COMP1021
Introduction to Computer Science

Getting Started with Python

David Rossiter and Gibson Lam

Outcomes

- After completing this presentation, you are expected to be able to:
  1. Understand the history and some background information of the Python programming language
  2. Install Python and start using Python through the command line tool and IDLE

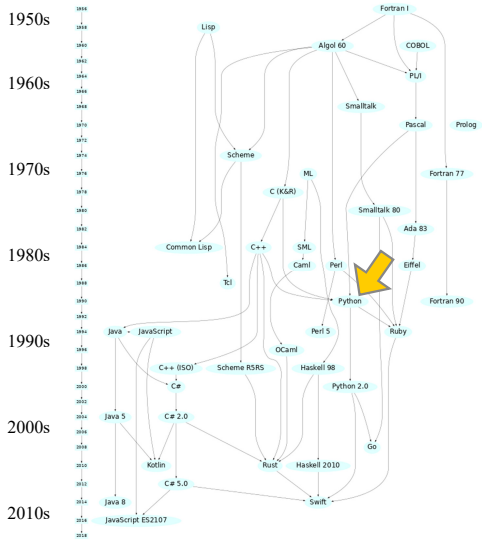
Computer Programming Languages

- Computer programming languages have been developed over the last 50 years
- There are hundreds of them
- For this course we will use a language called *Python*

Evolution of Programming Languages

- Only the main programming languages are shown here
- We can ignore all of them except Python

From http://rigaux.org/language-study/diagram.html



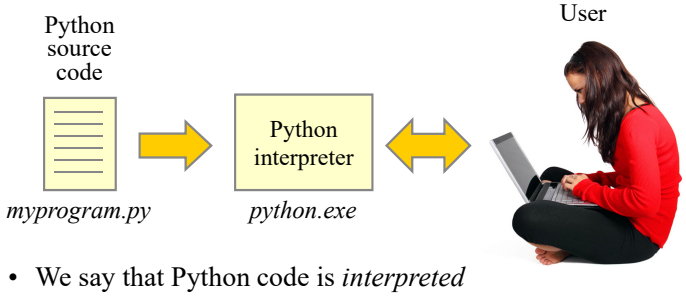
Python

Guido Van Rossum

- Started by a guy who was bored during Christmas 1989
- He made a computer language with these qualities:
  - a language just as powerful as other languages
  - code that is almost as understandable as simple English
  - suitable for everyday tasks, so you can quickly make a useful program
  - open source, so anyone can contribute to its development

Executing a Python Program

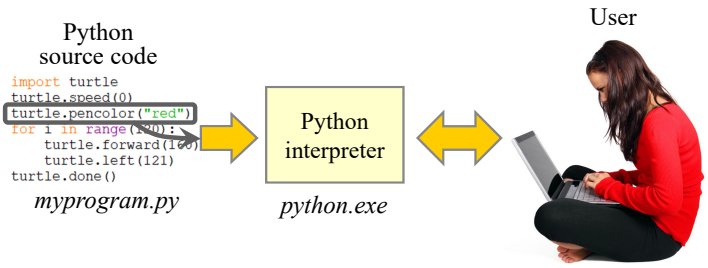
- Python programs have to be 'given' to a Python *interpreter* for execution



- We say that Python code is *interpreted*
- This is the most common way that Python is used

Python is Interpreted

- *Interpreted* means that each line of code is given to the interpreter and executed, one by one

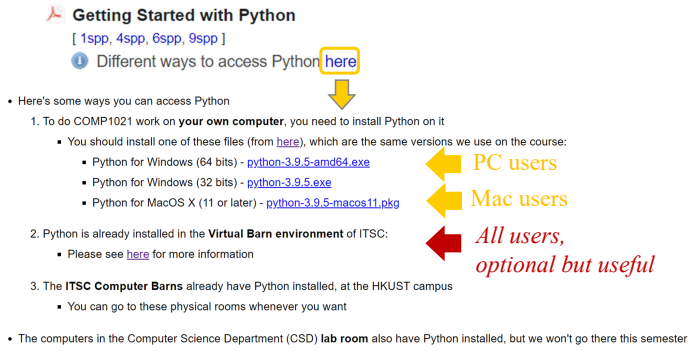


Different Versions of Python

- Python version 1 – this version disappeared a long time ago
- Python version 2 – this version officially died early 2020
- Python version 3 – this version is what we use
- Python 3.9 is the version we use this semester
- You can install it in your own computer, see next slide
  - This is probably the way most students use Python
- You can also run it virtually – details a few slides later
- (It has also been installed in all the ITSC computer barns, the Virtual Barn, and the CS department labs)

