BUSINESS
DEVELOPMENT
GROUP

CREATE
YOUR FUTURE

Agenda

Intro To Python

- What is Python
- History of Python
- Python Application Area
- What is Interpreter
- Python Interpreter(Installation)

Visual Studio Code

- What is IDE
- Why Visual Studio Code
- Installation
- Environment Setup
- Features

Intro To GIT

- Version Control System
- What is Git
- GitHub

What is Python

- Free and Open Source
- Scripting Language
- Interpreted
- Object-Oriented
- High-level programming language
- Extensible
- Integrated
- Expressive Language

History of Python

- Python was conceived in the late 1980s by Guido van Rossum
- First appeared in February 1991: 30 year ago
- Python 2.0 was released in 2000
- Python 3.0 was released in 2008
- Python 3.0 is a major revision of language and is not compatible with python 2
- Since January 1, 2020 python 2 is no longer supported
- Python 3.9 is the last python version for now

Python Application Area

- AI and Machine Learning
- Data Analytics
- Data Visualization
  - Ploty
  - Pandas Visualization
- Programming application
  - GUI
  - API
- Web development
  - Django
  - Pyramid
  - Flask
- Game development
  - Pygame
- Language development
- Finance
- SEO
- Design

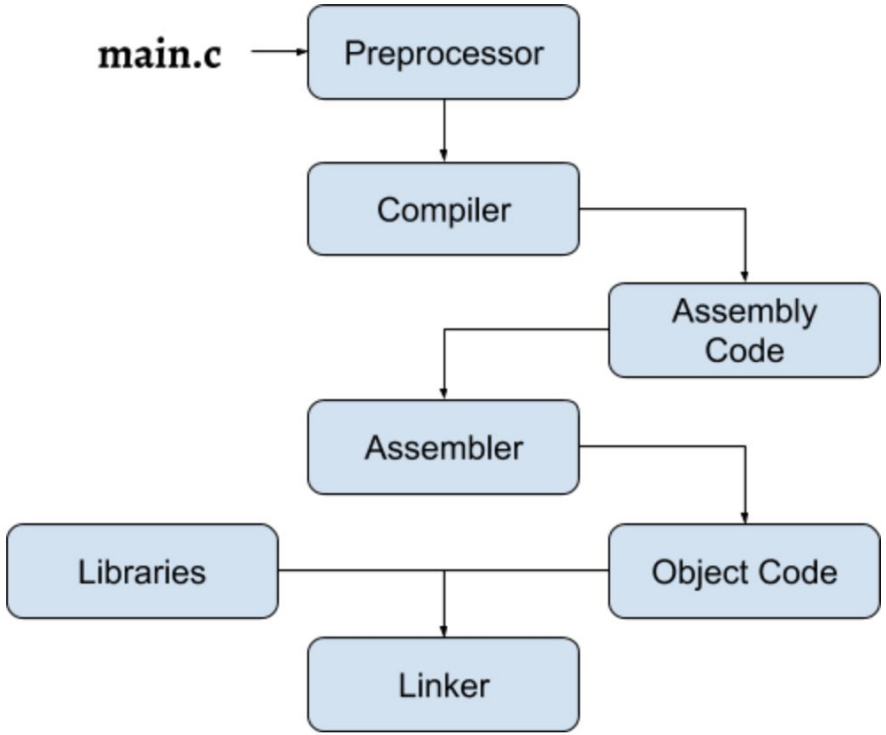
What is Interpreter

- Program
- Executes instructions written in a high-level language
- Process code at a run time
- Checking the code for errors line by line
- No Object Code is generated, hence are memory efficient.
- Programming languages like JavaScript, Python, Ruby use interpreters.

