Python 3.7

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Python 3.7

1. **Introduction, variables, operators, string operations**
2. **Functions, condition & recursion**
3. **Iteration & strings**
4. **List**
5. **Tuples**
6. **Dictionary**

7. **FILES**
8. **CLASSES & OBJ**
9. **INHERITANCE**
10. **POLYMORPHISM**

Introduction to Python – 3.7

- Guido van Rossum created Python.


NOW FOR SOMETHING COMPLETELY DIFFERENT...
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Introduction to Python – 3.4

- **Why is the programming language Python called Python?**
- Guido van Rossum needed a name that was short, unique, and slightly mysterious.
- At the time when he began implementing Python, Guido van Rossum was also reading the published scripts from "Monty Python's Flying Circus" (a BBC comedy series from the seventies)
- He decided to call the language Python

Introduction to Python – 3.7

- Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language.
- It was created by Guido van Rossum during 1985-1990.

- This language is like Perl

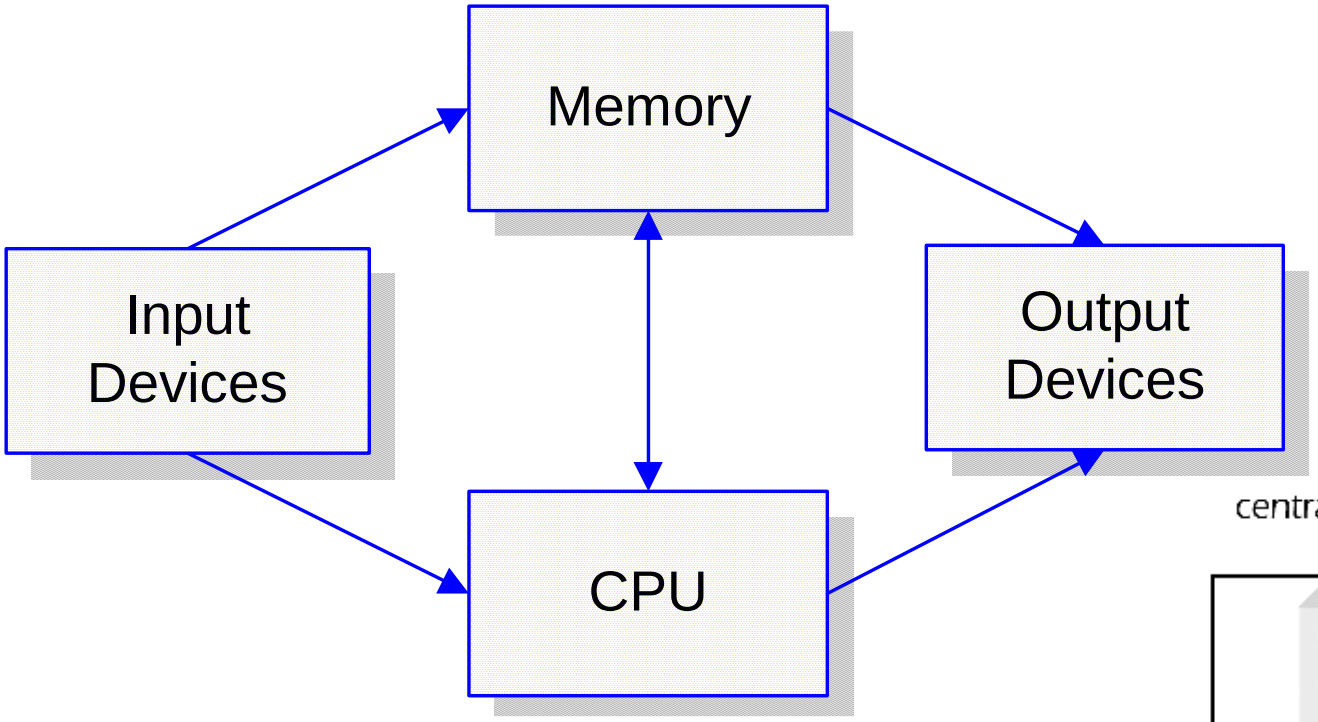
Introduction to Python – 3.4

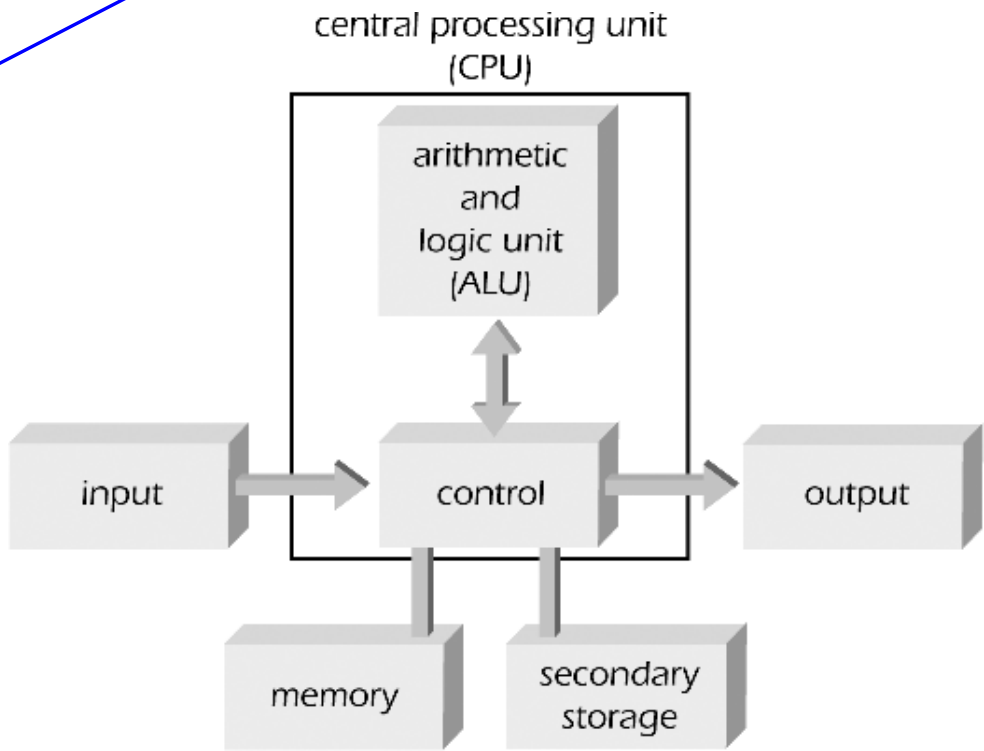
- Python is a
- high-level,
- interpreted,
- interactive
- object-oriented
- scripting language.
- It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

Introduction to Python – 3.4

- A **scripting language** or **script language**
- is a programming language that supports **scripts**, programs written for a special run-time environment that can interpret (rather than compile) and automate the execution of tasks that could alternatively be executed one-by-one by a human operator.
- Environments that can be automated through scripting include software applications, web pages within a web browser, the shells of operating systems (OS), and embedded systems.

