



Introduction to open-Source Software (OSS)

Concepts, strategies, and methodologies related to open-source software development

Week 02 – Lecture 04

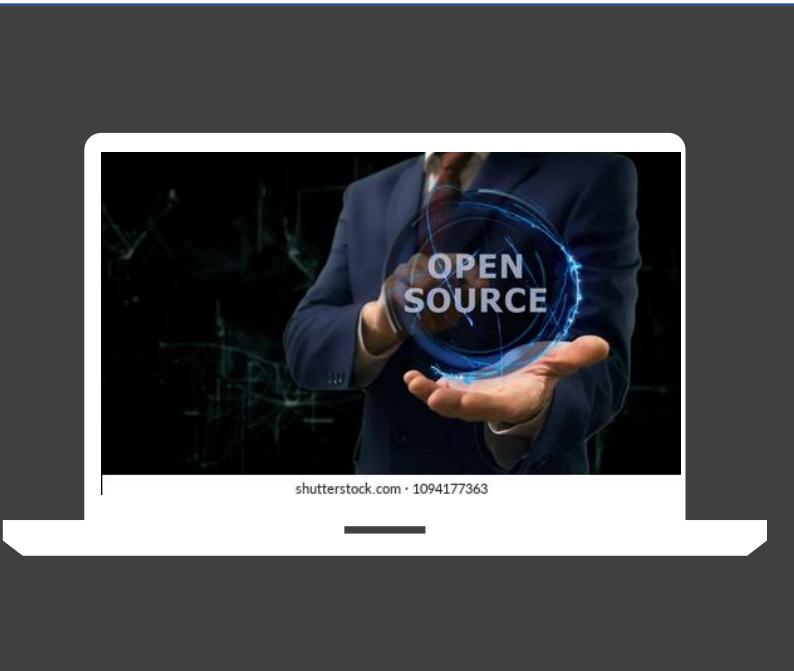


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Sejong University

Recep

- Overview of Copyright and Licenses
- Understanding the legal implications of open-source

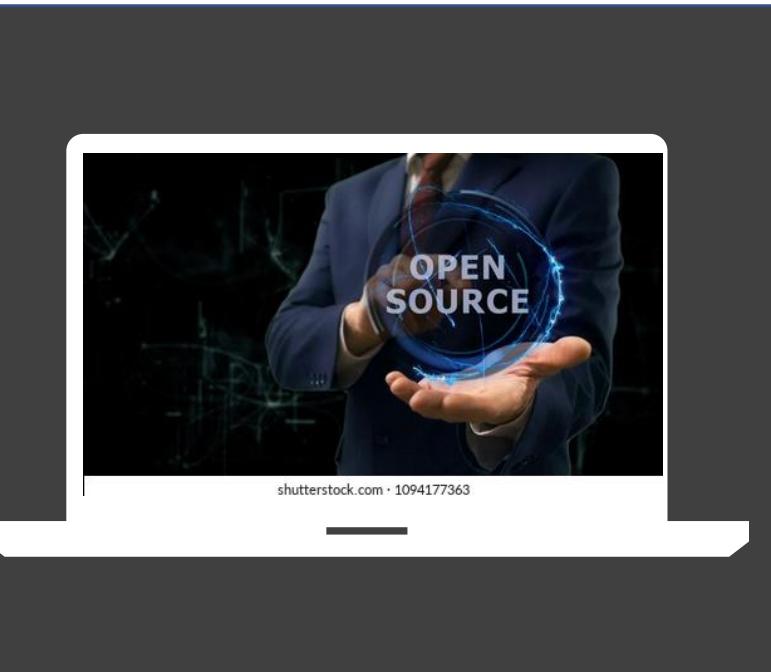


Recap

- Copyright gives creators control over their works.
- Different software licenses (proprietary, permissive, copyleft) provide various levels of freedom to users and developers.
- Knowing the license of a software project is critical for legal usage and contribution.



