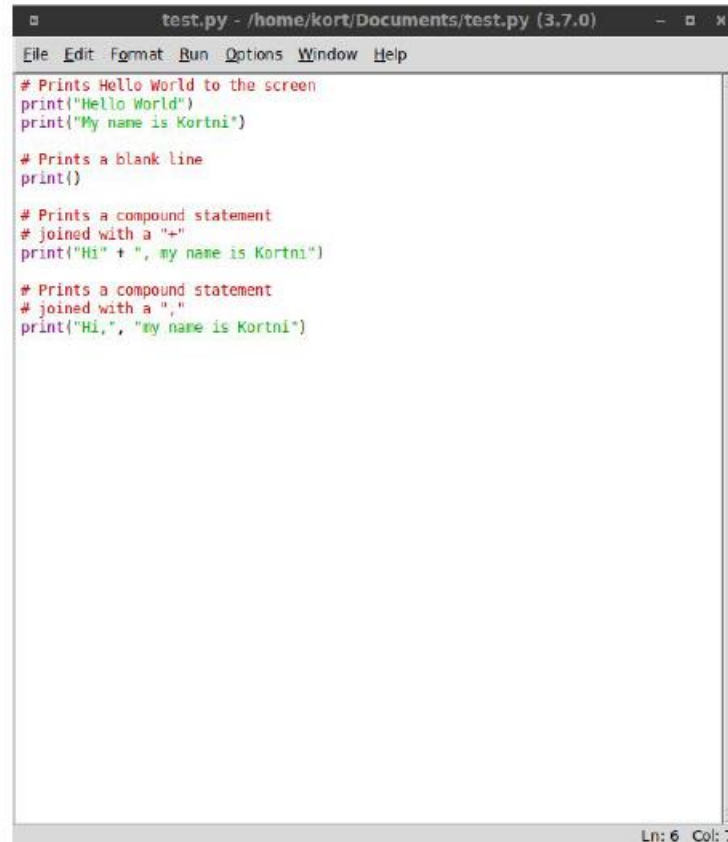
Hello World Program



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (default, Jul 15 2018, 10:44:58)
[GCC 8.1.1 20180531] on linux
Type "copyright", "credits" or "license()" for more information.
>>>
```

Ln: 4 Col: 4

This is the Python shell. To open a new window to program in, select “File > New File”



```
test.py - /home/kort/Documents/test.py (3.7.0)
File Edit Format Run Options Window Help
# Prints Hello World to the screen
print("Hello World")
print("My name is Kortni")

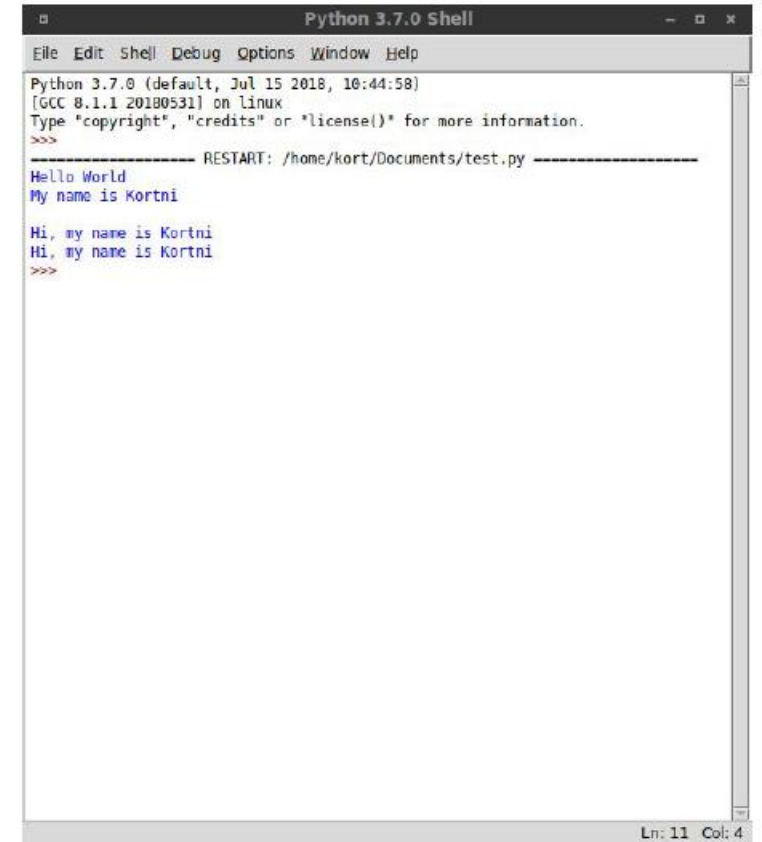
# Prints a blank line
print()

# Prints a compound statement
# joined with a "+"
print("Hi" + ", my name is Kortni")

# Prints a compound statement
# joined with a ","
print("Hi,", "my name is Kortni")
```

Ln: 6 Col: 7

This is the window you’ll see with a new file. Type code and to run select “Run > Run Module”



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (default, Jul 15 2018, 10:44:58)
[GCC 8.1.1 20180531] on linux
Type "copyright", "credits" or "license()" for more information.
>>>
----- RESTART: /home/kort/Documents/test.py -----
Hello World
My name is Kortni

Hi, my name is Kortni
Hi, my name is Kortni
>>>
```

Ln: 11 Col: 4

This is the Python shell after running a module. Only items output (print) from the program will display

IDLE Notes:

- To run a python file, it must be saved
- Keep track of where your files are being saved
- To write a saved program in IDLE, after opening IDLE you must select “File > New File” or it will run it via the shell (your progress won’t be saved)
- To run a previously saved program, you can’t just click on it to open it
 - This will just run the Python
 - To edit the program, you must right click and select a program (such as IDLE) from the “Edit” option

Syntax Notes:

- Anything you want to directly print must be *inside* quotations
 - `print(Hello World)` will not work
- You can print a blank line through `print()`
- You can have compound print statements through two avenues: `+` and `,`
 - `+` and `,` must be *outside* of the quotations to work
 - `+` conjoins statements directly (no space between)
 - `,` adds a space between statements
- Examples online may use Python version 2, which doesn't use parentheses in print statements
 - Python version 3 *requires* parentheses
 - If an example you find online doesn't work for you, check the version