1. Setting up the environment

PYTHON COURSE

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What is Python?

1. Interpreted, high-level and general-purpose programming language.

2. Emphasizes on code readability

3. Supports procedural, object-oriented, and functional programming

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Choosing to use an IDE or editor

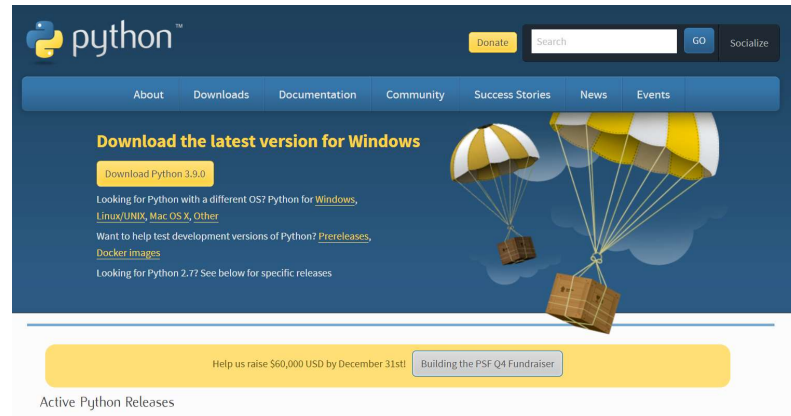| Points to Compare	Integrated Development Environment (IDE)	Code Editor
Features	Text editor, compiler, build or make integration, debugging	Text editor, code syntax
Complexity of navigation	Complex. Many buttons to click.	Straightforward (if you know what you are doing)
Size of the program	Heavy (100 MB++)	Lightweight (<100 MB)
Speed for computation	Might be slower	Fast
Knowledge required	Less. Mostly only clicking buttons.	**Some commands required.**
Flexibility	Low flexibility	High flexibility
Errors	Many hidden errors	Lesser hidden errors

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What are the possibilities?

Heavy   Light

Visual Studio IDE   Anaconda   Pycharm   Visual Studio Code   Sublime Text   Notepad++

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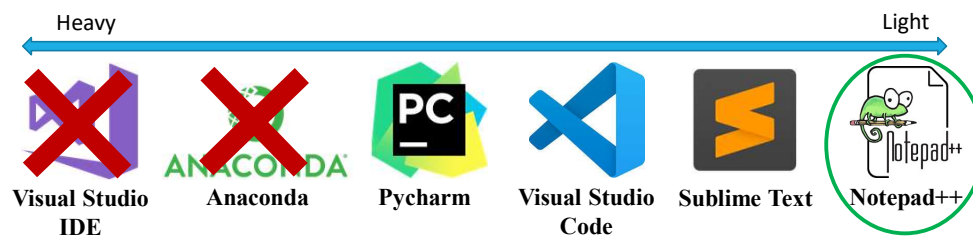
Step 1: Download Python Interpreter

https://www.python.org/

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Step 2: Download an IDE/Editor

https://notepad-plus-plus.org/

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Step 3: Link Notepad++ and Python

Set Language to Python
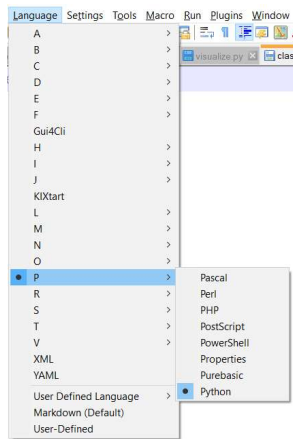
Set Python Interpreter Location

