

LIS-3353

History I

“In the beginning....”

The “Ticker Tape” Theme



Human communication? NO. DATA!

On Openness

More open *generally* wins in the long run.

Piracy?* Meh.

**No but seriously don't do anything illegal, immoral, or violative of FSU rules*

Innovation (the WIMP interface)



Apple? IBM? Microsoft?

Innovation

(the WIMP interface)



“You’re ripping us off!” Steve Jobs shouted. “I trusted you, and now you’re stealing from us!” Gates just sat there coolly, looking Steve in the eye....

“Well, Steve, I think there’s more than one way of looking at it. I think it’s more like we both had this rich neighbor named Xerox and I broke into his house to steal the TV set and found out that you had already stolen it.”

The First PCs

- BASIC
- Freeware and Purchased Software
- Connect to TVs, frequently
- Saved to floppy disks (and sometimes CASSETTE TAPES)
- Some basic independent “Office” apps
- Very very open. Apple Clubs and such.

The First PCs (circa 1980)

Apple II, Commodore 64, Tandy, Amiga



Pioneers of freedom?

Apple II series

Apple v. IBM (COMPATIBLE)

MS Windows v. OS/2

The Steve at Apple who mattered? :)



Apple IIgs (1986)



(1977-1984ish)

Apple dominates.
Keeps EXCLUSIVE right to make
“Apple” Machines

Pioneers of freedom: IBM?



Apple was winning, IBM was desperate: so they
OPENED their OS:



Result? The IBM Compatible DOMINATES:
IBM wins (along with everyone else)

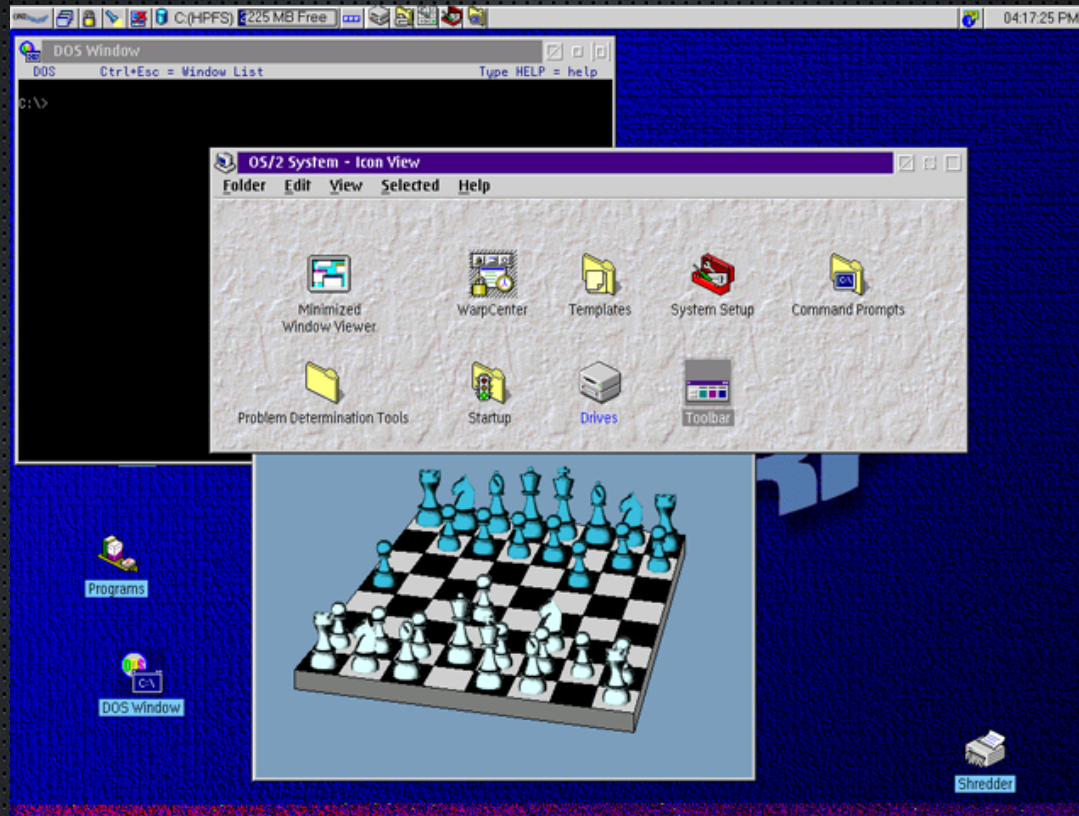


Result? The IBM Compatible DOMINATES:

Also: Steve Jobs is FIRED from Apple by John Sculley (1985) :
“Overpriced Mac is a toy, and dropping prices won't help”



IBM dominates. Decides to make a new OS



(Also, decides to completely ignore history...)

