

Introduction to Open Source

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Anything I Want For An Hour, Eh?

YouTube CA  hour-long cat video



YouTube Epic Compilations

0:00 / 1:00:04   

Cats Compilation - 1 hour of funny cats in HD!

 Shorun Qualtec

Outline

- ❖ The meaning of “open source” and the history of the term
- ❖ Different OSS licences, their effect on creativity
- ❖ *Jacobsen v Katzer*, and repercussions on copyright
- ❖ Other meanings of “open source”

Objectives

- ❖ By the end of this seminar-style discussion, you will be able to:
 - ❖ Describe the origins and history of the term “open source”
 - ❖ Recognize the differences between a few key open source licences
 - ❖ Understand how the wording of an open source licence can allow licence violations to be pursued under copyright law
 - ❖ Appreciate the growing, ambiguous nature of the term “open source”

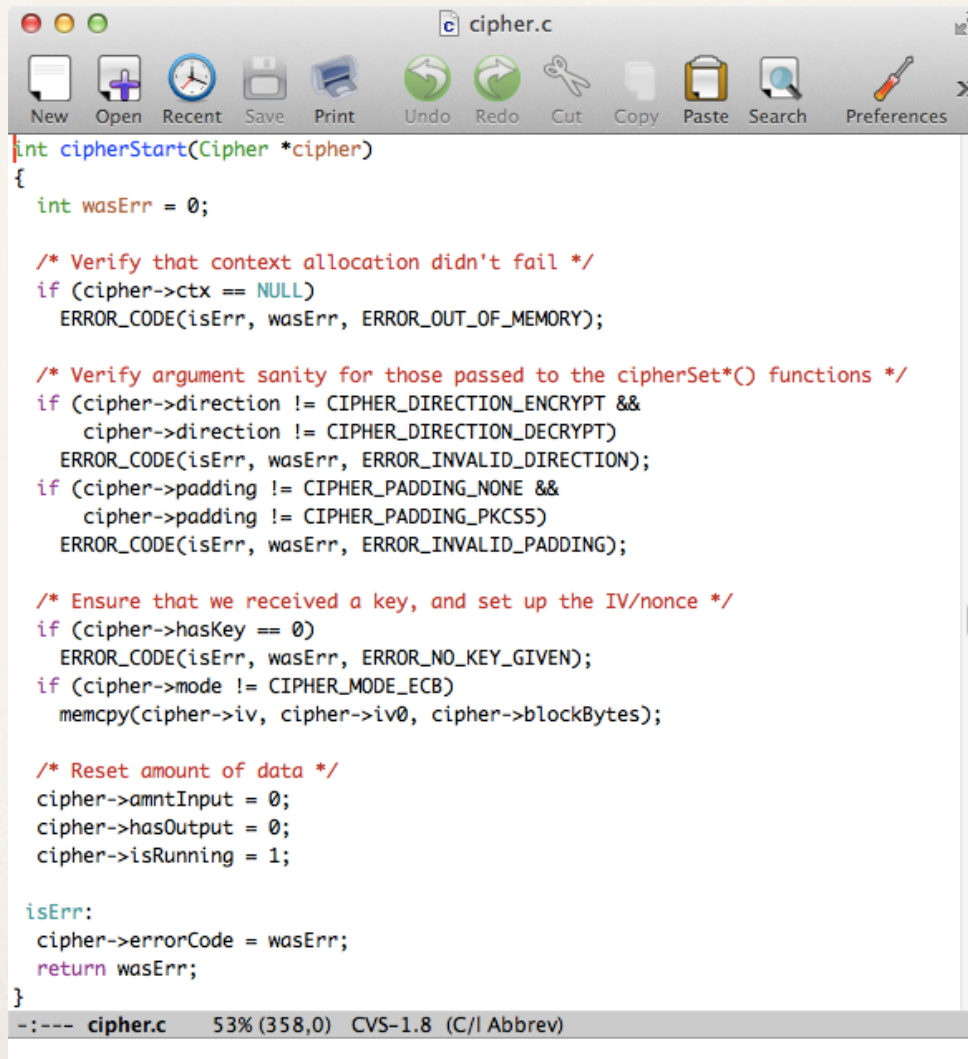
What Does “Open Source” Mean?

