Large Standard Libraries

A library is predefined programs with predefined functionality or pre written functions. Python provides large set of libraries.

This makes it application development easy.

This libraries are exists in a repository called,

www.pypi.org (Python Package Index)

Python libraries are called packages, which are collection of programs (modules).

Data Science Libraries

       Pandas
       Numpy
       Scipy
       Matplotlib
       ScikitLearn

Web Development Libraries

       Django
       Flask
       Cherrypy
       FastAPI

Dynamic Programming Language

Programming languages are two types
1. Static Programming Language
2. Dynamic Programming Language

Static Programming Language

C,C++,Java are called static programming languages or statically typed programming languages.

In statically typed programming languages, variable declarations are required. Variables are bind with one data type.

Dynamically typed programming languages

All scripting languages are dynamically typed programming languages.
Dynamically typed programming language variable declarations are not required. Variables are not bind with one data type. The data type of variable changes based on value.

Platform Independent
Programming Languages are two types
 1. Platform dependent languages
 2. Platform Independent languages

What is platform?
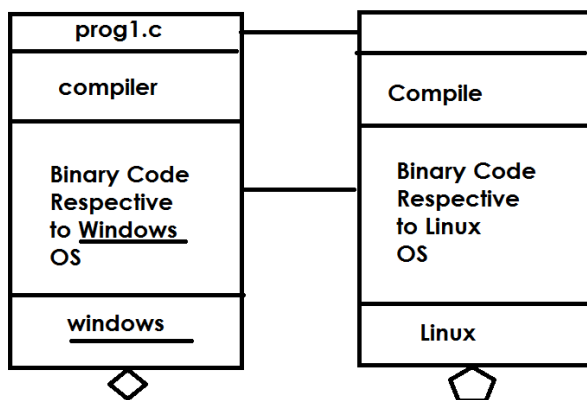Platform is a software which provides a good environment for developing and execution of applications.
Operating System is called platform.
Operating System is a software which acts are interface between software and hardware.

Platform dependent languages
C,C++ are called platform dependent languages.
In platform dependent languages development environment and execution environment must be same.

Why C,C++ are platform dependent languages?

1. When C,C++ programs compiled, C,C++ compilers generates binary code respective to operating System. This binary code is OS dependent.
2. Data types size of platform dependent languages are not fixed, it changes from one OS to another OS.
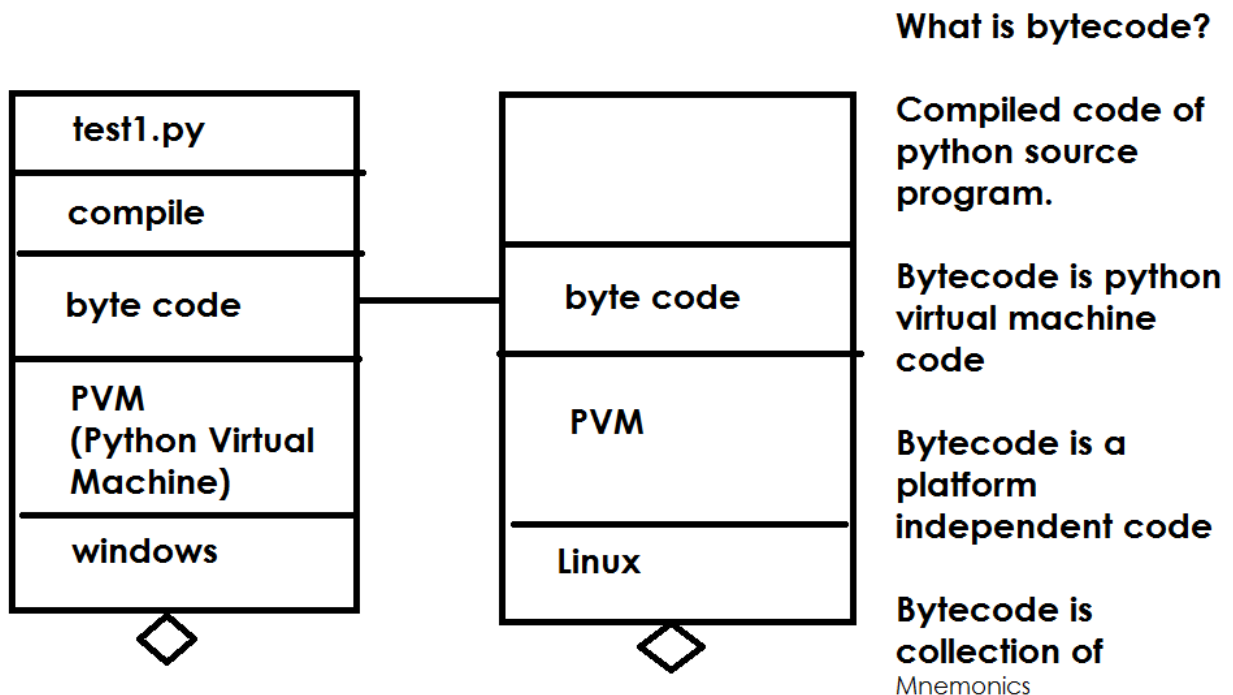
	16bitOS	32bitOS
Int	2bytes	4bytes
Long	4bytes	8bytes

Platform Independent Language
In platform independent languages, development environment and execution environment may not be same.

WORA → WRITE ONCE AND RUN ANY WHERE
CORA → COMPILE ONCE AND RUN ANY WHERE

What is bytecode?

Compiled code of python source program.

Bytecode is python virtual machine code

Bytecode is a platform independent code

Bytecode is collection of Mnemonics

test1.py
compile
byte code
PVM (Python Virtual Machine)
windows

byte code
PVM
Linux

What is PVM?

PVM stands Python Virtual Machine.
PVM is software which provides runtime environment for executing byte code/python programs.
PVM translates bytecode into binary code.

codewithsatishgupta