Today, Agenda



- Licenses in a Nutshell
- Software license categories
- Aspects of Licenses
- The GPL and License Compatibility
- Choosing a License

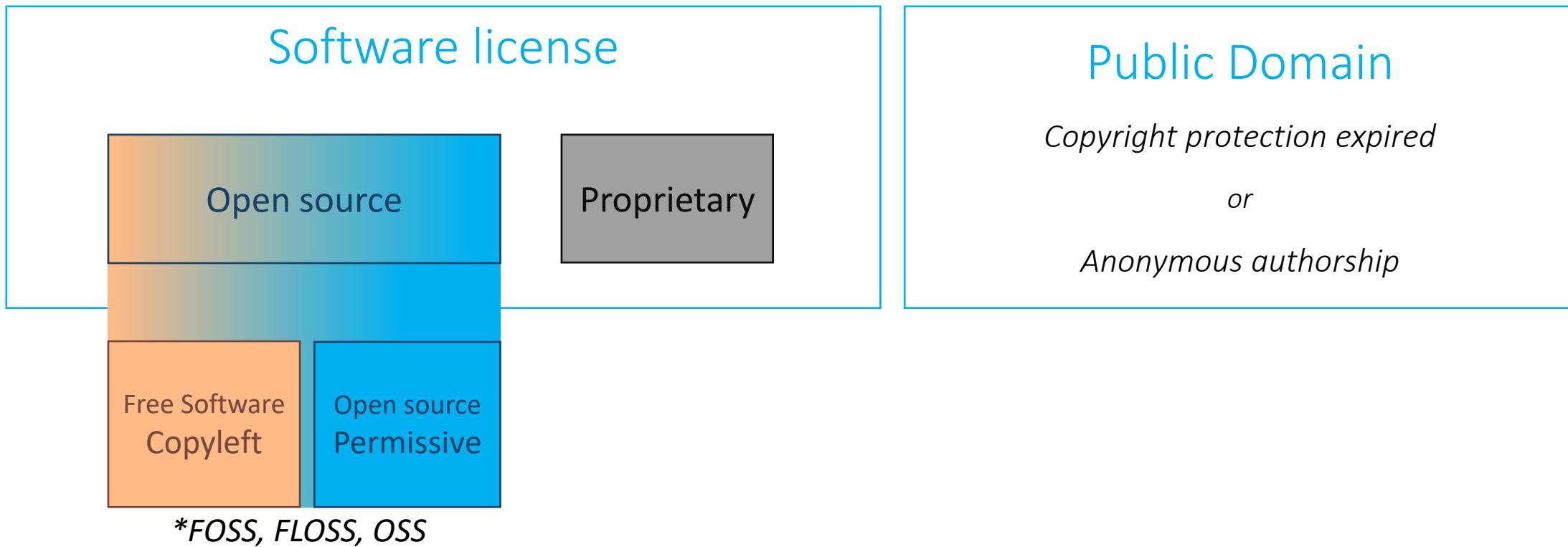
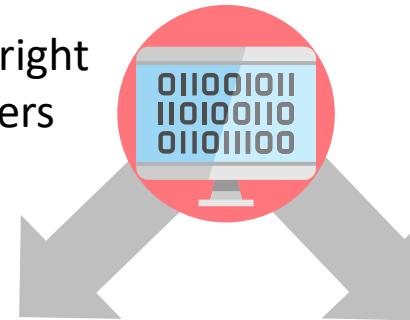
Licenses in a Nutshell

- If you want to give others the permission to do certain things with your work, you do that by issuing a license.
- A license is a legal document that gives people permission to do specific things with the copyrighted work.



Software license categories

- Software is created by an author and is subject to copyright
- A license determines how software can be used by others



Copyleft vs. Permissive

Both copyleft and permissive licenses require that anyone who uses works licensed under them must have permission to view, modify, and share the source.

Copyleft

- Restrictive (copyleft) licenses require source code to be distributed along with binary code
 - aim to keep software free in the future

Permissive

- Permissive licenses allow distribution of source code, but only require attribution.

This is a simplification. It is more complicated than this; some licenses are more permissive than others and there are other complications.

Copyleft vs. Permissive

Free Software - Copyleft

Governed by the
Free Software Foundation (FSF)



They keep a list of accepted licenses
GPL, LGPL, AGPL, MPL, EPL,...

They are referred to as:

Copyleft, Restrictive, protective, reciprocal...

Open Source - Permissive

Governed by the
Open Source Initiative (OSI)



They keep a list of accepted licenses
BSD, MIT, Apache License, ...