Run	Plugins	Window	?
Run...			F5
Launch in Firefox			Ctrl+Alt+Shift+X
Launch in IE			Ctrl+Alt+Shift+I
Launch in Chrome			Ctrl+Alt+Shift+R
Launch in Safari			Ctrl+Alt+Shift+A
Get PHP help			Alt+F1
Wikipedia Search			Alt+F3
Open file in another instance			Alt+F6
Send via Outlook			Ctrl+Alt+Shift+O
RUN_Python3			Alt+Spacebar
Modify Shortcut/Delete Command...			
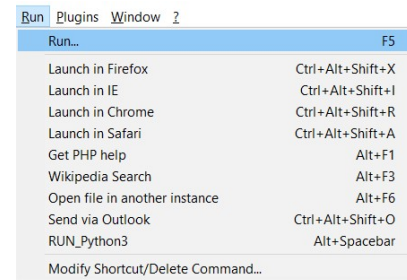
...\python.exe **-i "$(FULL_CURRENT_PATH)"**

Recommended Shortcut: alt + spacebar

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Hello World!

```
1  print('Hello World!')
```

Run it!   (Alt+ Spacebar)

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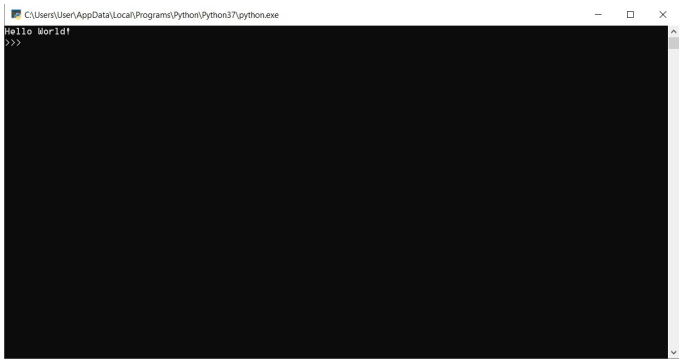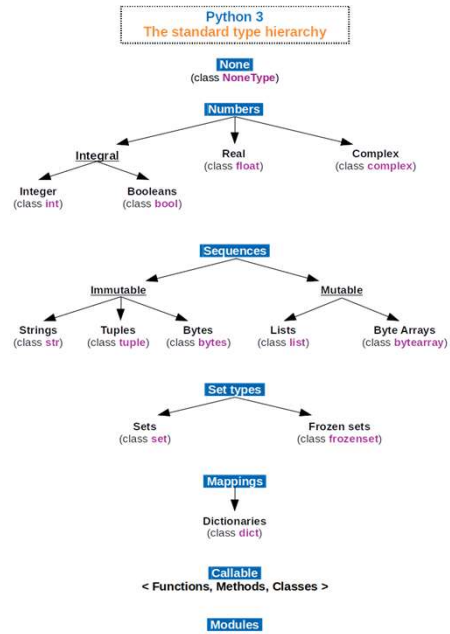What you should see:

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Python Variables

1. Imagine variables as a name tag associated with a particular object (e.g. number, vector, matrix, etc.)

2. In Python, you do not have to predefine the variable type or declare the variable in advance.

3. The easiest way to define/assign a variable is to use the equal sign "=".

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Try Hello World by using a variable!

string

```
1   msg='Hello World!'
2   print(msg)
```

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Input function

```
1   user_answer=input('question to user')
```

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Challenge 1: Separated Names

```
1   first_name="Henry"
2   last_name="Rose"
3
4   '''
5   You have obtained the first name (Henry)
6   and last name (Rose) as input, you need to print
7   out the following:
8   Hello Henry Rose! My name is XXX, nice to meet you Rose!
9   '''
```
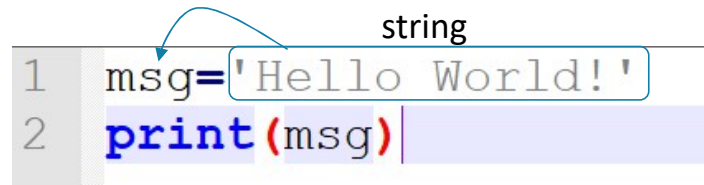
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Challenge 2: Make a simple chatbot

1. Chatbot asks for user's name.

2. Chatbot says hello to user with name.

3. Chatbot ask for user's gender.

4. Chatbot says that it loves that gender.

5. Chatbot ask for user's age.

6. Chatbot says user's age is a good age.

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Homework: Make a chatbot to talk with strangers.

