**7-1: Journal**

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Purpose: What was the purpose and intent of the DMCA?

The purpose of the DMCA is to effectively make it illegal to circumvent copy protections designed to prevent pirates from duplicating digital copyrighted works and selling/freely distributing them. The main purpose of the DMCA is to prevent unlawful distribution of protected digital works.

Legality: What is banned and restricted under the DMCA?

Provision 1: Circumventing digital protections

Defeating access control measures is prohibited under the DMCA. This means descrambling a scrambled work or decrypting an encrypted work. In other words, avoiding, bypassing, removing, deactivating, or impairing a technological measure without the authority of the copyright holder. There are exceptions in a limited facility here, mostly related to educational/research purposes. Sometimes reverse engineering of certain devices is allowed although most reverse engineering is prohibited under strict interpretations of DMCA.

Provision 2: Distribution of devices that circumvent digital protections.

Devices which circumvent access controls are not allowed under DMCA. This includes software designed to circumvent control measures. One case of this was a 15-year-old who created and distributed software that allowed users to bypass protection on DVDs.

Provision 3: Selling anti-security tools.

Trafficking in technology that circumvents technological measures to limit reproduction of copyrighted work is not allowed under DMCA.

Provision 4: Removing copyright management information

Altering copyright management information or providing false copyright management information is illegal under DMCA. Title, author, name of copyright holder, T&C for the use of work, and identifying numbers or symbols referring to the above information. Information regarding the user of a work is not included in this.

Provision 5: Safe harbors from liability for Internet Service Providers

The last provision of the DMCA is to protect service providers, allowing them protection from their users if they are unaware their users are violating a copyright holder’s rights. If there is an \*attempt\* at mitigation ISPs are not able to be held legally responsible for users’ actions.

Anti–reverse engineering: Why is the DMCA considered to be an anti–reverse engineering law?

The main issue that the DMCA presents is two-fold in my opinion. First, the language in the DMCA and the exceptions that were created in the years after is ambiguous and vague while simultaneously fitting too narrow of a scope to really be read any other way. The other being that there is no provision that tells us what ‘Fair use’ of reverse engineering a software would even look like. As several provisions outright block most if not all applications of reverse engineering when strictly interpreted it is not clear that Congress understood how or why programmers engage in reverse engineering. The way the DMCA is so strict creates a sense of guilty until proven innocent and interacts with copyright law in a way that means you often must prove your innocence based on a precedent or ambiguous exception.

Exceptions: What are exceptions to the DMCA in which reverse engineering is legal and ethical?

Permission: When a copyright owner has given you permission to make copies, depending on the nature of the permission may also allow reverse engineering. A license that authorizes you to “use” the software and doesn’t explicitly prohibit reverse engineering may be all you need.

Fair Use: Fair use allows users to make unauthorized copies in some circumstances. Courts have found reverse engineering for interoperability to fall under fair use.

Impact: What are your thoughts on the DMCA and its long-term impact on reverse engineering and the computer science field?

Overall, I do understand the need to protect copyright owner’s rights. The dawn of the internet provided a lot of challenges and understandably the government tried to create regulations to protect intellectual property. I think that generally, DMCA is somewhat damaging, and I generally think that a provision should at least be added to explicitly outline what constitutes ‘fair use’ under DMCA. As it stands now the provisions seem dated, harkening to an era of internet boogey men and a date in some computer bringing about the end of days. I would like to think that the DMCA could be revisited by people with a better understanding of what is being regulated, but now it seems more like the future of software reverse engineering will be determined in courts, on a case-by-case basis. As for long term impact, I think that it simply means more mass-market EULA’s to ensure that people waive their rights to “Fair use”. By extension we should also take care of what we reverse engineer, especially if any terms and conditions come attached to that piece of software.