They are referred to as:
Permissive, Non-copyleft



License and Project Examples

Free Software - Copyleft

License Examples:

GPLv2, GPLv3 - *GNU General Public License*

LGPLv2.1, LGPLv3 - *GNU Lesser General Public License*

MPL - *Mozilla Public License*

EPL - *Eclipse Public License*

Project Examples:



Linux (GPL v2) – *Most deployed OS*

GCC (GPL v3) – *Most popular compiler*



Firefox (MPL) – *Top 5 most used browser*

Eclipse (EPL) – *Most used IDE*

Open Source - Permissive

License Examples:

BSD License - *Berkeley Software Distribution*

MIT License - *Massachusetts Institute of Technology*

Apache License

Project Examples:



Android (Apache) – *Most used mobile OS*

Apache (Apache) – *Most used web server*

PHP (PHP) – *Popular server scripting language*

Python (Python) – *Popular high-level language*



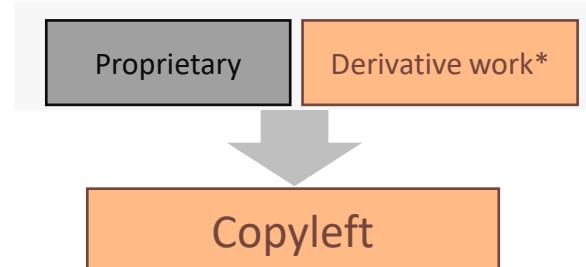
Usage Examples

Free Software - Copyleft

- Derivative works (modifications) :



- Combined works (linking) :



*License propagation, Copyleft effect

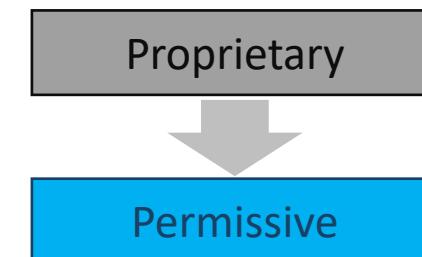
Open Source - Permissive

- Derivative works (modifications):

Others



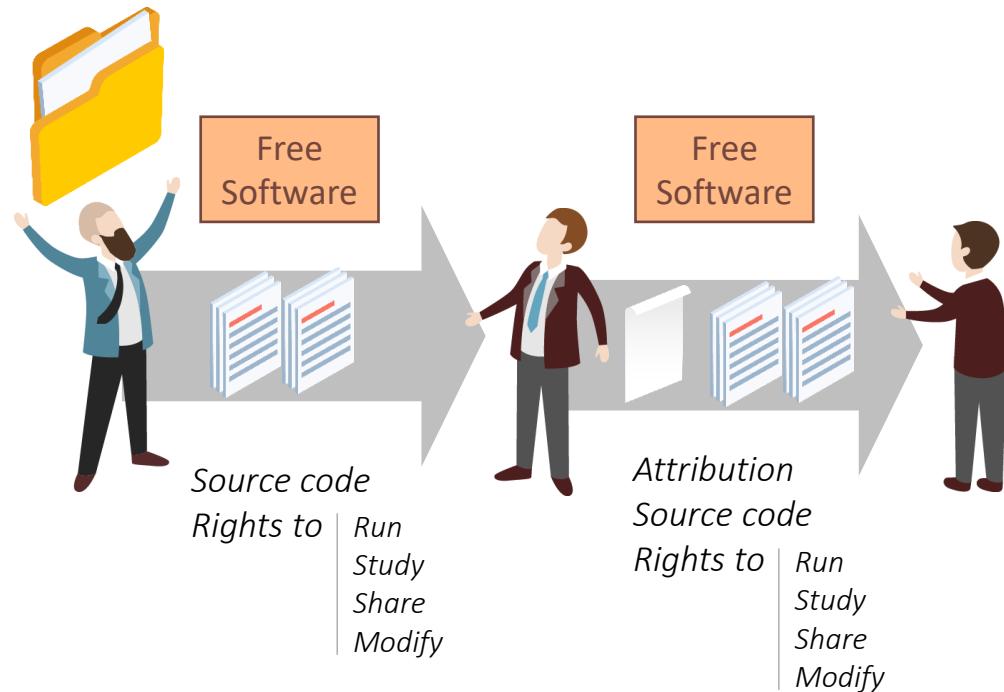
- Combined works (linking) :