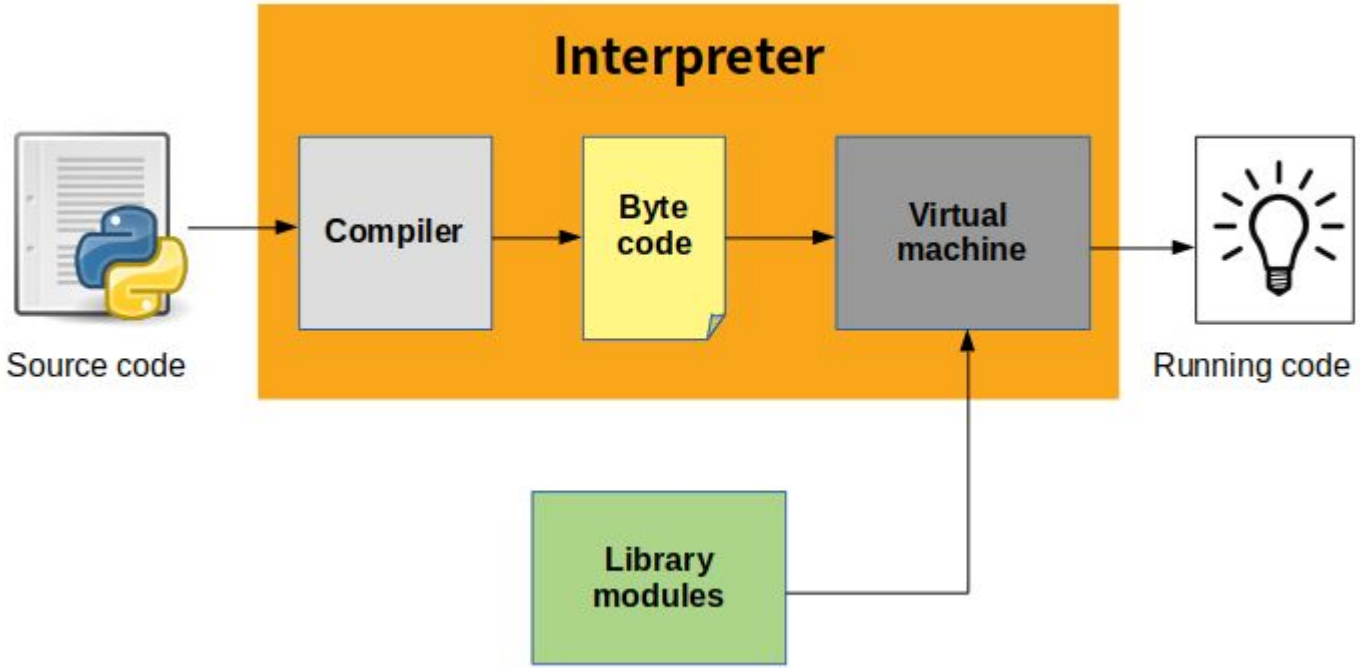
What is compiler

- Program
- Takes the entire program as input
- Generate machine code
- Checking the code for errors during compilation process
- Compiled program takes more memory
- Example of programming languages that use compilers: C, C++, Java, COBOL

Compiling process



Python Interpreter



Python Installation

- Python installation link https://www.python.org/downloads/
- Download python 3.x version
- Open the .exe file
- Follow the installation instructions
- Add python3.x to PATH
- Open python 3.x interpreter user interface
- Print “hello team” text

Code Editor vs IDE

- Developer's tool designed to edit the source code of computers programs
- Text editor with powerful built-in features
- Key features
  - Syntax highlighting
  - Printing
  - Multiview
  - Preview window
- Code editors
  - Atom
  - Sublime Text
  - Notepad++
  - VIM
  - Visual Studio Code

- Integrated Development Environment
- Set of software development tools designed to make coding easier.
- Key features
  - Text editing
  - Debugging
  - GUI
  - Syntax highlighting
  - Unit testing
  - Code completion(Autocomplete)
  - IDE's
    - NetBeans
    - Eclipse
    - IntelliJ
    - Visual Studio
    - PyCharm

Visual Studio Code 

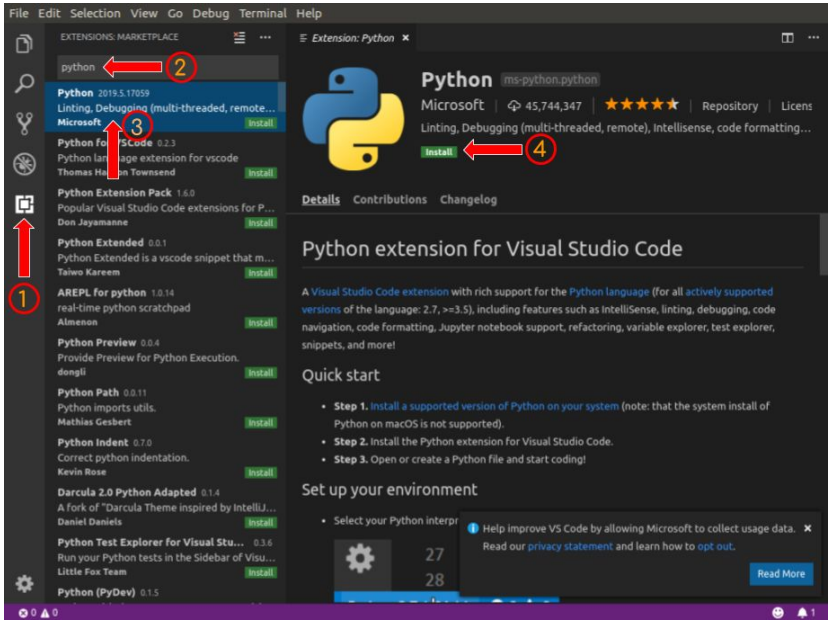
- Built-in open source-code editor made by Microsoft
- Cross-Platform
- Fast
- Embedded Version Control
- Use less memory
- Support a huge amount of languages