IBM dominates.
Decides to make a new OS



(Also, has made the unfortunate
mistake of hiring this guy to write it.
Who, you know, has a side project
going on.)

Bill's (evil?) Genius “Letter To Hobbyists”

(1976, impact felt later)

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February 3, 1976

An Open Letter to Hobbyists

To me, the most critical thing in the hobby market right now is the lack of good software courses, books and software itself. Without good software and an owner who understands programming, a hobby computer is wasted. Will quality software be written for the hobby market?

Almost a year ago, Paul Allen and myself, expecting the hobby market to expand, hired Monte Davidoff and developed Altair BASIC. Though the initial work took only two months, the three of us have spent most of the last year documenting, improving and adding features to BASIC. Now we have 4K, 8K, EXTENDED, ROM and DISK BASIC. The value of the computer time we have used exceeds \$40,000.

The feedback we have gotten from the hundreds of people who say they are using BASIC has all been positive. Two surprising things are apparent, however. 1) Most of these “users” never bought BASIC (less than 10% of all Altair owners have bought BASIC), and 2) The amount of royalties we have received from sales to hobbyists makes the time spent of Altair BASIC worth less than \$2 an hour.

Why is this? As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share. Who cares if the people who worked on it get paid?

Is this fair? One thing you don't do by stealing software is get back at MITS for some problem you may have had. MITS doesn't make money selling software. The royalty paid to us, the manual, the tape and the overhead make it a break-even operation. One thing you do do is prevent good software from being written. Who can afford to do professional work for nothing? What hobbyist can put 3-man years into programming, finding all bugs, documenting his product and distribute for free? The fact is, no one besides us has invested a lot of money in hobby software. We have written 6800 BASIC, and are writing 8080 APL and 6800 APL, but there is very little incentive to make this software available to hobbyists. Most directly, the thing you do is theft.

What about the guys who re-sell Altair BASIC, aren't they making money on hobby software? Yes, but those who have been reported to us may lose in the end. They are the ones who give hobbyists a bad name, and should be kicked out of any club meeting they show up at.

I would appreciate letters from any one who wants to pay up, or has a suggestion or comment. Just write me at 1180 Alvarado SE, #114, Albuquerque, New Mexico, 87108. Nothing would please me more than being able to hire ten programmers and deluge the hobby market with good software.

Bill Gates
Bill Gates
General Partner, Micro-Soft

Bill's (evil?) Genius “Letter To Hobbyists”

Convinces developers
(and the world)

“SOFTWARE IS A PRODUCT”
(please appreciate how weird this is)

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Is Math? Is Science?

In other news...

- 1985 - Windows 1.0
- 1990 - Windows 3.0
- 1995 - (hey guess)
- 1984 - 1st Macintosh
- 1986 - Apple IIgs
- 1998 - iMac

Microsoft Windows:

Standalone* office appliances running
proprietary software.

