

WHAT IS SOFTWARE?

1 SOFTWARE AND PROGRAMMING LANGUAGES

1 Software

Software is a set of instructions, data or programs used to operate computers and execute specific tasks.
the software is a generic term used to refer to applications, scripts, and programs that run on a device.

2 Machine Language

The language that the computers understand
has only two letters which are 0 and 1
it's hard to understand and use for people, other types of languages are developed

3 Assembly Language

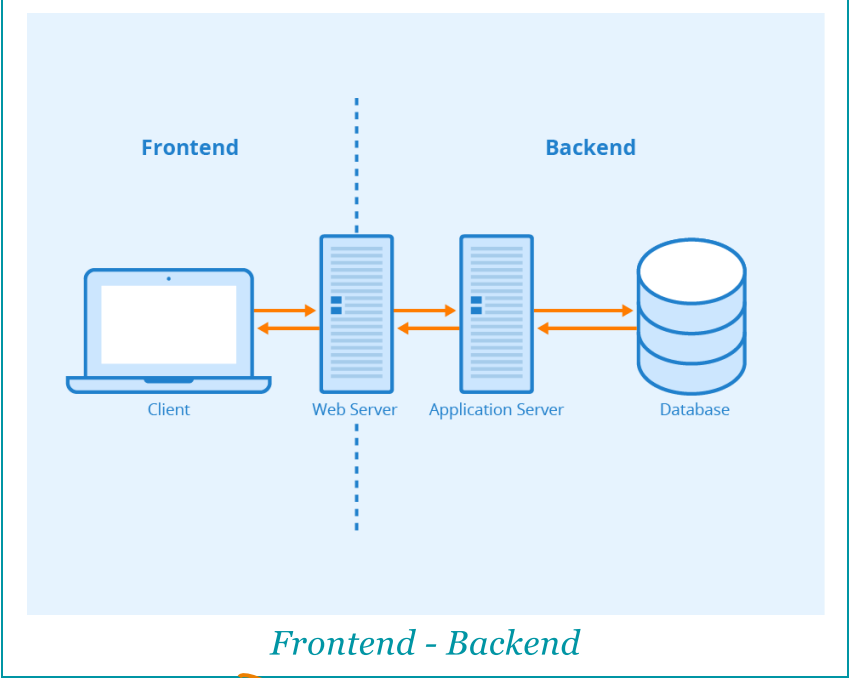
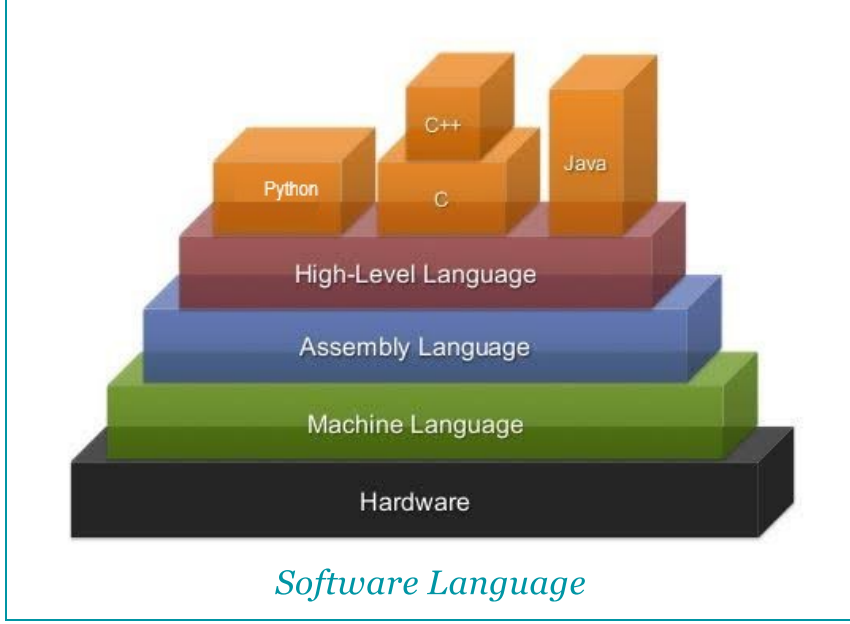
Assembly Language uses short descriptive words, know as mnemonic
mnemonic add means to add two numbers.
Assembly Language is not useful for computers. For that reason, it should be translated into machine language. The translator is called "assembler".
Assembly L. = ST 1,[801] Machine L. = 00100101 11010011

4 High Level Languages

emerged in the 1950s
The commands in high level programming languages are called statements
A program in a high-level language is called source program or source code.
As in the assembly language, the source code also should be translated to machine code before it gets executed.
High-level languages should use tools called compiler or interpreter to make this translation.

Difference between compiler and interpreter

A compiler takes entire program and converts it into object code which is typically stored in a file. The object code is also refereed as binary code and can be directly executed by the machine after linking.
An Interpreter directly executes instructions written in a programming or scripting language without previously converting them to an object code or machine code.



5 BACKEND VS. FRONTEND

1 Introduction

related to web and application development.
The frontend of a website or application is what you see and interact with on your device screen.
user experiences
The backend (or "server-side") is the portion of the website you don't see

2 Backend

It's responsible for storing and organizing data, and ensuring everything on the client-side actually works.
of three parts: a server, an application, and a database.
window application Google chrome, Opera, Safari etc
Backend developer positions are often called programmers or web developers.

3 Frontend

manages everything that users visually see
HTML, CSS, Javascript.
Web designer, designs websites with different tools such as photoshop, fireworks or wordpress
User Interface (UI) Designer is basically a visual designer and is generally focused on design.
User Experience (UX) designers work in the front-end, studying and researching how people use the sites. Then they make changes through a lot of testing.

2 LIBRARIES

Software libraries and real-life libraries are similar.
A software library generally consists of pre-written code, classes, procedures, scripts, configuration data and more
a developer may add a mathematics software library to the program to eliminate the need for writing complex functions.

3 PACKAGES

★ **Software Package is a set of software that fulfills a particular function**
Packages automatically manage software and libraries on your system.
★ **Package Managers are the tool used to manage Software and Libraries (together called Packages) in your OS.**

4 FRAMEWORKS

1 Frameworks

Examples
the life of a developer easier by supplying tools and design patterns
Frameworks are like the father of software libraries.
Frameworks are collections of libraries, classes, functions, and constants designed to complete a task easier.
They Give You A Collection Of Different Tasks Codes And Avoid You From Reinventing The Wheel.
Frameworks give you a working environment.
mobile application -Javascript programming- React - Native framework

2 Model-View-Controller (MVC)

is an architectural pattern that separates an application into three main logical components:
the most frequently used industry-standard
1 ★ **Model**, the data represented in some way, usually from a database.
2 ★ **View**, what the user sees. For example the web page you look at.
3 ★ **Controller**, the code that manipulates the data in the database. For example insert/delete/update user information to your web site.

