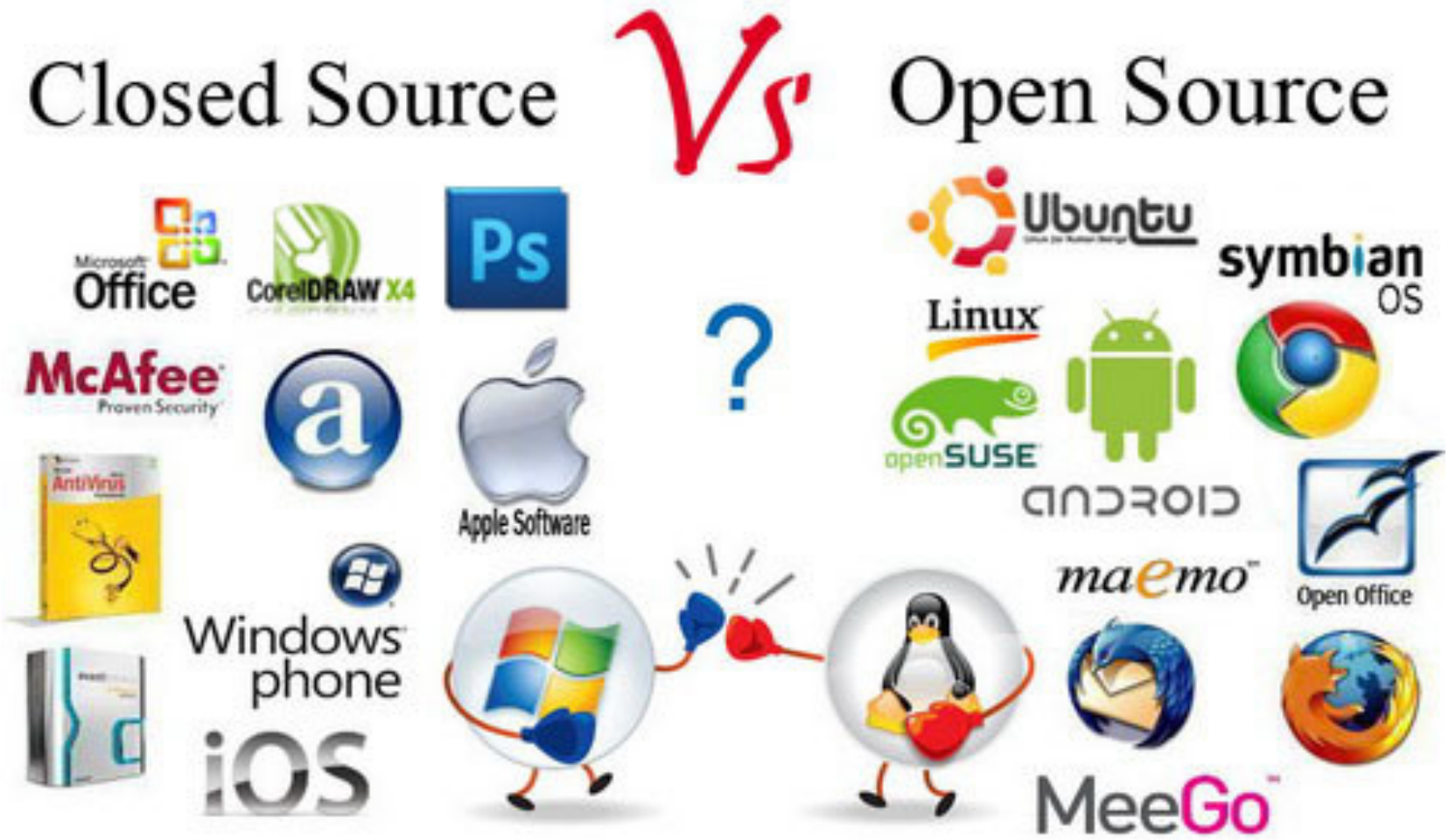
The Definition

Open-Source Software; OSS

- Open-source software is a type of computer software in which source code is released under a license in which the copyright holder grants users the rights to use, study, change, and distribute the software to anyone and for any purpose.

What is open-source SW?



The Advantages

- 1. Cheaper than commercially marketed products.
- 2. Created by skillful and talented people.
- 3. Highly reliable.
- 4. Help you become more flexible.

The Disadvantages

- 1. Vulnerable to malicious users.
- 2. Might not be as user-friendly as commer cial versions.
- 3. Don’t come with extensive support.

Free Software Movement

- The growth of SW market (1980's)
- Companies tried to limit the use, copy, modification, distribution of SW
- Against them, Richard Stallman founded Free Software Foundation
- The Free Software movement (GNU Project) began

  *GNU(**G**NU is **N**ot **U**NIX) Project

Free Software Movement

- 'Free' was considered as 'Free of charge'
- Changed the term "Free software" to "Open software"
- Founded Open Source Initiative (OSI) in 1998
- Announced Open source Definition

What is Open-source SW?