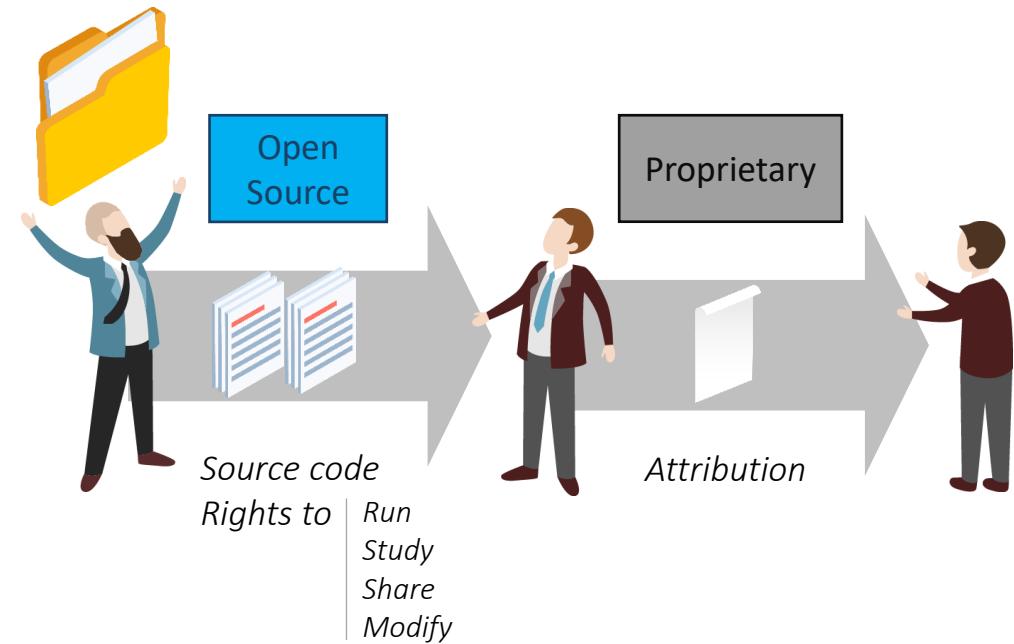
No license propagation

Distribution Examples

Copyleft



Permissive



Business friendly



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Community and Software Licenses

- When a software work has been written by many people, each person retains copyright over the portions that they contributed to the whole work.
- It would be hard for decisions to be made about what can be done with that software if each copyright owner had a different set of rights.
- Putting a project under a free and open source software license can simplify who can do what.

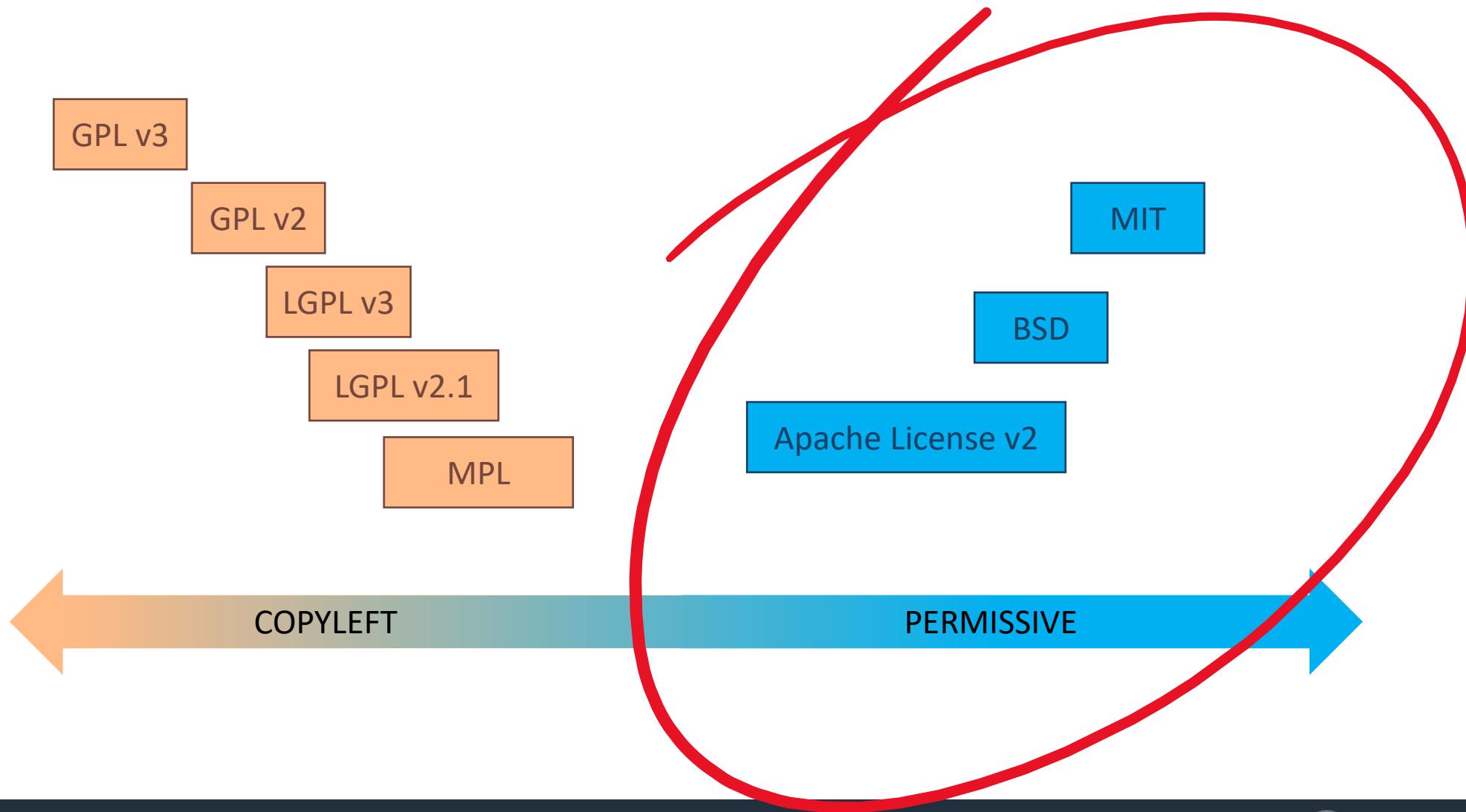
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 - This means your code is shareable, not secret.
 - It can be part of your portfolio.
 - You can show it to a prospective employer.