Visual Studio Code Installation

- Download the Visual Studio Code installer for Windows (32 or 64 bit, depending on your system)
  - https://code.visualstudio.com/download
- Run the installer VSCodeUserSetup-{version}.exe
- Follow the instructions
- Select “Create a desktop icon” checkbox
- Select “Add to PATH” checkbox
- By default, VS Code is installed under C:\users\{username}\AppData\Local\Programs\Microsoft VS Code
- Launch Visual Studio Code

Visual Studio Code Setup

- Open EXTENSIONS toolbar(Ctrl+Shift+x)
- Type Python and Install python extension for Visual Studio Code
- Create a folder somewhere in your computer
- Select the folder what you created by File->Open Folder
- Create a new file with .py extension
- Write print(“Hello Team”) text
- Select python interpreter(Ctrl+Shift+p)
- Type “Python interpreter” and select interpreter
- Open the terminal (View->Terminal or Ctrl`)
- Run you code (python some_file.py)
- Congratulations!!!

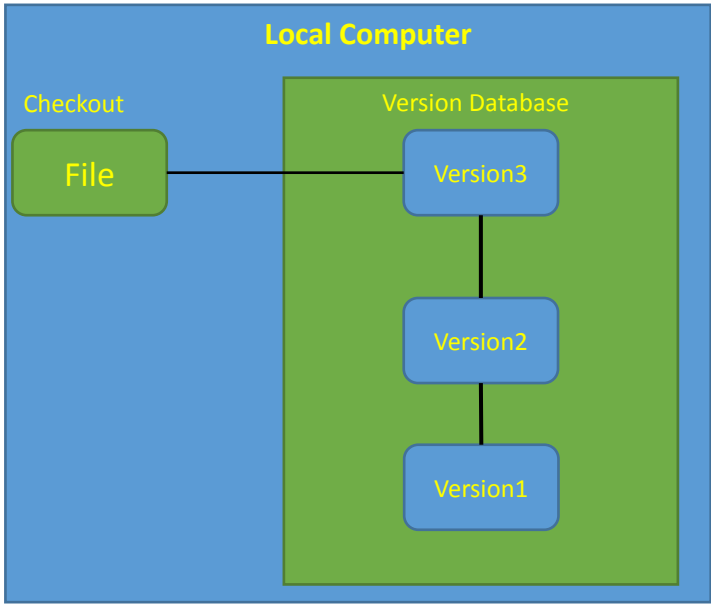


Version Control Systems

- Process management system
- Also called revision control system
- Maintain changes recorded in a file or set of files over period of time.
- Each change is maintained as a version
- User can track specific versions later
- Allow to compare different versions

