Open Source Software (OSS)

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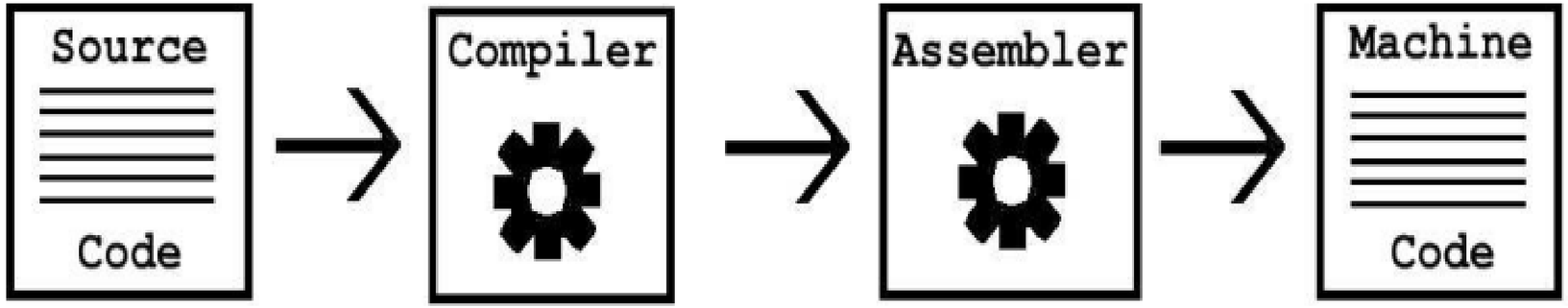
Concepts

Operating System (OS) is an interface between a computer user and computer hardware. An operating system is a software which performs all the basic tasks like file management, memory management, process management, handling input and output, and controlling external devices such as disk drives and printers.

Application Software is computing software designed to carry out a specific task other than one relating to the operation of the computer itself, typically to be used by end-users.

Examples of an application include a word processor and a media player.

A computer ***programmer*** writes **software**, or **computer programs**. A program is collection of *commands or instruction* which tell the computer what to do in order to carry out certain tasks. A program usually starts out as *source code*. This higher-level set of commands is written in a *programming language* such as C or Java. After that, a tool known as a *compiler* translates this to a lower-level language known as *assembly language*. Another tool known as an *assembler* breaks the assembly code down to the final stage of *machine language*—the lowest level—which the computer understands *natively*


Source
Code
Compiler
Assembler
Machine
Code

Question

What is the difference between assembler and compiler???

source code we do not mean machine language that only computers can understand—we are speaking of higher-level languages such as C and Java. A few other popular programming languages are C++, Perl, and Python. Some are harder than others to understand and program in, but they are all much easier to work with compared to the intricate machine language they get turned into after the programs are compiled and assembled

Software Engineering (SE) is a branch of computer science which includes the development and building of computer systems software and applications software.

Computer System Software is a type of computer program that is designed to run a computer's hardware and application programs. the system software is the interface between the hardware and user applications. The operating system is the best-known example of system software. The OS manages all the other programs in a computer.

It is composed of programs that include computing utilities and operations systems.

2

Open source software

open source

WHAT IS OPEN-SOURCE?

Open-source, sometimes referred to as Open-Source Software (OSS), is a software program publicly distributed with its source code, making it accessible for anyone to modify and distribute as they deem fit. A source code is the set of instructions and statements written and manipulated by computer programmers, using a computer programming language, to control how a program or application behaves.

When a source code is accessible by other programmers, they can modify its programs by adding to it for enhancement, changing it to fix an error, or simply manipulating it to fit their own needs. Open-Source Software (OSS) is usually developed in a collaborative way, relying on communities of developers and users. Typically, OSS includes a license that determines the way people can use, study, modify, and distribute the software. For example, a license may stipulate that anyone who alters and shares an OSS program with others must also share that program's source code without charging a licensing fee for it.

-Some people call software, “**Open Source Software**.” Others call it “**Free Software**.” Yet others, particularly in Europe, call it “Free/Libre or Open Source Software” (FLOSS). Capitalization of these terms varies.

-Many terms are used:

Free: referring to the freedom to use (not to “free of charge”),

Libre: which is the French translation of Free/freedom, and which is preferred by some writers to avoid the ambiguous reference to free of charge,

Open Source: which focuses more on the access to the **source**s than on the freedom to redistribute.