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- If you write code for an employer, whether as employee, intern, or even sometimes as an independent contractor, it is work for hire, unless you have a contract that states otherwise.
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License Spectrum



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 - The MIT License
- Some common copyleft licenses:
 - The GNU Public License
 - The GNU Affero Public License
 - GNU Lesser General Public License
- Hybrids:
 - The Mozilla Public License (weakly copyleft)

Common permissive licenses

- The MIT and BSD Licenses were two of the earliest open source licenses.
- Because these licenses are relatively straightforward and illustrate some of the basic principles of open source licensing, they are described here first.
- The MIT (or X), BSD, and Apache Licenses are classic open source licensing software licenses and are used in many open source projects.

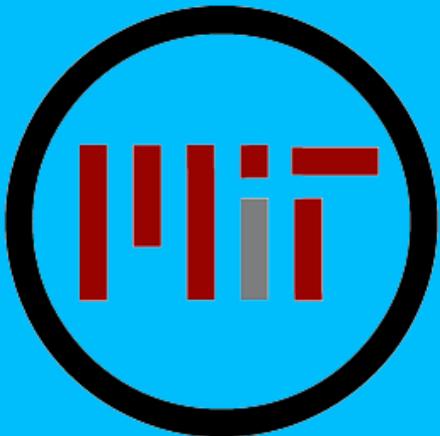


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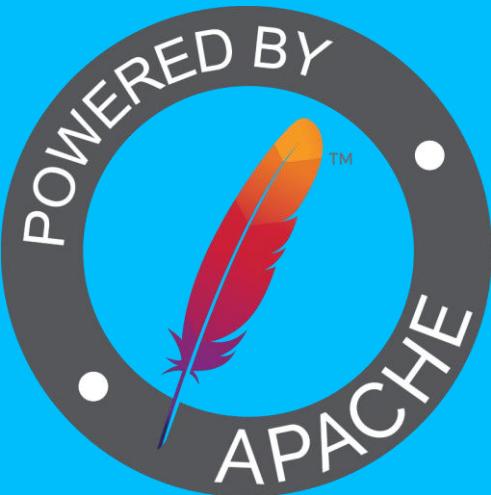
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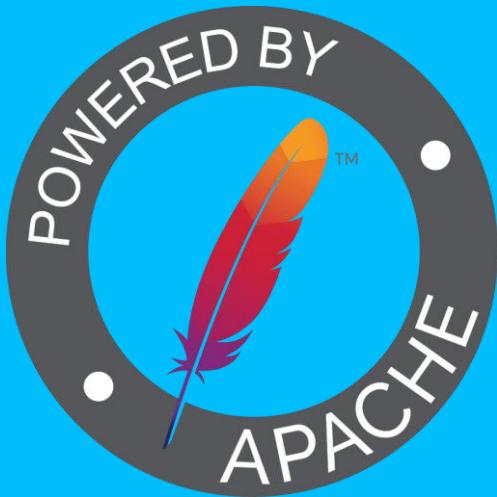
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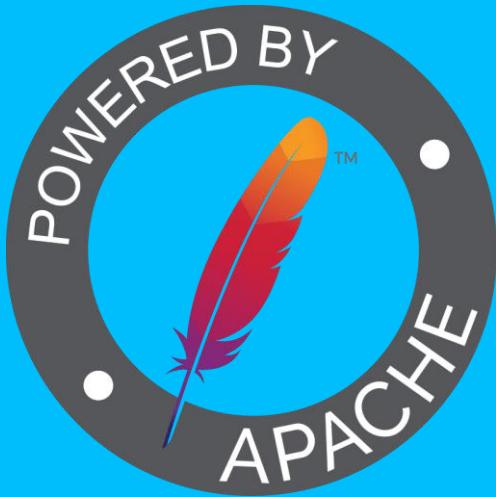
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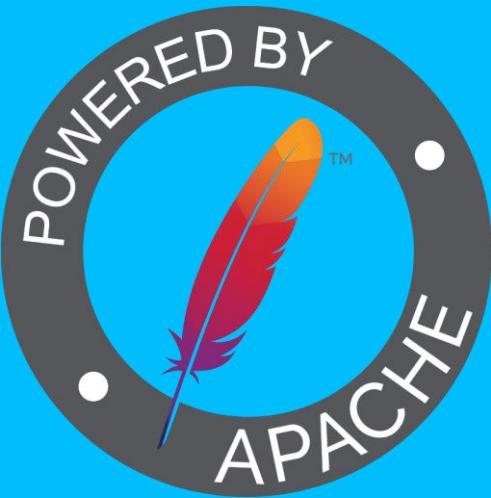
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How to identify the applicable license?

Three common places to find the applicable license of a project

- 1 Inside the source code
- 2 In the root directory of a project
- 3 In the project's website

Let's look at some examples

EXAMPLE_PROJECT

project_sample_mix

android-bluetooth

BluetoothActivityEnergyInfo.java

BluetoothAudioConfig.java