Open Source Initiative; OSI

- A non-profit corporation whose goal is to promote the use of **open source** software in the commercial world.
- To accomplish this goal, OSI maintains and promotes the **Open Source** Definition and offers the OSI Certified **Open Source** Software Certification Mark and Program

Open Source Definition; OSD

- The Open Source Definition is a document published by the Open Source Initiative, to determine whether a software license can be labeled with the open-source certification mark

Open Source Definition

1. Free Redistribution

The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.

Open Source Definition

2. Source Code

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost, preferably downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

Open Source Definition

3. Derived Works

The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.

Open Source Definition

4. Integrity of The Author's Source Code

The license may restrict source-code from being distributed in modified form *only* if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

Open Source Definition

5. No Discrimination Against Persons or Groups

The license must not discriminate against any person or group of persons.

Open Source Definition

6. No Discrimination Against Fields of Endeavor

The license must not restrict anyone from making use of the program in a specific field of endeavor.

For example, it may not restrict the program from being used in a business, or from being used for genetic research.

Open Source Definition

7. Distribution of License

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

Open Source Definition

8. License Must Not Be Specific to a Product

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

Open Source Definition

9. License Must Not Restrict Other Software

The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.

https://opensource.org/osd

Open Source Definition

10. License Must Be Technology-Neutral

No provision of the license may be predicated on any individual technology or style of interface.

For Korean version: http://korea.gnu.org/documents/copyleft/osd-korean.html

https://opensource.org/osd

Open Source License

Open Source License

- Open source licenses are licenses that comply with the Open Source Definition — in brief, they. allow software to be freely used, modified, and shared.
- To be approved by the Open Source Initiative (OSI), a license must go through the Open Source Initiative's license review process.

*Examples of Open-source Licenses

- **GNU General Public License(GPL) 2.0**
- **GNU Lesser GPL(LGPL) 2.1:**
- **Berkeley Software Distribution(BSD) License:**
- **Apache License**
- **Mozilla Public License(MPL) 1.1:**
- **MIT License**

https://opensource.org/licenses/alphabetical

How to use Open-source correctly

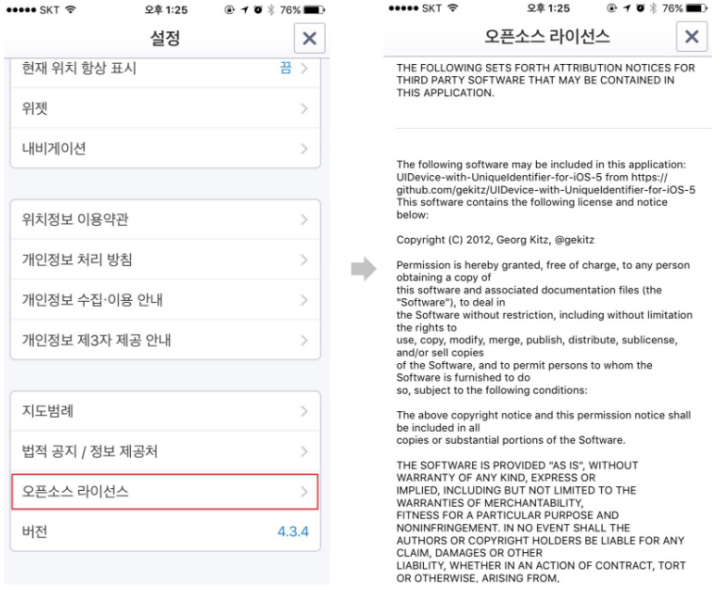
- 1: Check the license
  - If there is a specific webpage, check it from there
  - If there is a GitHub repository,
    - Check README, COPYING document inside a source code, LICENSE document, or comments
  - If found by googling,
    - Check comments or developers' response