- ❖ Historically and commonly used to refer to a type of computer software
- ❖ Has come to refer to many different “open” endeavours

Computer Software 101

- ❖ The vast majority of software is written in human-readable form called “source code”
- ❖ That code gets translated (“compiled”) into a “binary”, which is the code that actually runs on your system
- ❖ Nearly impossible to reverse engineer how a large program works just by looking at the binary

Source Code



```
int cipherStart(Cipher *cipher)
{
    int wasErr = 0;

    /* Verify that context allocation didn't fail */
    if (cipher->ctx == NULL)
        ERROR_CODE(isErr, wasErr, ERROR_OUT_OF_MEMORY);

    /* Verify argument sanity for those passed to the cipherSet*() functions */
    if (cipher->direction != CIPHER_DIRECTION_ENCRYPT &&
        cipher->direction != CIPHER_DIRECTION_DECRYPT)
        ERROR_CODE(isErr, wasErr, ERROR_INVALID_DIRECTION);
    if (cipher->padding != CIPHER_PADDING_NONE &&
        cipher->padding != CIPHER_PADDING_PKCSS)
        ERROR_CODE(isErr, wasErr, ERROR_INVALID_PADDING);

    /* Ensure that we received a key, and set up the IV/nonce */
    if (cipher->hasKey == 0)
        ERROR_CODE(isErr, wasErr, ERROR_NO_KEY_GIVEN);
    if (cipher->mode != CIPHER_MODE_ECB)
        memcpy(cipher->iv, cipher->iv0, cipher->blockBytes);

    /* Reset amount of data */
    cipher->amntInput = 0;
    cipher->hasOutput = 0;
    cipher->isRunning = 1;

isErr:
    cipher->errorCode = wasErr;
    return wasErr;
}

-:--- cipher.c 53% (358,0) CVS-1.8 (C/I Abbrev)
```


Origin of “Open Source”

- ❖ Software for which the source is openly available (i.e., available to the world) came to be called “open source”
 - ❖ Nowadays, available online (shipping CDs for a nominal fee in the past)
- ❖ Contrast with closed-source, or proprietary, software

Discussion #1

- ❖ Why would you want to release the source code for your software?
- ❖ Why would you not want to?

Discussion #2

- ❖ What sort of conditions, if any, would you want to put on the use of your open-source code? Why?

Conditions on OSS

- ❖ Actual public domain software is rare
 - ❖ Plenty of software that claims to be in the public domain
- ❖ There are two OSS licences we will discuss:
 - ❖ Simplified BSD / ISC (Internet Software Consortium)
 - ❖ GNU GPLv2/3 (GNU General Public Licence v. 2 or 3)

ISC Licence



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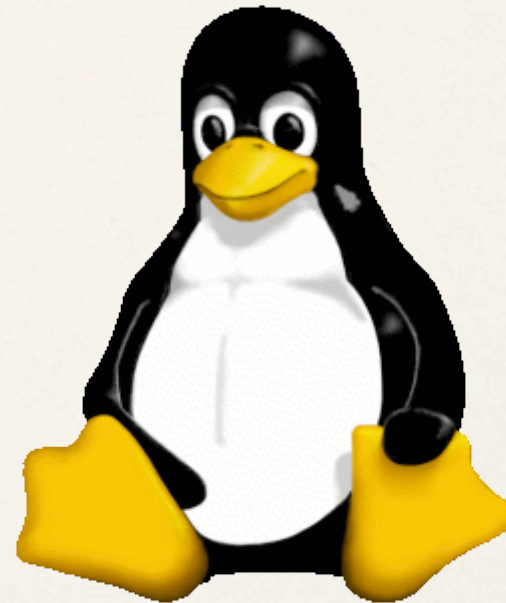
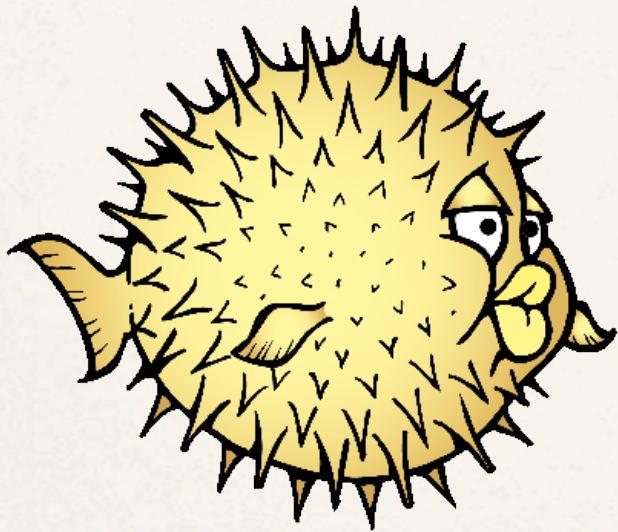
[Redacted: disclaimer of warranties written in all capital letters.]

