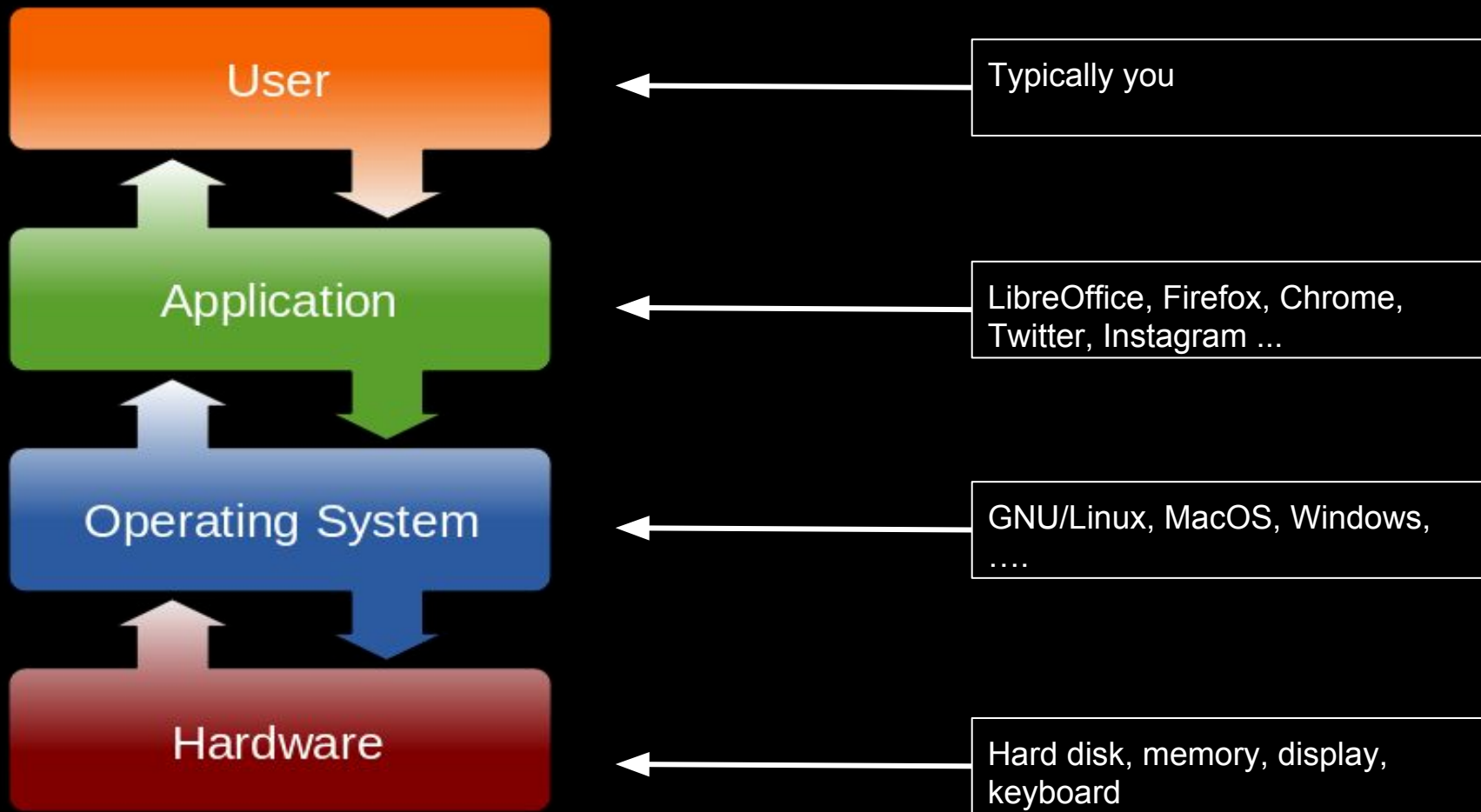


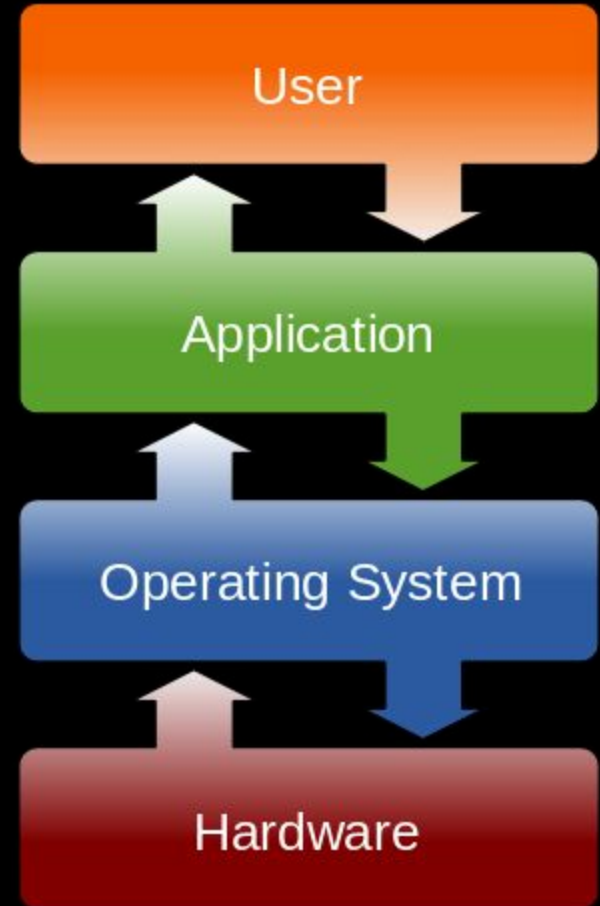
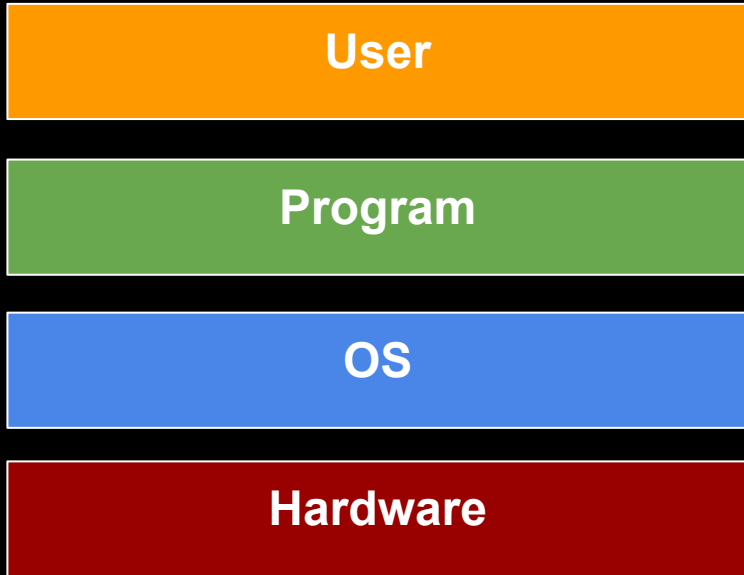
Program