http://tomcat.apache.org/

https://github.com/torvalds/linux

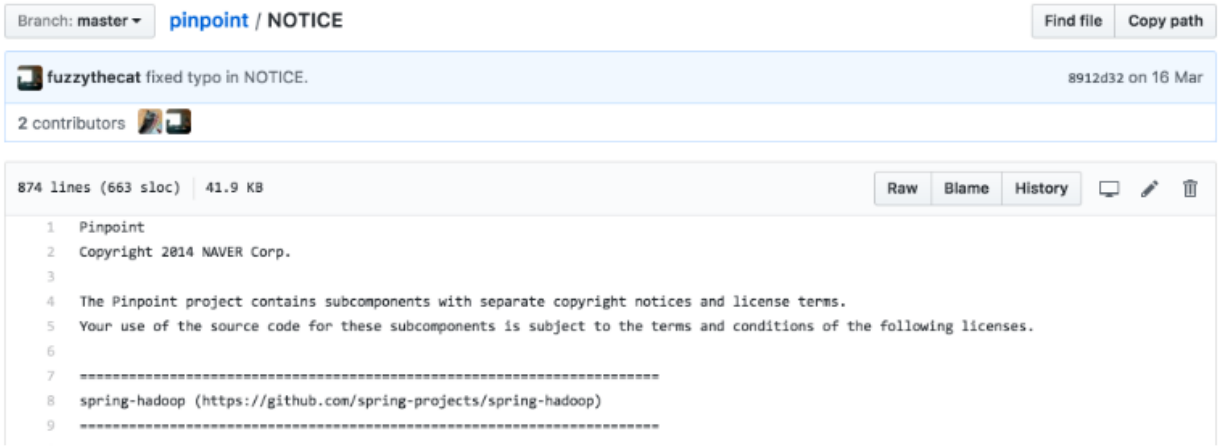
How to use Open-source correctly

- 2: Meet the requirements
  - If distributing yours as an app
    - You may show open source license info inside your app
    - An example of NaverMap for iOS



How to use Open-source correctly

- 2: Meet the requirements
  - Redistributing yours as an open source project
    - You may show the license info under NOTICE or third-party related documents
    - An example of Pinpoint Project



Examples of Open-source Projects

- **Linux Kernel**
  - Similar to Unix
    - GNU OS Project
  - The most representative open source software
  - Developed by Linus Torvalds
  - Language: C, Assembly
  - GPL License

Examples of Open-source Projects

- Ubuntu
  - Linux family
  - Mostly GPL License

ubuntu®

Examples of Open-source Projects

- Android
  - Mobile operating system developed by Google
  - Language: Java(UI), C(Core), C++, …
  - Apache License 2.0, GPL v2

Examples of Open-source Projects

- MySQL
  - Relational DB management system
  - Language: C, C++
  - GPL v2 and others

Examples of Open-source Projects

- Apache HTTP Server
  - Opensource web server
  - Language: C, XML
  - Apache License 2.0

Examples of Open-source Projects

- OpenOffice
  - For utility software
    - word processor, spreadsheet, presentation
  - Language: C++, Java
  - Apache License 2.0

Examples of Open-source Projects

- WordPress
  - Content Management System (CMS)
    - Blogging, Online forum, gallery, shopping mall
  - Language: PHP
  - GPL v2

Examples of Open-source Projects

- Firefox
  - A web browser by Mozilla Foundation
  - Language: C++, JavaScript, HTML, C, Rust
  - MPL 2.0

Examples of Open-source Projects

- Node.js:
  - an open-source, cross-platform, JavaScript runtime environment that executes JavaScript code outside a web browser
    - Used by IBM, LinkedIn, Microsoft, Netflix, Paypal etc.
  - Language: C, C++, JavaScript
  - License specified at its GitHub repository

Examples of Open-source Projects

- PHP
  - Hypertext preprocessing language for web development
    - Can be used for general purposes
  - Language influenced by: Perl, C, C++, Java, Tcl
  - PHP License

Examples of Open-source Projects

- Java:
  - a programming language for general purposes
  - GPL License

Examples of Open-source Projects

- TensorFlow:
  - Opensource machine learning framework developed by Google Brain
  - Voice recognition, translation, image search etc.
  - Language: Python, C++, CUDA
  - Apache 2.0

Examples of Open-source Projects

- GIMP:
  - Image Editor
  - Language: C
  - GPL v3 License
  - https://gitlab.gnome.org/GNOME/gimp

*Popular Open-Source Projects

1. OS: Unix, Linux
2. File Management System: 7-zip
3. Network Synchronization: SVN
4. Image Editor: GIMP
5. Terminal Emulator: PuTTY
6. Map: OpenStreetMap
7. Blog: WordPress
8. IDE: Code::Block
9. Compiler: GCC, MinGW
10. Database: PostgreSQL, MySQL, Apache Derby
11. Web browser: Firefox, Chrome
12. Web application: Ruby on Rails
13. Web container: Apache Tomcat
14. Web server: Apache Web server
15. Web application: Apache Geronimo

How to contribute to Open source projects

사람들이 오픈소스에 기여하는 이유

- 1. Companies that contribute to an open source project get to know the technology at a much deeper level than they would by "simply" using the technology.
- 2. Companies can focus efforts on adding—and leveraging—features that will benefit businesses based on experience with what works and doesn't work in the real world.
- 3. Providing opportunities for internal development teams to contribute to open source projects builds morale and reputation, and helps retain developers.
- 4. Companies that contribute to open source projects have access to the insight and experience of other members of the community.
- 5. Contributing to open source provides a clear view into the future of a project, helping companies more strategically plan for—and drive—the future.

How to contribute to Open source projects

How to participate

- Use open source SW
- Report bugs
- Request new ideas
- Fix bugs
- Review others' code
- Share your projects

How to contribute to Open source projects

Other ways to participate (without coding)

- Directing:
  - Run project-related workshops, gather people
- Design:
  - Redesign the layout, write style guide, make logos
- Documentation:
  - Work on documentation, write a tutorial, translate the existing documents