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Free software

Many people who have access to a computer or a smartphone use software in their daily lives such as the internet and software to print documents. The software used can be purchased from stores like Amazon and some software is free to download. Some software that is free to download or obtain a copy of it for a free is free software or open source software. Some free software can cost a small amount of money. However, most free software is free to download and obtain a copy of it at no cost. The objective of free software is that it allows others to obtain the source code of the software. Therefore, this allows the community of developers that use open source software to develop software as a community. This also allows developers to not have to go through the time-consuming process of reverse engineering to obtain the source code of the software if he or she wants to develop the software. Despite the fact that programmers participate in voluntarily developing free software with coding, some people download free software for personal uses and do not contribute to the development of these free software. Although obtaining free software benefits some people, however, the issue with all software being free is that it does not benefit everyone. With software being free to obtain, these individuals and companies that own the copyrights and patents do not receive financial support for their efforts and intellectual property.

The free software that one can download for free is licensed in order to have certain restrictions on the software. In one case, the Korean software company Hancom Inc. distributed free software. However, their "Office suites" software did not have any free software license. Hancom Inc was sued by Artifex in 2016, for violation of Artifex's copyrights (Collins, 2017). The Artifex's software is a licensed free software under the GNU's General Public License

("GPL"). The Hancom Inc infringed the Artifex's software, Ghostscript. The Ghostscript is a free and open source software that is made by Artifex for processing "PostScript, PDFs, and printers" (Robertson, 2017). Therefore, with free software licenses and open source licenses, these types of software are protected.

Some of the most well-known licenses for free software are the Apache License 2.0, the GNU General Public License ("GPL"), the GNU Library or "Lesser" General Public License (LGPL), the MIT license, the Mozilla Public License 2.0, the Common Development and Distribution License, and the Eclipse Public License ("Licenses & Standards", n.d.). One of the licenses is the Apache license which is developed by the Apache Software Foundation (ASF). This software foundation makes open source software such as the Apache HTTP Server for Windows and UNIX. The Apache HTTP server is used as a tool for web programming development to view websites that has source codes in PHP and other scripting languages like HTML. Apache also developed the Apache OpenOffice software which is a product that contains office software similar to Microsoft's Office software. The Apache OpenOffice suites contain products like the Apache Writer which is similar to Microsoft's Word and the Apache Impress which is similar to Microsoft's PowerPoint. ("Apache OpenOffice Product Description", n.d.). These Apaches products are all licensed under the Apache license. According to Apache, their Apache License is standard for the "Open Source Initiative's (OSI) Open Source Definition, and the Free Software Foundation's definition of "free software" ("Apache software is always free of charge", n.d.). Under the Apache License 2.0, users can use the software without any cost. It also gives individuals the copyright license to distribute, modify, copy and publicly use the software for displaying ("Apache License", 2004). The individuals are also permitted to charge fees for

the redistribution of the free software ("Apache License", 2004). Moreover, this license allows the free software to be royalty free ("Apache License", 2004).

The other popular free software license is the GNU General Public License founded by Richard Matthew Stallman. Stallman also started the Free Software Foundation in 1985 ("History", 2005) which prompts that all software should be free. He is a software developer of the GNU operating system which is similar to the Unix operating system. He also developed the GNU C++ compiler which is one of the widely used compiler for C++ compiling for IDEs like Eclipse. According to Stallman, in 1971, he worked at the MIT Artificial Intelligent Lab where he had access to free software and exposure to this "software-sharing community" (Stallman, n.d.). The individuals in this MIT Artificial Intelligent Lab were also given access to the source code of the software when requested (Stallman, n.d.). However, in 1982, individuals had to "sign a nondisclosure agreement" to get a copy of the software from the MIT Artificial Intelligent Lab (Stallman, n.d.). According to Stallman, with proprietary software, the computer does "computing for you, but you cannot control what it does" (Stallman, n.d.). Stallman claims that Apple uses censorship, thereby, the users of Apple products are restricted due to Apple's practice with censorship ("Reasons not to use Apple", n.d.). According to Stallman, Apple has blocked the New York Times app in China ("Reasons not to use Apple", n.d.). It is Stallman's belief that, with free software, users can have control of the software because the users have control of their own programming. Moreover, Stallman believes that it should be "illegal to make or distribute computers which are platforms for censorship" (Stallman, n.d.). Under the GNU General Public License ("GPL") founded by Stallman, the license permits users to distribute, make copies of the free software and modify the free software ("GNU GENERAL PUBLIC LICENSE", 2007). The users are also permitted to distribute the modified version of their free software. ("GNU

GENERAL PUBLIC LICENSE”, 2007). The developers are not subjected to patent infringement for modifying the free software under this license (“GNU GENERAL PUBLIC LICENSE”, 2007). The license also allows the free software to be used as fair use under the United States copyright law. This license also protects commercial parties from implementing free software source code in their software and profiting from it (“GNU GENERAL PUBLIC LICENSE”, 2007). There are also other licenses under the GNU licensing such as the GNU Lesser General Public License, the GNU Affero General Public License and the GNU Free Documentation License (Licenses, n.d.). In all the GNU Licenses, there is a copyleft requirement. The copyleft requirement is that for all free software that has been modified and other versions of the software must be free to use and free to distribute.