GPL



- ❖ [Redacted: the whole thing, for sheer appalling length]
- ❖ Key features:
 - ❖ Can use code for any purpose, even commercial, and can even charge for the derived code
 - ❖ Copyleft / viral: if derived program is distributed, source code must be made available under GPL (or minor variant)
 - ❖ Code offered under licence (copyright law), rather than a contract

Examples of ISC and GPL



Discussion #3

- ❖ Do conditions such as those in the GPL and / or ISC licences promote creativity? Hinder it? Not affect it at all?

Jacobsen v Katzer: Facts



- * Jacobsen: OSS (Artistic Licence) project (DecoderPro) for controlling model trains
 - * Almost copyleft: state authorship, changes from original, etc.; *and* (a) make derived source freely available, (b) do not distribute derived source / binary, (c) provide original binary with derived which uses different executable names, or (d) make other arrangements with copyright holder
- * Katzer: Commercial project (Decoder Commander) for same
 - * Used portions of definition files in DecoderPro without: attribution, including COPYING file, changes from original, etc.

Jacobsen v Katzer: Issue

- ❖ Covenants and conditions:
 - ❖ Covenants: A pledge to do or not to do something
 - ❖ Condition: a future event that causes rights or obligations to be created, enlarged, or destroyed
- ❖ If terms are covenants: governed by contract law (no damages for Jacobsen, since code given to the world)
- ❖ If terms are covenants and conditions: copyright law (injunction)

Jacobsen v Katzer: History

- ❖ District Court: “The condition that the user insert a prominent notice of attribution does not limit the scope of the license. Rather, Defendants’ alleged violation of the conditions of the license may have constituted a breach of the nonexclusive license, but does not create liability for copyright infringement where it would not otherwise exist.” [emphasis added]
- ❖ Oopsie. C.A.F.C.: “Thus, despite the use of the word ‘conditions,’ the District Court treated the terms of the Artistic License as contractual covenants which did not limit the scope of the license.”

