A look back at the history of free software and open source

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Debian, Collabora

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Passports

- once a document of privilege

- later, an instrument of oppression

LEAGUE OF NATIONS.

ADVISORY AND TECHNICAL COMMITTEE FOR
COMMUNICATIONS AND TRANSIT

PASSPORT CONFERENCE

PREPARATORY DOCUMENTS

Software Copyrights

- Didn't exist in the US before 1974

- Programs could be considered ideas, procedures, methods, systems, and processes
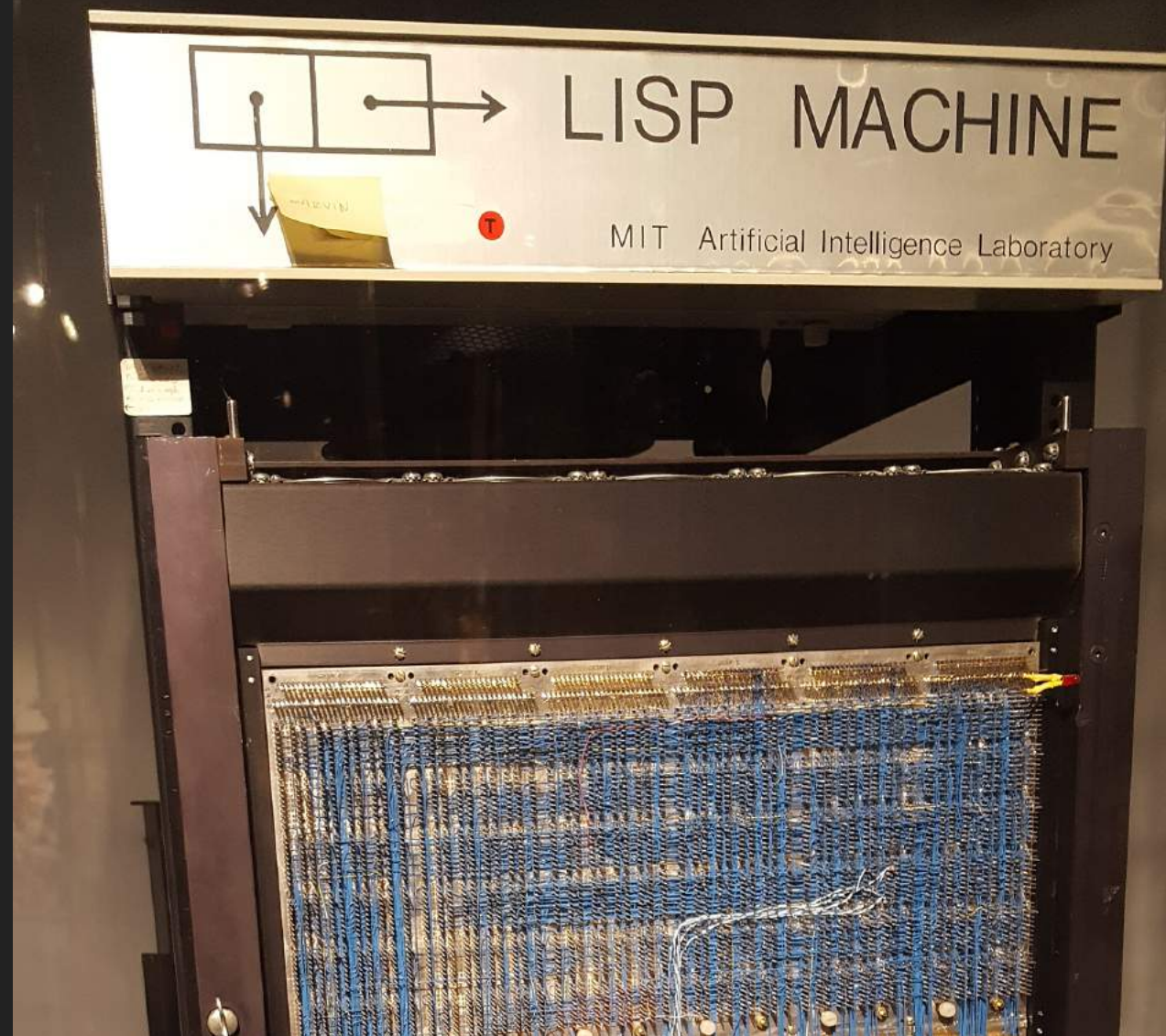
```
                DATA STATEMENTS
 901            SUBROUTINE ARM
 961C           DATA (NAME(I),I=1,3)/'ARCTNG'/
 96?C           DIFFERENT MULTIPLES OF PI:
 96?            DATA PI/3.1415927/,PIO2/1.5707963/,THPO2/4.7123890/
 971C
 971C           FORMAT STATEMENTS
 991     20     FORMAT(1X,'****ARCTNG**** ARGX, ARGY, THETAA'/1X,3E15.7)
1001C