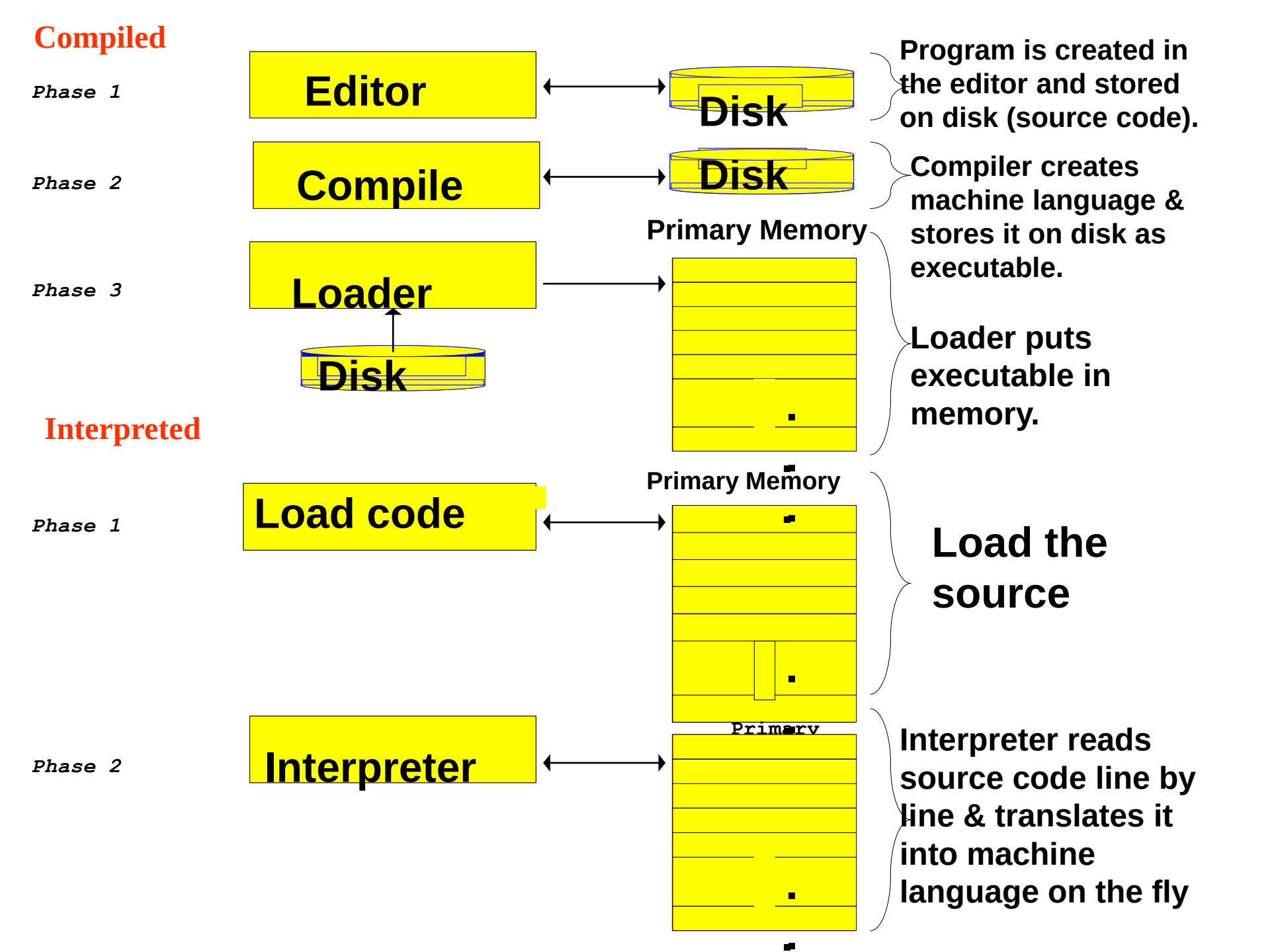
Computer Organization Basics





Translation System

- Set of programs used to develop software (i.e., other programs!)
  - A key component of a translation system is a translator
- Some types of translators
  - Interpreter
    - Converts from one language to another *one line at a time*
  - Compiler
    - Converts from one language to another *all in one shot*
  - Linker
    - Combines resources
- Examples
  - Microsoft Visual C++®, C++Builder®, g++, Code Warrior®
    - Performs compilation, linking, and other activities for different computer architectures…


Compiled
Phase 1
Editor
Disk
Program is created in the editor and stored on disk (source code).
Phase 2
Compile
Disk
Compiler creates machine language & stores it on disk as executable.
Primary Memory
Phase 3
Loader
Disk
Loader puts executable in memory.
Interpreted
Primary Memory
Phase 1
Load code
Load the source
Phase 2
Interpreter
Interpreter reads source code line by line & translates it into machine language on the fly

Introduction to Python – 3.7 Types

- **Python is Interpreted:**
- Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.
- **Python is Interactive:**
- One can give input at Python prompt and interact with the interpreter directly to write your programs.
- **Python is Object-Oriented:**
- Python supports Object-Oriented style or technique of programming that encapsulates code within objects.
- **Python is a Beginner's Language:**
- Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

Introduction to Python – 3.7 Features

- Python's features include:
- **Easy-to-learn:**
- **Easy-to-read:**
- **Easy-to-maintain:**
- **Interactive Mode:**
- **Portable:** .
- **Databases:**
- **GUI Programming:**
- **Extendable:**