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-The key fact that makes open source software (OSS) different from proprietary software is its **license.**

-The license indicates how the software may be used. OSS is unique in that it is always released under a license that has been certified to meet the **criteria** of the **Open Source Definition**

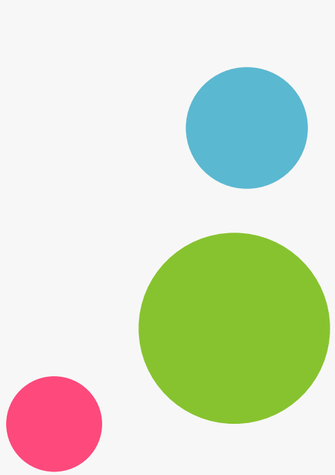
These **criteria** include the right to:

- Access the source code;
- Redistribute the software without restriction;
- Modify the source code; and
- Distribute the modified version of the software

Source code is a specialized language that allows software developers to create and modify computer programs. If you do not have legal access to the source code, then the program cannot be changed or moved to a different kind of computer

In contrast, creators of **proprietary software** usually do not make their source code available to others to modify

Why is Called Open Source Software?



-**Open**: collaboration is open to all.

-**Source**: source code is freely shared.

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How Did Open Source Get Started?

In the 1970s, proprietary software – i.e. software that did not allow users to redistribute it, modify it, or access its source code – became the norm.

The development of open source software was a reaction to the fact that changes or improvements could not be made to proprietary software by other developers or users. The open source movement started with Richard Stallman's general public license model (in the 1980s), which holds that software should be freely modifiable, with the condition that if you make improvements to the software, you must put the improvements back in the open source community. The rationale for the open source movement is that a larger group of programmers not concerned with proprietary ownership will produce a better product.

4

advantage

What is the advantages of OSS

Advantages of Open Source Software

Lower cost

lower cost of OSS is generally one of the key reasons why small businesses choose to adopt this software. Because it does not require licensing fee

Flexibility

A programmer can take a standard software package and modify it to better suit your business needs. You can usually hire a programmer to add a particular function to open source software.

Speed of Change

Updates for OSS are often more frequently available because more users are inspecting the code and resolving potential bugs With proprietary software, users have to rely on the updates and patches coming from the vendor.

Reliability and Quality

open source software is generally viewed to be of good quality and reliability

Lower Costs: Open source software usually does not require a licensing fee and its lower cost is generally one of the key reasons why small businesses choose to adopt this software. Make sure that you consider the total costs of ownership when considering open source software.

Flexibility: A programmer can take a standard software package and modify it to better suit business needs. You can usually hire a programmer to add a particular function to open source software.

Reliability and Quality: When looking at improved quality, you have to compare the products
themselves. It is impossible to say that open source software is better than proprietary software in terms of reliability and quality – both have a range of products. However, mature open source software is generally viewed to be of good quality and reliability. If your business is not familiar with open source software, you may only want to review some of the more mature products (e.g. Linux, Apache and Send mail)

Reduces “Vendor Lock-in : If you are using proprietary software you may be restricted to using certain vendors. Switching vendors in this case usually involves significant costs. Keep in mind though that choosing an OSS product may not make you totally independent of vendors. For some OSS products there may be a limited number of vendors that can provide you with services, upgrades or security patches.

Speed of change :Updates for OSS are often more frequently available because more users are inspecting the code and resolving potential bugs With proprietary software, users have to rely on the updates and patches coming from the vendor.

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HOMEWORK

Give me an examples of **Vendor Lock-in**

3

What are the goals of Open Source?

Shared the goal

a broad group of contributors recognize the same need and agree on how to meet

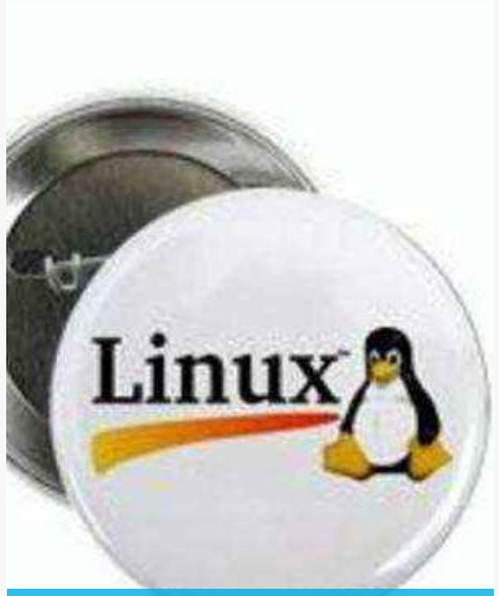
Shared the work

projects are broken into smaller tasks, and a review process screens the best contributions

Shared the results

code should be available to all and improvements should be shared to all

Examples of OSS



Linux OS

MySQL database

PHP script language and Python programming language

Mozilla Firefox web browser

Mozilla Thunderbird email client

There are open source software applications for a variety of different uses such as office automation, web design, content management, operating systems, and communications.

Thank You for Listening!

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