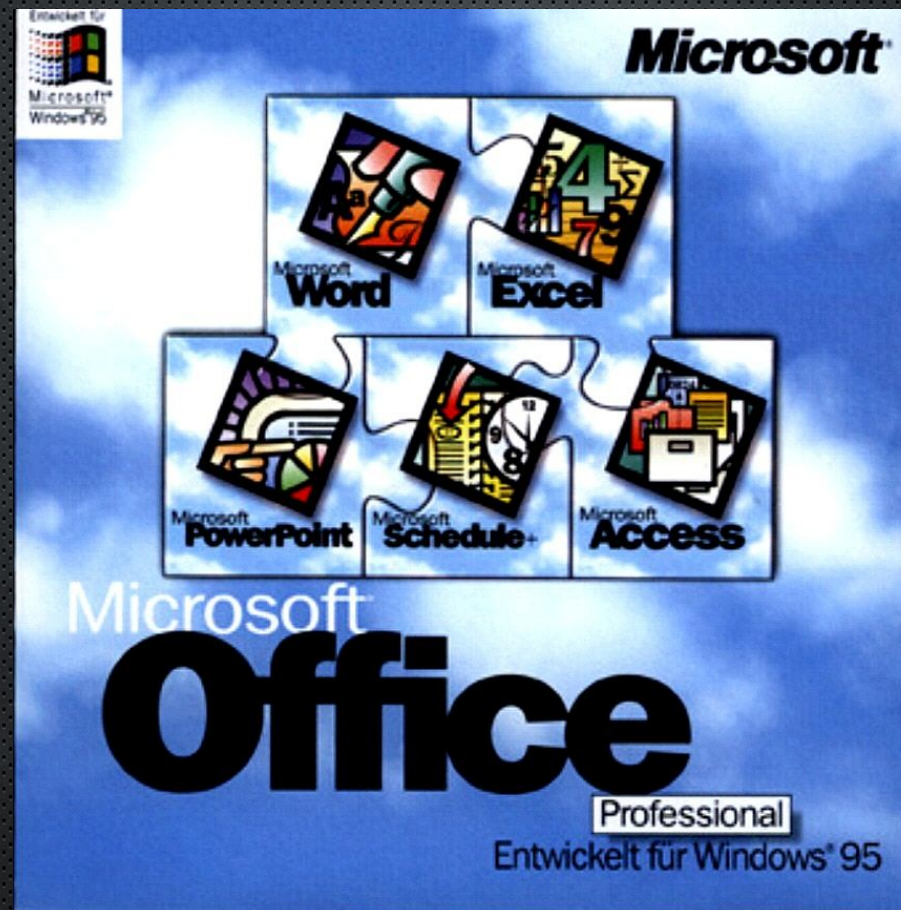
*infrequently connected or networked.
“Sneakernet!”

The Dominance of MS

Probably not “Windows...”

The Dominance of MS

Probably not Windows...



Unix



Unix

NOT “Making a product for other people”

But – people working together, and sharing the tools to improve everyone’s work.

Unix

- Multi-User from the beginning
- “Buying” software? What?
- The Unix Way
 - Write programs that do 1 thing well
 - Write programs to work together
 - Write programs to handle text, the universal interface

An almost random bit on recursion (why the goofy names in *nix)

- In computers, it's actually okay to define something with itself.

PSUEDOCODE!

Define function="EscapeFromRoom"{

- 1) If there's a door in arms-reach, exit – you're done, else
 - 2) If you can, take one step forward and EscapeFromRoom, else
 - 3) Rotate to the left until there's not a wall in front of you and EscapeFromRoom
- }

(this will get you out of any “regular” empty room)

GNU (Gnu's Not Unix)

Richard Stallman, 1983ish

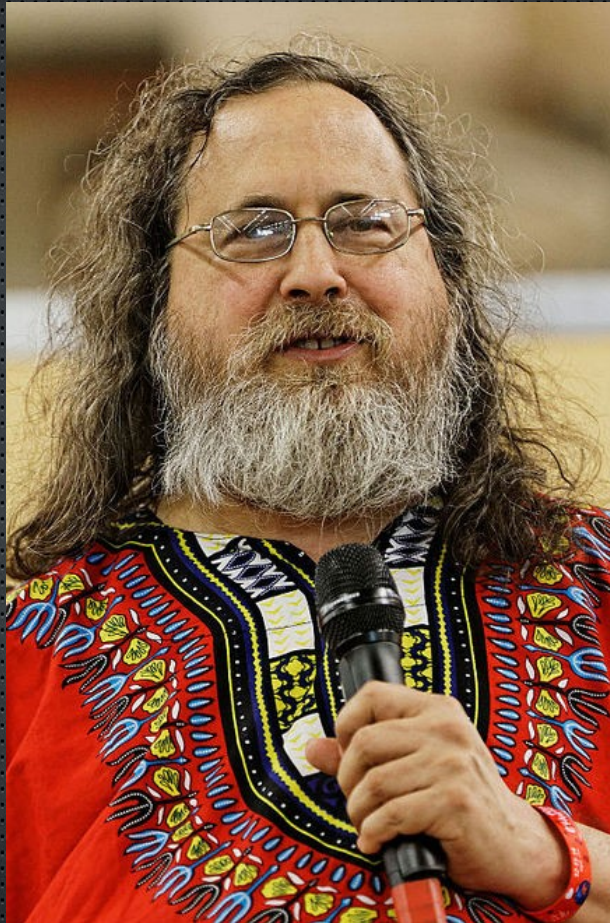
“complete Unix-compatible software system”

The GNU Manifesto → Golden Rule → GPL

But..no kernel...