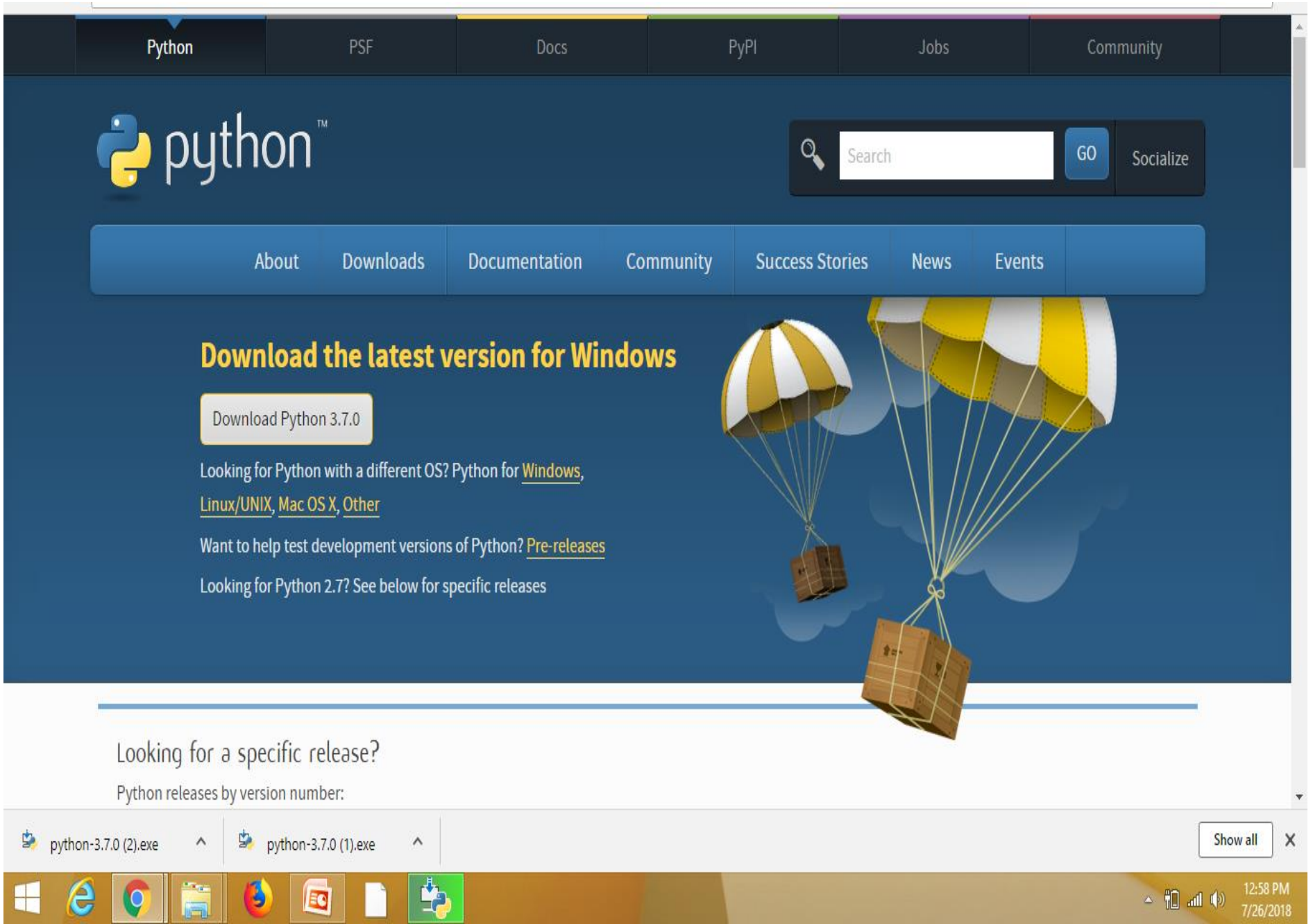
Extendable

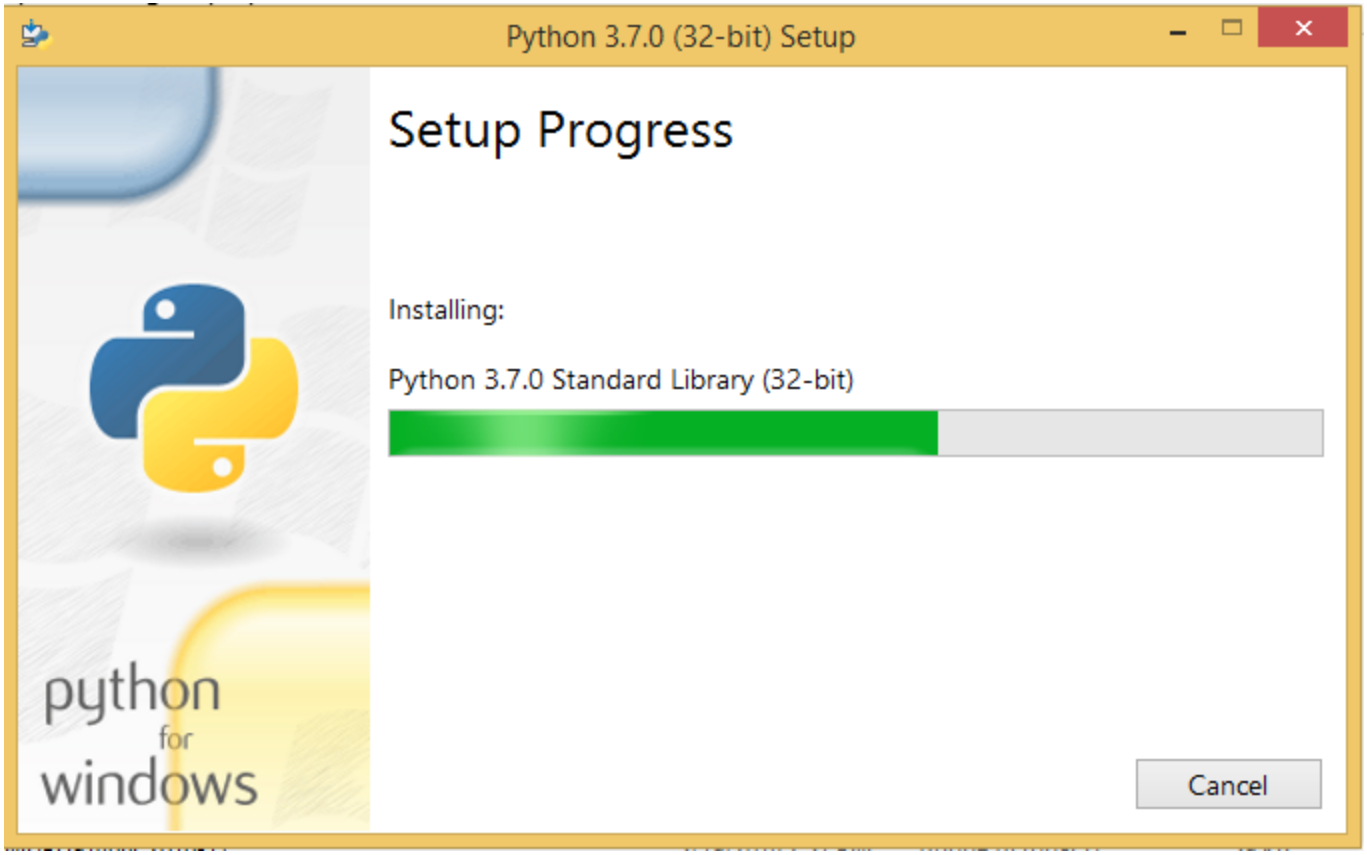
- **"extending Python" refers to**
- **writing Python modules in C — C extension modules.**
- **It's not extending the language itself (syntax, constructs, etc), but**
- **it does let you interface Python with libraries written in other languages.**
- **Mainly C or C++,**
- **But using C as a bridge you can call other languages as well that provide C interfaces.**

