

Python

Class 1 Notes

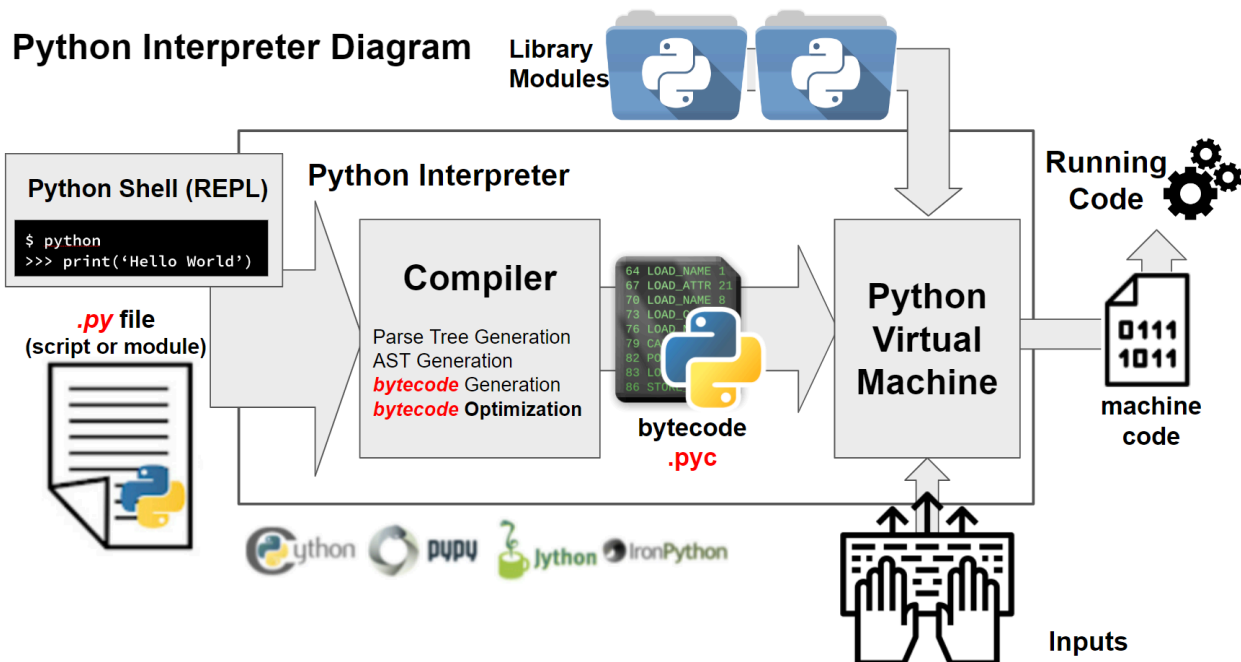
- Python language was introduced by **Guido Van Rossum**.
- Python is an **object oriented , high level, interpreted language** that's easy to use and runs on many operating systems including windows, Mac OS X, Linux and more.
- It **supports basic data type** such as numbers and strings as well as **more complex datatype** like lists and dictionaries ,that can greatly simplify data processing
- It supports several program paradigm **Procedural programming, functional programming and Object Oriented Programming**
- Python is slow compared to Java, c or c++

What is functional programming?

Pure function, higher order function, first class function, Recursion, variables are immutable - We can create new variables – but we can't modify existing variables.

What is First class function?

- We can assign function to a variable,
- Function can be passed as an argument
- return a function from a function
- can store function in a data structure like list, dictionaries etc.



What is a compiler?

A compiler is a program High level programming language to machine code ex: c, c++

What is an interpreter?

An interpreter is a program that directly executes the instructions in a high-level language, line by line into machine code.

Java, Python - both - compiler + interpreter

Architecture of Python Virtual Machine

PVM handles

1. Bytecode Generation
2. Interpreter loop
3. Memory Management - memory allocation and garbage collection to manage the memory used by Python objects dynamically.

Applications

- Machine Learning
- GUI
- Software Development
- Web Development
- Python is used in Machine Learning, Data Science, Big Data, Web Development, Scripting.
- Python is commonly used for developing websites and software, task automation, data analysis, and data visualization

Plan for Tomorrow

- Library & Framework proper definition
- Data Types
- Variable
- Function
- Practical Session