BluetoothAvrcp.java

BluetoothAvrcpPlayerSettings.java

BluetoothDevicePicker.java

BluetoothGattCallback.java

BluetoothGattCallbackWrapper.java

BluetoothGattDescriptor.java

BluetoothGattIncludedService.java

BluetoothGattServerCallback.java

duplicated

openfastpath

prop_files_with_snippets

whitelisting

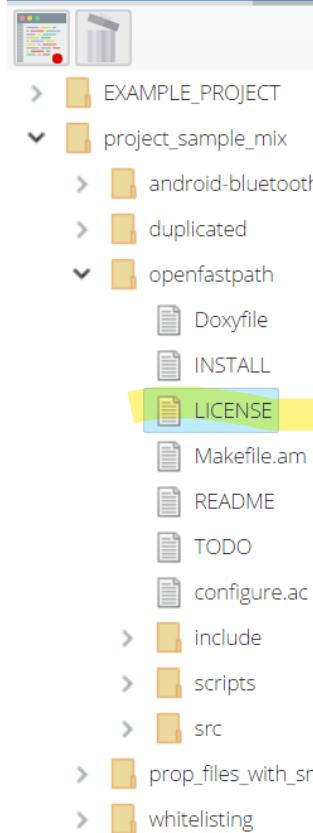
OKAY!

Local file

BluetoothActivityEnergyInfo.java

```
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12 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
13 * See the License for the specific language governing permissions and
14 * limitations under the License.
15 */
16
17 package android.bluetooth;
18
19 import android.os.Parcel;
20 import android.os.Parcelable;
21
22 /**
23 * Record of energy and activity information from controller and
24 * underlying bt stack state. Timestamp the record with system
25 * time
26 * @hide
27 */
28 public final class BluetoothActivityEnergyInfo implements Parcelable {
29     private final long mTimestamp;
30     private final int mBluetoothStackState;
31     private final long mControllerTxTimeMs;
32     private final long mControllerRxTimeMs;
33     private final long mControllerIdleTimeMs;
```

Quick View



Local file



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26 OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
```

End of file



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```
/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.11, January 15th, 2017
```

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*/

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```

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184	+		
178	185 END OF TERMS AND CONDITIONS		
179	186		
180	187 APPENDIX: How to apply the Apache License to your work.		