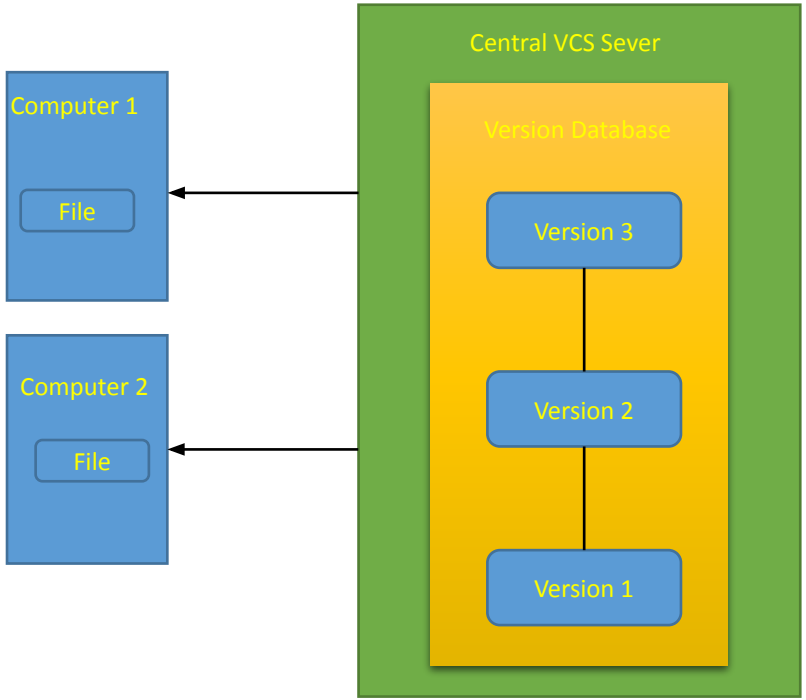
Version Control Systems Types

- Local Version Control System
  - Maintains track of files within the local system
  - This approach is very common and simple
  - This type is also error prone which means the chances of accidentally writing to the wrong file is higher.
- Tools
  - RCS



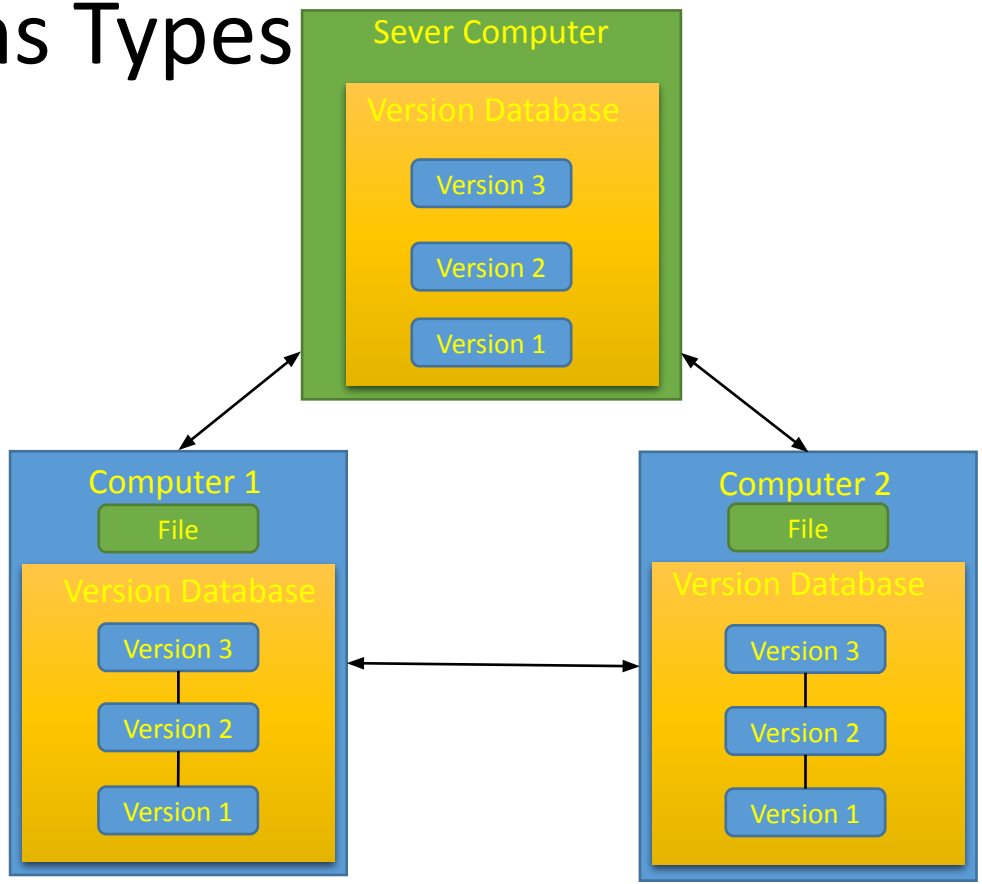
Version Control Systems Types

- Centralized Version Control Systems
  - Files are tracked under the centralized sever
  - Single server that contains all the versioned files
  - Everyone knows to a certain degree what everyone else on the project is doing
  - Disadvantages
    - Single point of failure
  - Tools
    - Tortoise SVN
    - CVS
    - Bazaar
    - Subversion
    - Perforce