Introduction to Python – 3.4

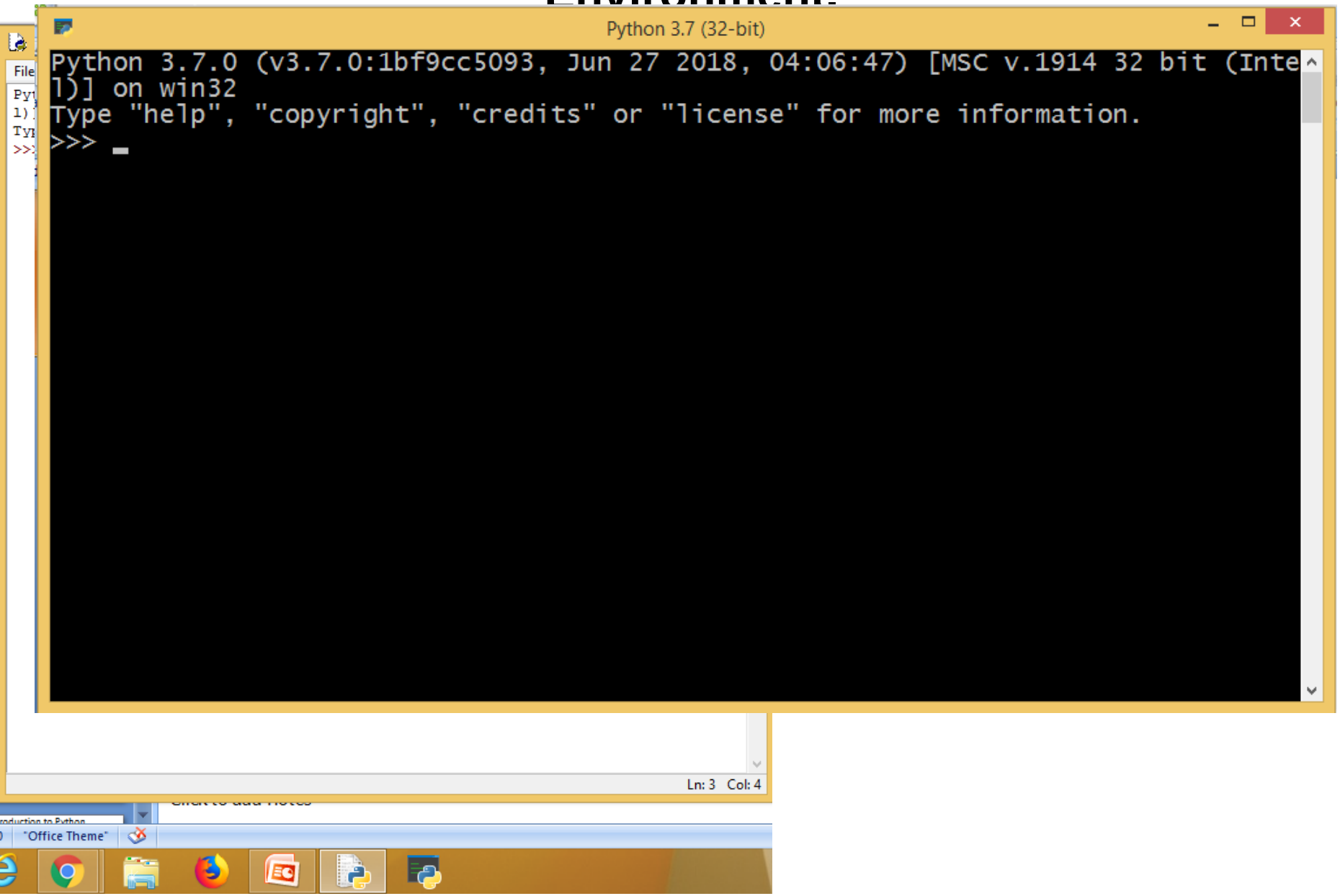
- Python Environment
- Python is available on a wide variety of platforms including Linux, Ubantu and Mac OS X.

Introduction to Python – 3.7.0




Python 3.7.0 (32-bit) Setup
Setup Progress
Installing:
Python 3.7.0 Standard Library (32-bit)
python
for
windows
Cancel

Python's IDLE : Integrated Development and Learning Environment



Python's IDLE : Integrated Development and Learning Environment.

- IDLE has the following features:
- Cross-Platform: works mostly the same on Windows, Unix, and Mac OS X.
- IDLE has two main window types, the Shell window and the Editor window.
- **File**: New File, Open, Close, Recent, Save, Save As
- **Format**: Indent (default 4), Un-indent, Comment, un-comment, Tab (set space), Un-Tab,
- **Edit**: Find in the editor, replace within editor windows, Select All, Go to Line.
- **Run**: Python Shell, Run Module (F5)

Does Python create .exe file

- Python files have extension as .py.
- They contain byte code, which is what the Python interpreter compiles the source to.
- Compiled Python Files
- This code is then executed by Python's virtual machine.
- Python is an interpreted language, as opposed to a compiled one,
- There is a presence of the bytecode compiler.
- This means that source files can be run directly without explicitly creating an executable which is then run.