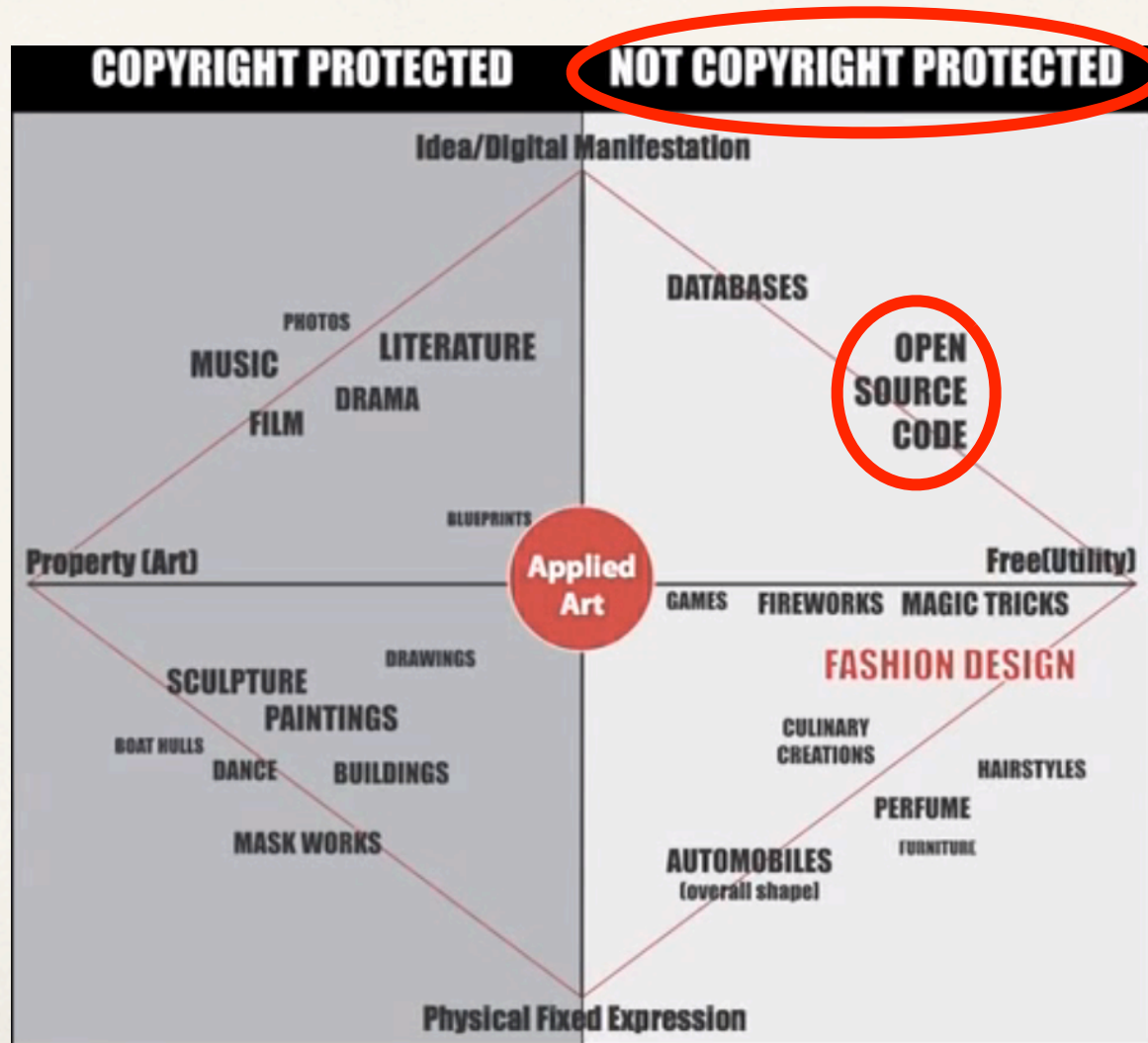
Jacobsen v Katzer: C.A.F.C. Ruling

- ❖ “The Artistic License states on its face that the document creates conditions: ‘The intent of this document is to state the conditions under which a Package may be copied.’”
- ❖ “The Artistic License also uses the traditional language of conditions by noting that the rights to copy, modify, and distribute are granted ‘provided that’ the conditions are met. Under California contract law, ‘provided that’ typically denotes a condition.”
- ❖ Copyright law ⇒ injunction granted

Jacobsen v Katzer: Ratio

- ❖ Open-source software is protected by copyright if a condition of the licence is breached

Sorry, Dr. Blakley



Discussion #4

- ❖ OSS enjoys copyright protection, if conditions of the licence are breached
- ❖ How does this fact affect the creativity of those who work on OSS projects?
- ❖ Or does it affect their creativity at all?

Too Far? *Oracle America v Google*

- ❖ C.A.F.C.: even ridiculously small amounts of code are protected by copyright

- ❖ Nine lines of code lifted from Oracle's open-source JVM:

```
private static void rangeCheck(int arrayLen, int fromIndex, int toIndex) {
    if (fromIndex > toIndex)
        throw new IllegalArgumentException("fromIndex(" + fromIndex +
            ") > toIndex(" + toIndex + ")");
    if (fromIndex < 0)
        throw new ArrayIndexOutOfBoundsException(fromIndex);
    if (toIndex > arrayLen)
        throw new ArrayIndexOutOfBoundsException(toIndex);
}
```

- ❖ Basically two ways any rational programmer would have written this incredibly simple piece of code

Discussion #5

- ❖ The term “open source” comes from software source code. But, what other fields or products might you consider open-source?

Potential Examples?



Potential Examples?



WIKIPEDIA
The Free Encyclopedia

Potential Examples?



Vores øl (Our Beer)

Discussion #6

- ❖ Potential example?
- ❖ What the heck *is* Google, in relation to a more general concept of open-source?



Google

Discussion #7

- ❖ In “Virtual Liberty: Freedom to Design and Freedom to Play in Virtual Worlds”, Balkin proposed an open-source massively multiplayer online game
- ❖ Consider an open-source MMORPG: good idea or bad idea?

In the Grand Tradition (Sort Of...)