1011C           **** START OF EXECUTABLE CODE ****
1021C
1031            CALL TRACE(NAME)
1041C
1051C           INITIALIZE ANGLE VALUE, RADIANS
1061C           ANGLE IN FIRST OR SECOND QUADRANT
1071            THETAA=PIO2
1081            IF(ARGY) 900,900,810
1091C           ANGLE IN THIRD OR FOURTH QUADRANT
11?4TC          ANGLE IN FIRST OR THIRD QUADRANT
11??    900     THETAA=THETAA+PIO2+ATAN(ARGY/ARGX)
13??            GO TO 450
119?C
12?1C           ANGLE IS ZERO(0) RADIANS
12?1    900     THETAA=0.0
122?            IF(ARGX.GE.0.0) GO TO 450
12??C           ANGLE IS 180.0 DEGREES: PI RADIANS
12??            THETAA=PI
12?1    450     IF(ITHCIN.EQ.0) GO TO 999
1261            WRITE(ILIST,20) ARGX,ARGY,THETAA
127?            CALL OUTHED(2)
128?C
129?C           RETURN TO SENDER: ROUTINE 'PTSEIR, DELTCS'
13?1    999     CALL TRACE(NAME)
131?            RETURN
132?            END
```
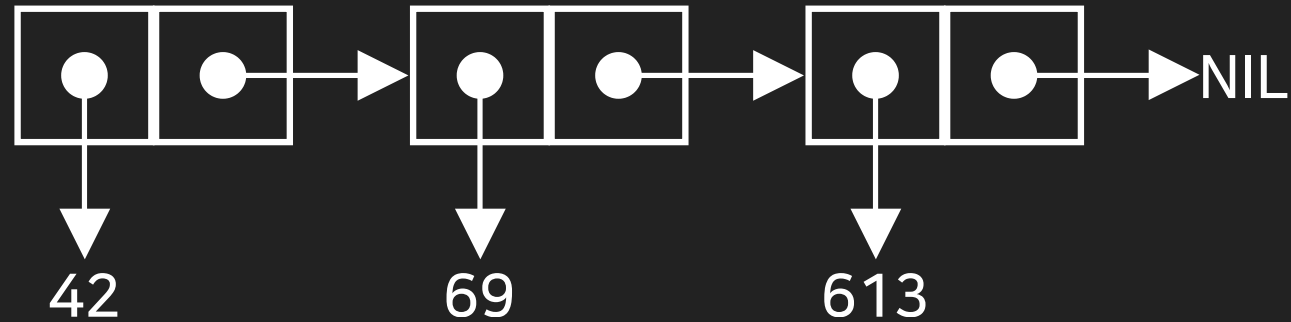
Copyright reform