There are numerous types of free software that are licensed under the GNU General Public Licenses (“GPL”). One distributor of free software that is licensed under the GNU General Public Licenses version 2.0 is the Linux operating system. Linus Benedict Torvalds, the founder of Linux, made the Linux operating system to use as free software (CNET, 2006). Linux is one of the most popular operating systems used as a result that Linux is a free software. The Linux operating systems are used in the small Raspberry Pi computer series; however, Linux does not profit from the sales of small Raspberry Pi computers. The Linux operating systems are also used by other companies. The SCO Group (SCO) is a software company that has been bankrupted and they own the Unix operating system which shared UNIX libraries on the Linux operating system in their product. In 2003, the SCO Group filed a lawsuit opposed IBM for infringement. “The SCO Group claimed that the alleged presence of its proprietary code in the open source kernel devalued its proprietary code” (Kravets, 2016). The SCO Group (SCO) sued IBM for “allegedly placed commercial UNIX code in the Linux kernel's codebase” (Kravets,

2016). Even though Linux is licensed under the GNU General Public License, it is still vulnerable to a lawsuit. There is an Open Invention Network group that deals with free software patents. Open Invention Network group is “dedicated to protecting Linux from lawsuits” (Khan, 2018). According to Engadget, Microsoft has joined the Open Invention Network group, and “Microsoft has made 60,000 of its patents open source” (Khan).

The stakeholders for the free software issues are companies that are involved in licensing free software such as Apache and the GNU. The stakeholders are involved in the policy claim that software should be free, and this policy is in their licenses such as the GNU General Public License. The stakeholder’s argument is that their licensing is beneficial since it allows users to freely share the software, copy the software and contribute to editing the software with source code and improvements. Moreover, the stakeholder argues that all software source code should be freely accessible to developers, so the developers would not have to spend the time to reverse engineer to get the source code of the software. In Ethics, the teleological ethics framework could be applied to free software issues. The teleological ethics framework focuses on the result of the moral action. With free software being free to obtain, it can potentially benefit the majority. The disqualification of all software being free is that it could result in a loss of employment for software developers due to the lack of reciprocated financial support from their users.

On the opposing side, the stakeholders that are in favor of patents and copyrights are the government and proprietary software companies. The government does regulate copyrights and patents. Patents and copyrights owned by individuals and companies are protected under the law. The stakeholder’s argument is that this would give the authors of the patents and copyrights control of how their work is to be used and profited from their work. The claims of fact can be

applied to government regulation of copyrights and patents, when a patent or copyright is infringed, then legal actions can be taken against the infringers. In software companies, patent trolls are common. The objective of a patent troll is to file a lawsuit and target on companies that have infringed on their patent. According to the Washington Post, one of the software companies' "main source of revenue comes from suing companies for infringement" (Fung, 2017) of patents. The government also gives protections of creative work under the United States copyright laws. Under the United States copyright law, one has the rights to reproduce their copyrighted work, and distribute their copyrighted work ("17 U.S. Code § 106. Exclusive rights in copyrighted works", n.d.). The right of preparation of derivative works or modify their copyrighted work ("17 U.S. Code § 106. Exclusive rights in copyrighted works", n.d.). One also has the rights to use their copyrighted work publicly and display the work publicly ("17 U.S. Code § 106. Exclusive rights in copyrighted works", n.d.). Not only does the copyright laws allow for the rightful authors to have rights to their work but also gives authors protections of their work. There are many cases where copyright infringement has occurred and have been settled in lawsuits. Spotify is a popular Swedish music streaming software company that allows one to stream music and podcasts on their website. Wixen Music Publishing Inc. sued Spotify for copyright infringement. According to ABC News, Spotify had a "\$1.6 billion copyright infringement lawsuit" (Messer, 2018) due to Spotify's usage of "more than 10,000" of Wixen Music Publishing Inc.'s songs (Messer, 2018). Wixen Music Publishing Inc requested \$150,000 dollars for every infringed song (Messer, 2018). The Wixen Music Publishing Inc. claimed that Spotify used their music without compensating the Wixen Music Publishing Inc. and without obtaining "a direct or compulsory mechanical license for the use of the works" (Messer, 2018) from Wixen.

In ethics, the rights framework which allows one to be entitled to legal rights, and ethical rights could be applied to legal regulations of software. With the law regulating copyrights and patents, righteous authors of their works have legal protections of their work. Patents and copyrights owners can give consent towards how they want their work to be used and chose how to profit from their work. The authors can also file legal suits when their copyrights or patent have been infringed. Moreover, under the United States copyright and patent law, the authors and companies can obtain financial support for their work compensating from their customers.

Under the United States copyright law and patent law, copyrights and patents are regulated to protect authors and companies from infringement on their work. Copyright infringement not only occurs in the software industry; however, it also occurs in photography where people profit from others' photos that have sentimental value. If their work is stolen, then their work could be recovered under legal actions. Moreover, with copyrights and patents regulated by the government, the individuals and companies that own the copyrights and patents can profit from their products. According to the New York Times, "patents do not prevent research, although they may increase the price of medical treatment" (Ossorio, 2015). Thus, customers who use their work should reciprocate financially.

Many people that have access to a smartphone or a computer uses free software and proprietary software, whether is to print documents, to work on the computer, to use social network apps or to use the internet. People can choose to use free software which is licensed under free software licenses such as the Apache License 2.0 or the GNU General Public License ("GPL"). The benefits of free open source software are that developers can have control of the software and develop the software collaboratively. Free software has made Office software such as the Apache Open Office and the Linux operating system available to society for free. Even

though free software is protected under licensing, the government's regulations for copyrights and patents would allow individuals and companies to profit from their work. Under the government's regulations for copyrights and patents, proprietary software owners can profit from their copyrighted and patent work. Software is vulnerable to copyrights and patents infringement; thus, the government should regulate copyrighted works and patents because it allows for protection of the software.

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