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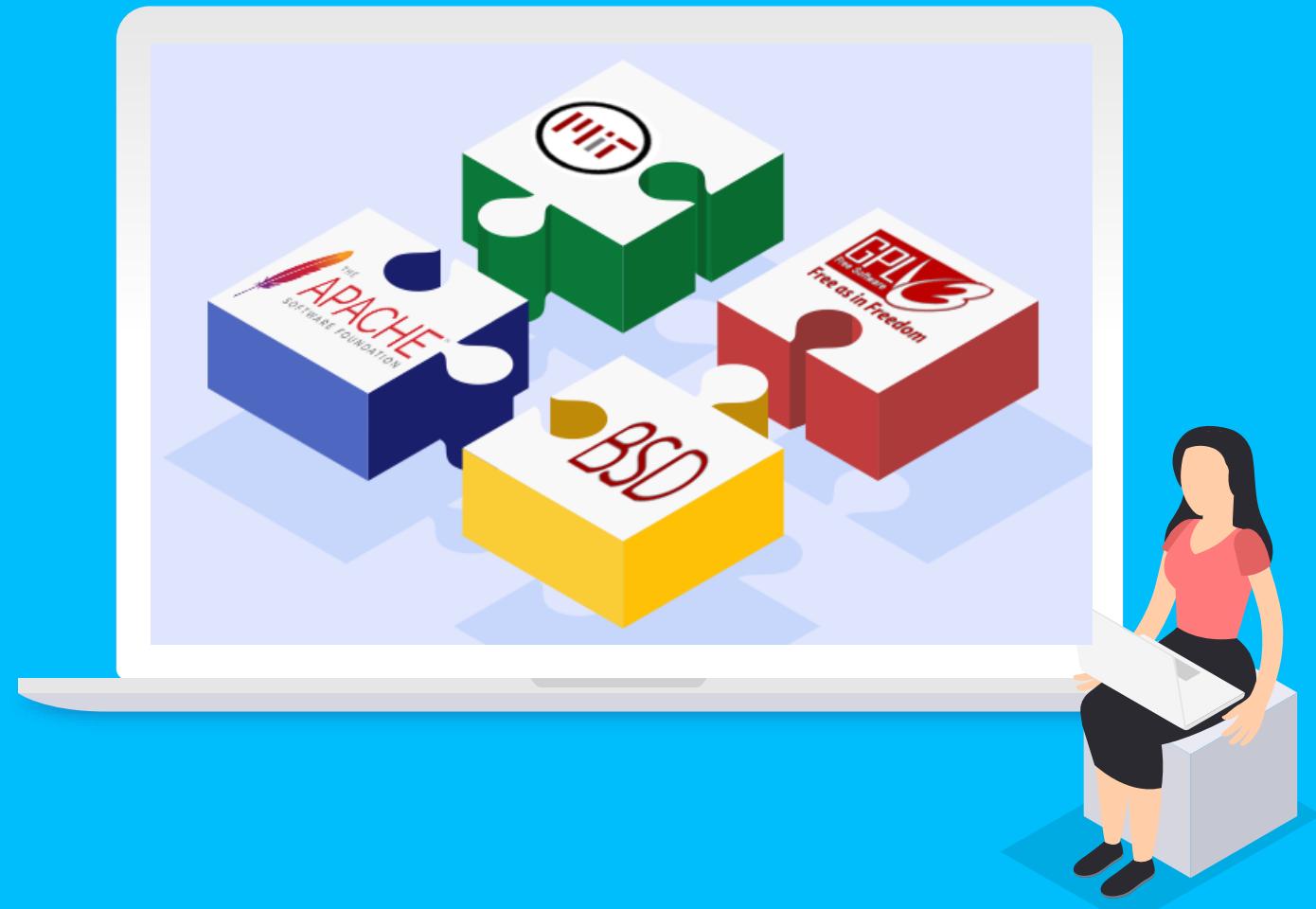
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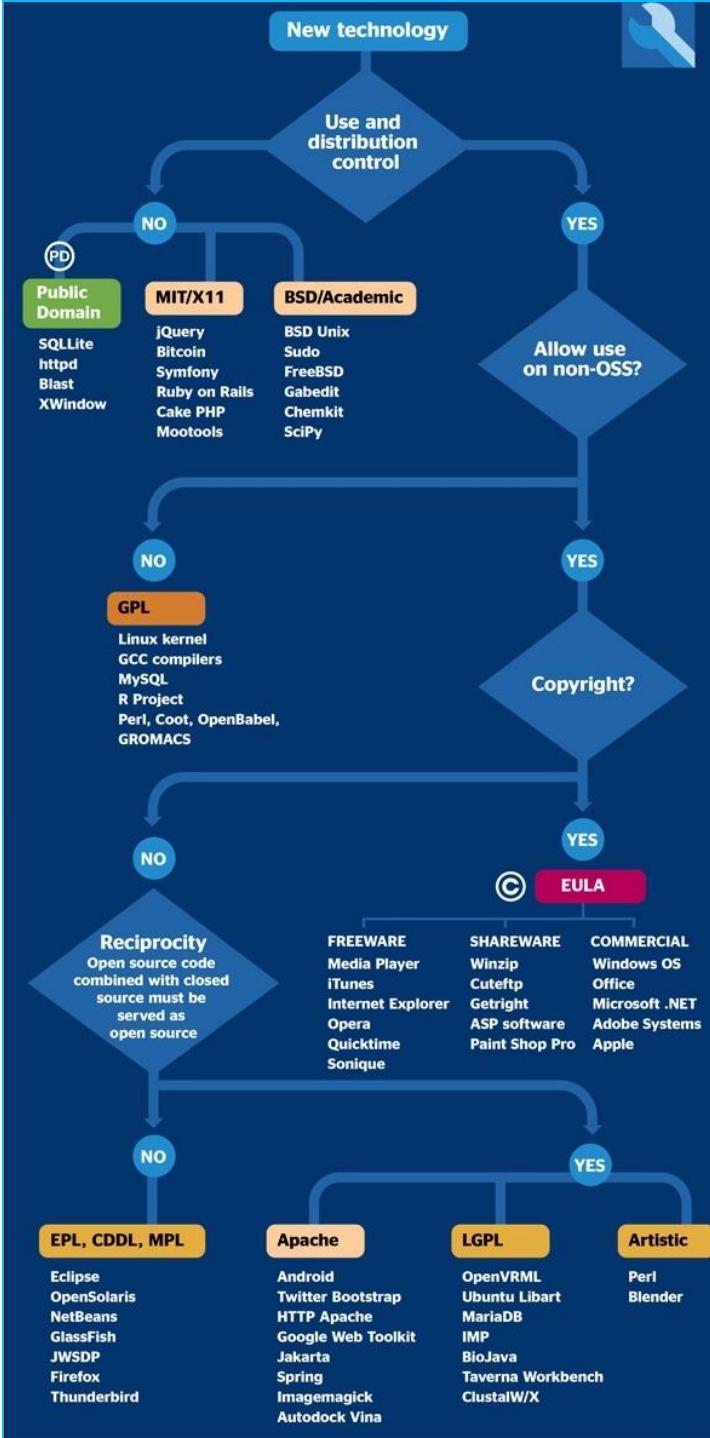
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Choosing a License

Project Objectives

- You may also want to consider the communities you hope will use and contribute to your project:
 - **Do you want your project to be used as a dependency by other projects?** Probably best to use the most popular license in your relevant community. For example, [MIT](#) is the most popular license for [npm libraries](#).
 - **Do you want your project to appeal to large businesses?** A large business will likely want an express patent license from all contributors. In this case, [Apache 2.0](#) has you (and them) covered.
 - **Do you want your project to appeal to contributors who do not want their contributions to be used in closed source software?** [GPLv3](#) or (if they also do not wish to contribute to closed source services) [AGPLv3](#) will go over well.

Reading Materials

- Book
 - **Producing Open-Source Software How to Run a Successful Free Software Project** → Chapter 9
 - **Getting started with open-source development** → Chapter 3 – Licensing
 - **Understanding Open Source and Free Software Licensing** → Chapter 1: Open Source Licensing, Contract, and Copyright Law
- <https://opensource.guide/legal/>

Thanks

Office Time: Monday-Friday (1000 - 1800)

You can send me an email for meeting, or any sort of discussion related to class matters.

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