- You can make a very simple or a very difficult chatbot

- Do some research and do something harder (add logic, etc.)

- Try to make the bot read out the text

- Integrate it with Whatsapp, Facebook

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Installing PIP

https://bootstrap.pypa.io/get-pip.py

```
#!/usr/bin/env python
#
# Hi There!
# You may be wondering what this giant blob of binary data here is, you might
# even be worried that we're up to something nefarious (good for you for being
# paranoid!). This is a base85 encoding of a zip file, this zip file contains
# an entire copy of pip (version 20.2.4).
#
# Pip is a thing that installs packages, pip itself is a package that someone
# might want to install, especially if they're looking to run this get-pip.py
# script. Pip has a lot of code to deal with the security of installing
# packages, various edge cases on various platforms, and other such sort of
# "tribal knowledge" that has been encoded in its code base. Because of this
# we basically include an entire copy of pip inside this blob. We do this
# because the alternatives are attempt to implement a "minipip" that probably
# doesn't do things correctly and has weird edge cases, or compress pip itself
# down into a single file.
#
# If you're wondering how this is created, it is using an invoke task located
# in tasks/generate.py called "installer". It can be invoked by using
# ``invoke generate.installer``.

import os.path
import pkgutil
import shutil
import sys
import struct
import tempfile

# Useful for very coarse version differentiation.
PY2 = sys.version_info[0] == 2
PY3 = sys.version_info[0] == 3

if PY3:
    iterbytes = iter
else:
    def iterbytes(buf):
        return (ord(byte) for byte in buf)

try:
    from base64 import b85decode
except ImportError:
    _b85alphabet = (b"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ"
                    b"abcdefghijklmnopqrstuvwxyz!#$%&()*+-;<=>?@^_`{|}~")
```

1. Select all (Ctrl+ A)
2. Copy (Ctrl + C)
3. Paste it in your notepad++ (Ctrl+ V)
4. Save (Ctrl + S)
5. Run it to install (alt + spacebar)

-Check if it is correctly installed
In CMD:
pip --version

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What is PIP?

1. PIP is a rapid library management software which uses command line to install many packages very quickly and easily.

2. Rather than looking for the website, searching for correct version, finding download links, download and install, **PIP does it all for you in one line of code!** (only support for python-based package)

3. The one-liner is: **pip install xxx**   (xxx is the package name)

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Text to speech

```
1   # pip install pyttsx3
2
3   import pyttsx3
4   engine = pyttsx3.init()
5
6
7   msg='Hello World!'
8   engine.say(msg)
9   engine.setProperty('rate', 20) #make it speak slow/fast
10  engine.runAndWait() #run and do not close immediately
```

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Link to Whatsapp!

```python
#pip install selenium, pywin32
#download geckodriver https://github.com/mozilla/geckodriver/releases
#geckodriver: extract and put it in your Python directory eg. C:\Users\User\AppData\Local\Programs\Python\Python37

#Let's import the Selenium package
from selenium import webdriver
from selenium.webdriver.common.keys import Keys
import time

text='sent from python bot'
contact='Xixia Z'
ff_profile_dir = r"C:\Users\User\Desktop\Class\P1" #current file location


ff_profile = webdriver.FirefoxProfile(profile_directory=ff_profile_dir)
web = webdriver.Firefox(ff_profile)
web.get('http://web.whatsapp.com')
time.sleep(25)

elem = web.find_element_by_xpath("//span[@title='{}']".format(contact))
elem.click()

input_box = web.find_element_by_xpath('/html/body/div[1]/div/div/div[4]/div/footer/div[1]/div[2]/div/div[2]') #check xpath
input_box.send_keys(text + Keys.ENTER)
time.sleep(2)
```

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Conclusion

1. IDE vs editor
2. Set up your environment
3. Hello World!
4. Basic variable concept
5. Print function and its combination
6. Simple chatbot
7. PIP installer
8. Text to speech
9. Link to Whatsapp (example)

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