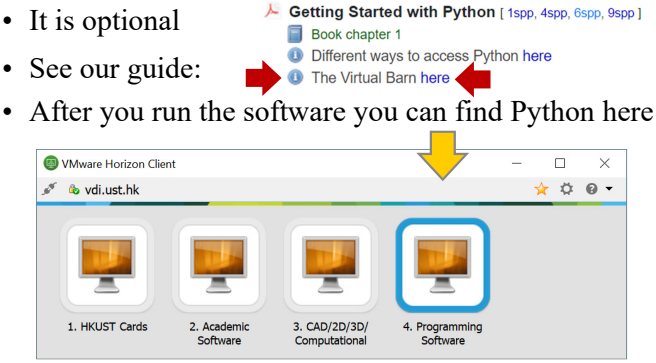
Installing Python on Your Machine

- You need to do this
- Get the installation file from the COMP1021 web site:



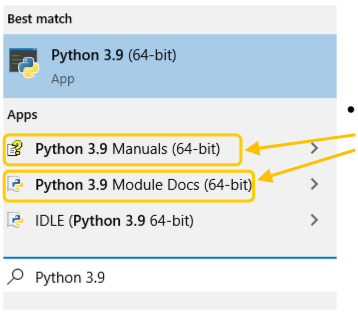
The Virtual Barn

- The Virtual Barn is useful for several reasons e.g. it lets you access Python through the web
- It is optional
- See our guide:
- After you run the software you can find Python here



After Installing Python 3.9

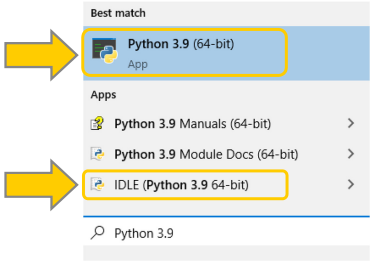
(These images are from a PC)



- After installing, you will see several options if you search for *Python* or perhaps *Python 3.9* in Windows
- Here is some documentation about Python
  - Probably you won't need to look at this, the COMP1021 notes and labs should be enough

Using Python

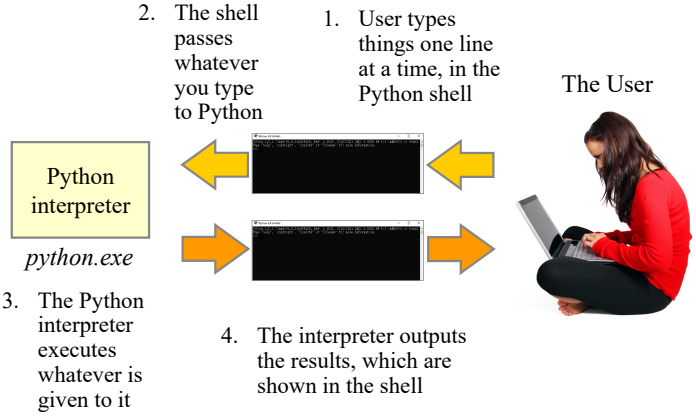
- Let's look at how we can start using Python
- There are two ways we will look at now



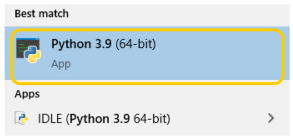
Using Python

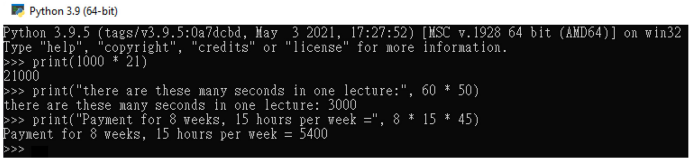
- Both options give you a *shell*

The Basic Idea of Using a Python Shell



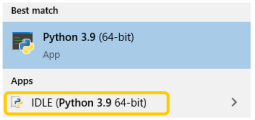
Using a Python Shell – Some Simple Python Code





>>> is generated by the shell,
it means 'this is where your input is shown'

Using the IDLE Environment



- The IDLE environment is better
- One reason is that colours are automatically used, which is sometimes very helpful for understanding
- We'll see other useful features of IDLE soon, especially in the lab work that we'll do