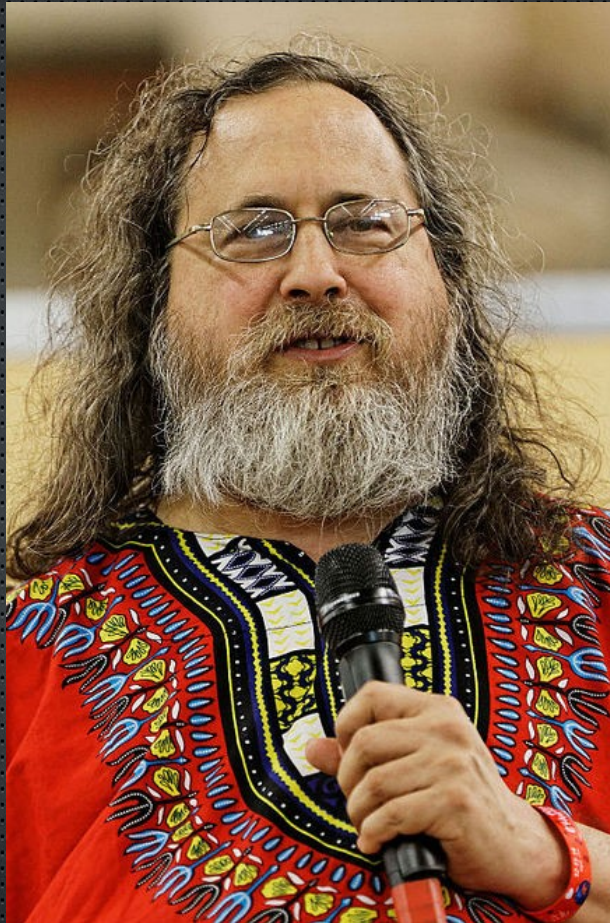
Richard Stallman:

Weird, picky guy who says crazy things



Richard Stallman:

Weird, picky guy who says crazy things



THAT ALWAYS END UP BEING TRUE IN THE LONG RUN
(more on this later....)

Linux (Linux Is Not Unix)

From: torvalds@klaava.Helsinki.FI (Linus Benedict Torvalds)
Newsgroups: comp.os.minix
Subject: What would you like to see most in minix?
Summary: small poll for my new operating system
Message-ID: <1991Aug25.205708.9541@klaava.Helsinki.FI>
Date: 25 Aug 91 20:57:08 GMT
Organization: University of Helsinki

Hello everybody out there using minix -

I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since april, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat (same physical layout of the file-system (due to practical reasons) among other things).

I've currently ported bash(1.08) and gcc(1.40), and things seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)

Linus (torvalds@kruuna.helsinki.fi)

PS. Yes - it's free of any minix code, and it has a multi-threaded fs. It is NOT protable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have :-).



Should we be calling it **GNU/Linux**?

“Sadly, a kernel by itself gets you nowhere”
– Linus Torvalds

GNU shells, compilers, userspace system tools,
libraries. are added.

Also, most importantly:
GNU GPL is adopted for Linux

This slide is incorrect
(but good enough for now)

Free Software / FOSS / FLOSS

Here's some code, do what you want, but please
share back what you do.

Open Source

Here's some code, do literally whatever you
want.

Unix Descendants

(aka, why am I talking about all this?)

- Linux (“real” Linux or GNU/Linux e.g. Ubuntu, Mint, etc.)
- Just the Linux Kernel
Android
- BSD (very similar, different License)
- Mac OS X, all other Apple operating systems
- Backend of most websites and servers, including iSpace or, more simply...

Unix Descendants
(aka, why am I talking about all this?)

LITERALLY EVERYTHING
THAT ISN'T WINDOWS

What is an OS, really?

Lots of different kinds of software at different levels.

(Apple/Windows just squishes them all together)

A rough car analogy

Linux is a Kernel



A rough car analogy

GNU is the other stuff. I don't know what all of it together is called because I'm not a car guy. But, you know, this:



A rough car analogy

Lubuntu Linux? = Model/Make



A rough car analogy

LXDE / Unity? / KDE / etc.



LXDE (Lubuntu)