OS

Remember?



OS



“A computer program, or just a program, is a sequence of instructions, written to perform a specified task on a computer“

https://en.wikipedia.org/wiki/Computer_program

“The program has an executable form that the computer can use directly to execute the instructions“

[https://en.wikipedia.org/wiki/Computer program](https://en.wikipedia.org/wiki/Computer_program)

“two” types

- interpreted programs (Python, php)
- compiled programs (C, C++,..)

and ...

- byte compiled programs (Java)

C, C++, Ada,

https://en.wikipedia.org/wiki/Computer_program

Program written in C

OS

Hardware

OS



User

Program

OS

Hardware

OS - Interpreter

“Alternatively, computer programs may be executed with the aid of an **interpreter**, or may be embedded directly into hardware.”

Python, php

https://en.wikipedia.org/wiki/Computer_program

Program written in Python

Python

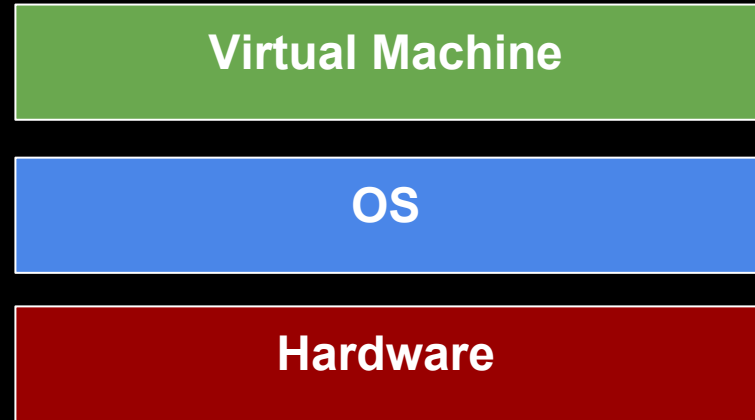
OS

Hardware

OS - Virtual Machine

“In computing, a virtual machine (VM) is an emulation of a particular computer system.”

https://en.wikipedia.org/wiki/Virtual_machine

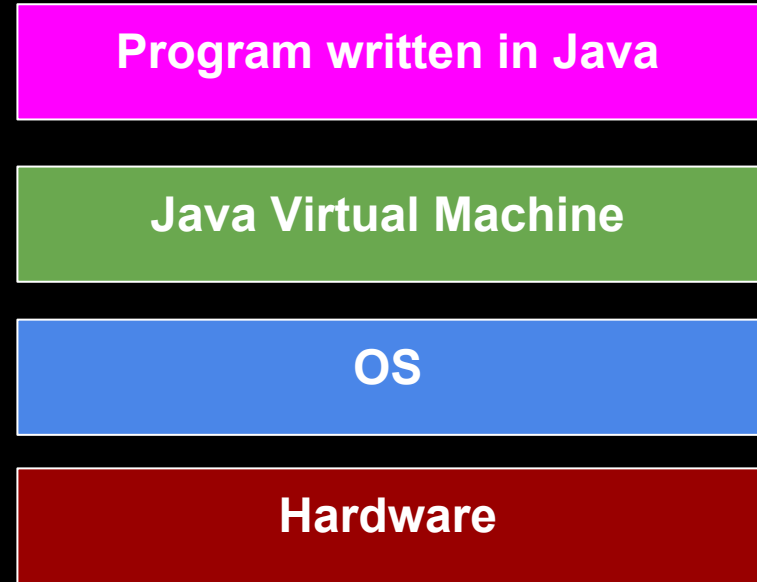


OS - Java Virtual Machine

“A Java virtual machine (JVM) is an abstract computing machine that enables a computer to run a Java program”

Note: C# executes in a similar way

https://en.wikipedia.org/wiki/Java_virtual_machine



User

Program written in Java

Program written in Python

Java Virtual Machine

Program written in C

Python

OS

Hardware

Process

“In computing, a process is an instance of a computer program that is being executed.”

[https://en.wikipedia.org/wiki/Process \(computing\)](https://en.wikipedia.org/wiki/Process_(computing))