- 1974: CONTU formed, decides programs are subject to copyright
- 1976: Copyright Act of 1976: programs are literary works

That made a lot of people upset

LISP machine

LISP

Program example:

```lisp
1  (defun factorial (n)
2    (if (= n 0) 1
3        (* n (factorial (- n 1)))))
```

Hacker ethic

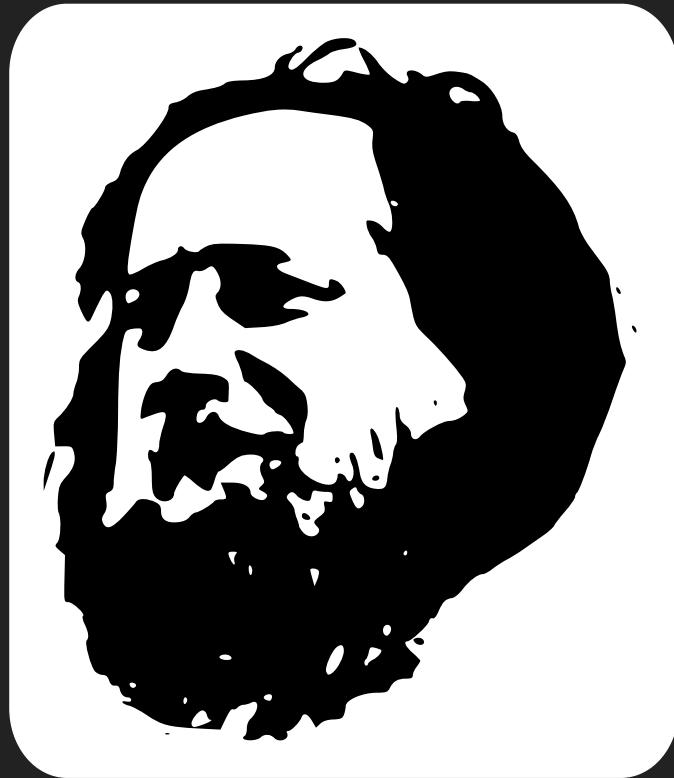> *…You would devise your own solution—or "hack." And then you'd share it with everyone else. Because… why not?*

Richard Stallman

GNU and FSF

- 1983: *GNU* announcement

- 1985: The GNU Manifesto

- 1985: The Free Software Foundation

The Four Freedoms

1. The freedom to *run* the program as you wish, for any purpose.

2. The freedom to *study* how the program works and change it.

3. The freedom to *redistribute* copies so you can help others.

4. The freedom to distribute copies of your *modified* versions to others.

The GNU operating system

- Fully free software

- *General Public License*:

  - copyleft

  - share-alike

  - doesn't allow further restrictions

GNU in 1991

- Major components have been developed

- Kernel missing:
  - Hurd: incomplete and unavailable
  - BSD: involved in a lawsuit, status unclear

> *I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu)*
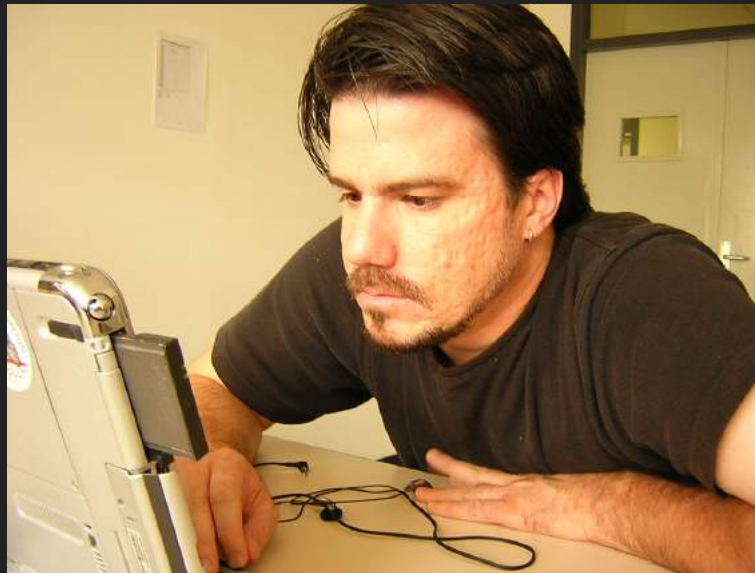> *— comp.os.minix, 25 August 1991*

Linux

- Started by Linus Torvalds in April 1991
- Could do graphics by the end of the year
- Free software under the GPL
- Just what was missing from GNU