Version Control Systems Types

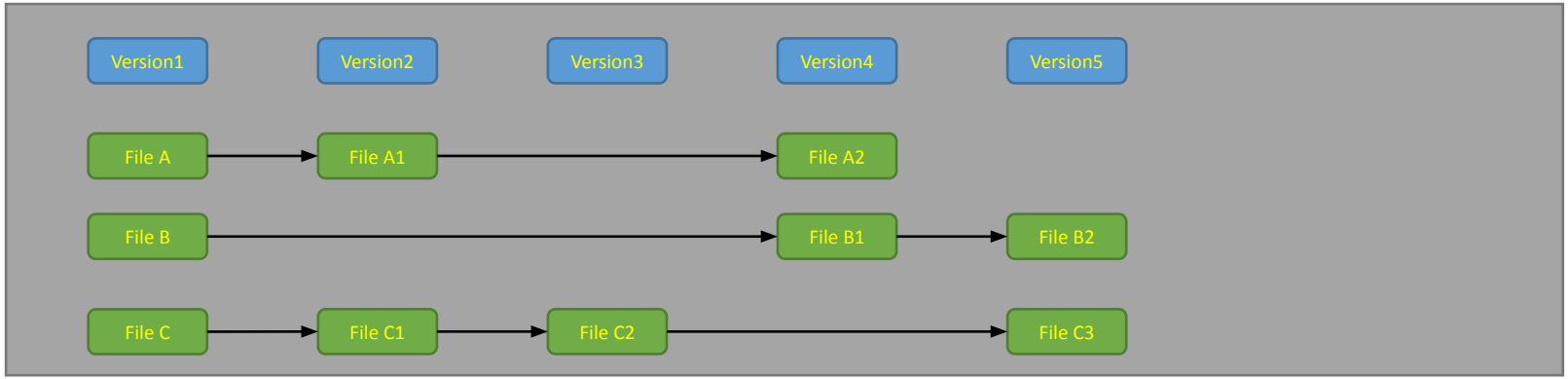
- Distributed Version Control Systems
  - Fully mirror the repository, including its full history
  - Every clone is really a full backup of all the data
  - Several remote repositories
  - Availability collaborate with different groups of people in different ways simultaneously within the same project
  - Allow set up several types of workflows
  - Tools
    - Git
    - Mercurial

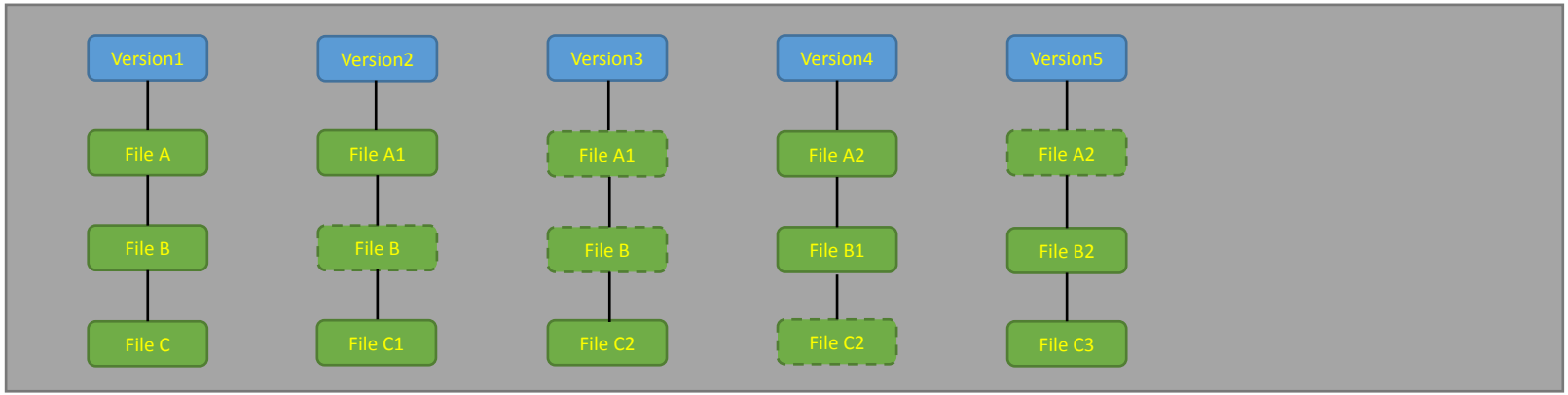


GIT 

- First developed by the creator of Linux kernel, Linus Torvalds in 2005
- Goals
  - Speed
  - Simple design
  - Strong support for non-linear development(thousands of parallel branches)
  - Fully distributed
  - Stores series of snapshots of a miniature filesystem
  - If file is not changed GIT make a link to the previous identical file it has already stored

GIT


Version1
Version2
Version3
Version4
Version5
File A
File A1
File A2
File B
File B1
File B2
File C
File C1
File C2
File C3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File A1
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File A2
File A2
File B
File B
File B
File B1
File B2
File C
File C1
File C2
File C2
File C3

SAME **YOU**
JUST **BETTER**

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