GNU + Linux

1993: **Debian**

- A distribution founded by Ian Murdock

- Built on GNU and Linux, completely free

- Comes with an installer

- Comes with a package manager

Ian Murdock (1973—2015)

Rather than being developed by one isolated individual or group, as other distributions of Linux have been developed in the past, Debian is being developed openly in the spirit of Linux and GNU.
— Ian Murdock, the Debian Manifesto, 1994

What makes Debian different (1/3)

It's the biggest

- The biggest number of packages (only Ubuntu has more)

- Supports wide range of hardware: 10 official and 14 unofficial architectures

What makes Debian different (2/3)

Huge community

Ian Murdock wrote:

> *… if you remove the community from open source software, it's just software (2003)*

Ian Murdock wrote:

> *The Debian design process is open to ensure that the system is of the highest quality and that it reflects the needs of the user community.*

Software freedom is a principal priority for Debian

- In 1996, Bruce Perens replaced Ian as the project leader

- In 1997, Perens has proposed the Debian Social Contract to supplement the Debian Manifesto written by Murdock

- The document sets out the moral principles of the Debian project

- Ratified on 5 July 1997

Social contract

1. Debian will remain 100% free

2. We will give back to the free software community

3. We will not hide problems

4. Our priorities are our users and free software

5. Works that do not meet our free software standards

Debian Free Software Guidelines

1. Free Redistribution

2. Source Code

3. Derived Works

4. Integrity of The Author's Source Code

5. No Discrimination Against Persons or Groups

6. No Discrimination Against Fields of Endeavour

7. Distribution of License

8. License Must Not Be Specific to Debian

9. License Must Not Contaminate Other Software

How to promote free software?

- 1998: Netscape to release their browser
  - predecessor to Mozilla and, later, Firefox

- A group of people met at Los Altos to discuss the strategy to promote free software

- The group discussed a new term for *free software*

Why new term?

- Free: no cost or no restrictions?

- Business people tend to ignore the philosophy

- Something more clear was necessary

Christine Peterson coins *open source*

Christine Peterson

New movement: *open source*

- Open Source Initiative was founded

- Bruce Perens wrote the Open Source Definition

  - Based on the Debian Free Software Guidelines

The Open Source Definition

1. Free Redistribution

2. Source Code

3. Derived Works

4. Integrity of The Author's Source Code

5. No Discrimination Against Persons or Groups

6. No Discrimination Against Fields of Endeavour

7. Distribution of License

8. License Must Not Be Specific to ~~Debian~~ <u>a Product</u>

9. License Must Not ~~Contaminate~~ <u>Restrict</u> Other Software

Free software definition:

- Promotes the philosophy of freedom

- Focuses on the rights of the user to use, study, modify, copy and redistribute the program for any purpose

Open source definition:

- Promotes the practical values of software freedom and open development methodology

- Focuses on the availability of the source code and unrestricted development

Both definition require allowing commercial use.

Despite the differences, both concepts define nearly the same set of software licenses. For all practical purposes, free software and open source software mean the same thing. The main difference is in the way they define this same thing.

Free software = open source

Free software vs open source

Philosophy

- Open source movement: too pragmatic?

- Free software movement: too idealist?

Free software vs open source

Misunderstandings

- Free as in free beer?

  - no: free as in freedom

- Open as in open book?

  - no: has to comply with the definition

  - easier to abuse if you're evil?

Almost, but not quite

JSON License

> *The Software shall be used for Good, not Evil.*

Almost, but not quite

JSON License

> *<...> IBM, its customers, partners, and minions [permission] to use JSLint for evil*

Almost, but not quite

Do No Harm License

> …based on the BSD 3-clause license, but with specific exclusions for using licensed code to promote or profit from: violence, hate and division, environmental destruction, abuse of human rights, the destruction of people's physical and mental health…

Why not?

The annotated version of the open source definition states:

> *We want commercial users to join our community, not feel excluded from it.*

Pseudo open source

- Creative Commons No Derivative/Non-Commercial

- MongoDB SSPL

- Redis Commons Clause

- Open core: AGPL + copyright assignment + proprietary