

Importance of Free Software

Scipy.in 2019

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How do I get Python ??

Easy. Just Download it.

Same is true with GNU/Linux OS and a large number of software packages.

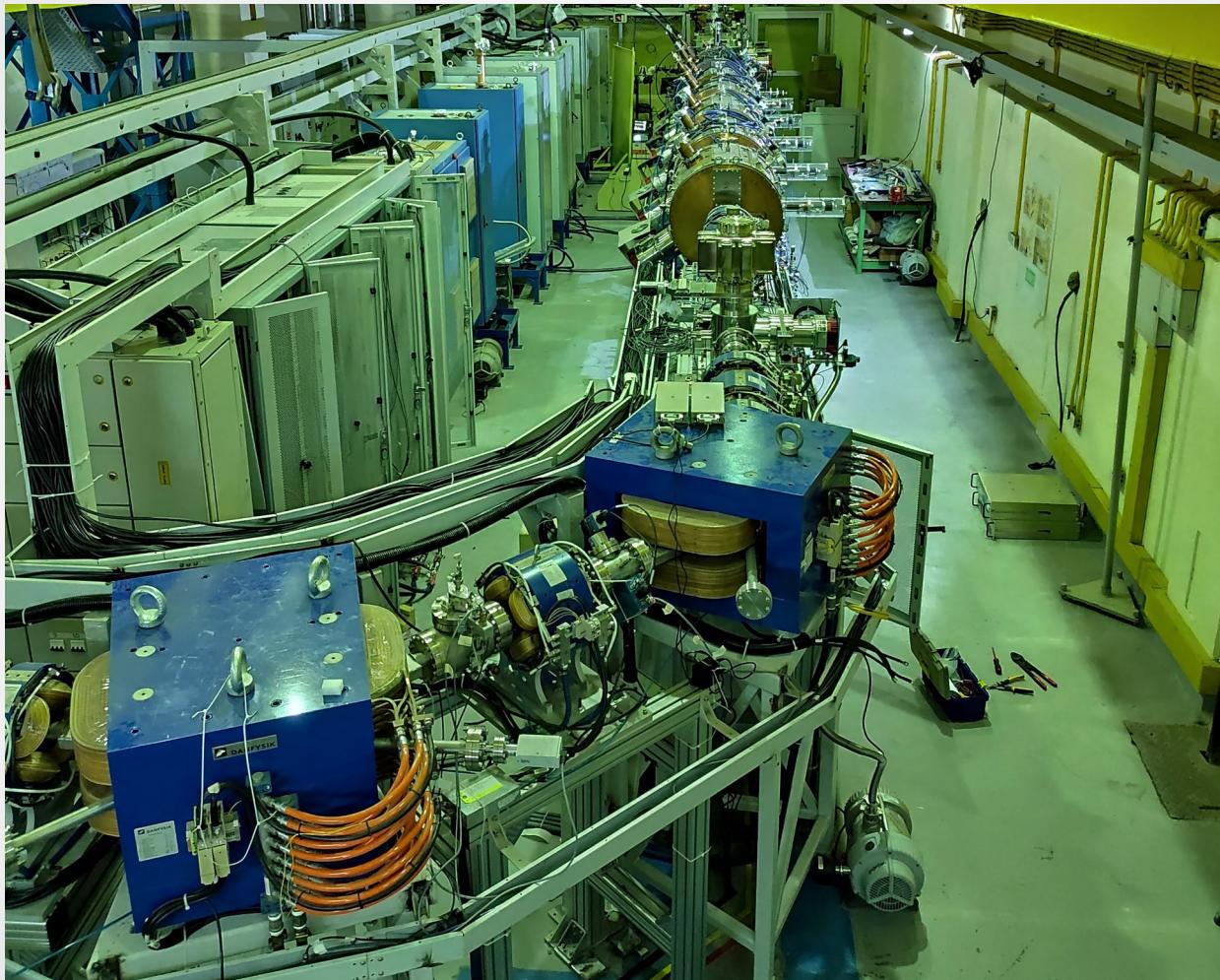
How all these expensive softwares became available for free Download ?

Will they remain so in future?

What is your role in it ?

Why am I concerned ??

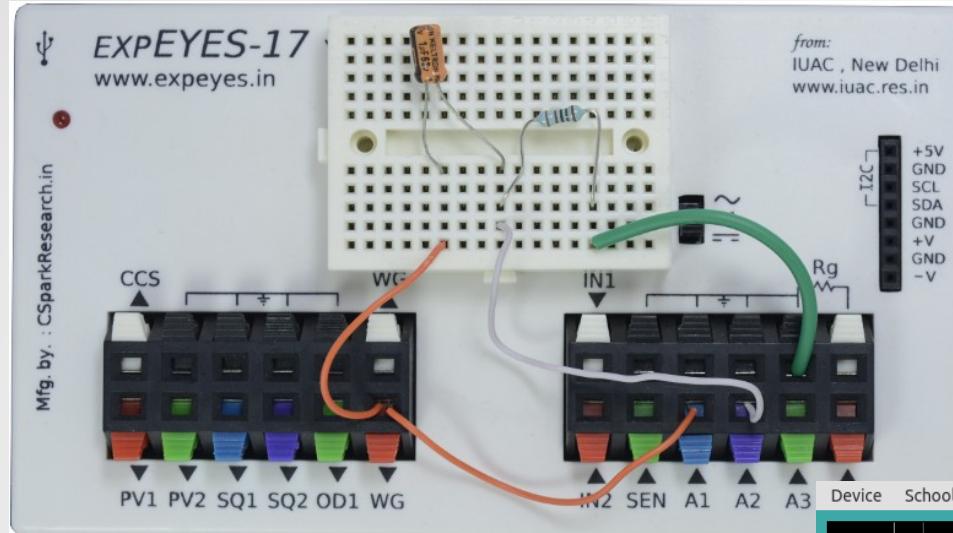
Controlling Particle Accelerators



```
Import pelcon  
p = pelcon.pelcon()  
Print p.get_voltage('CPS031', 'VC', 'KV', 2.2)
```

Any of the 2000 signals can be controlled/monitored from a Python front end.

Affordable Scientific Equipment.. ExpEYES



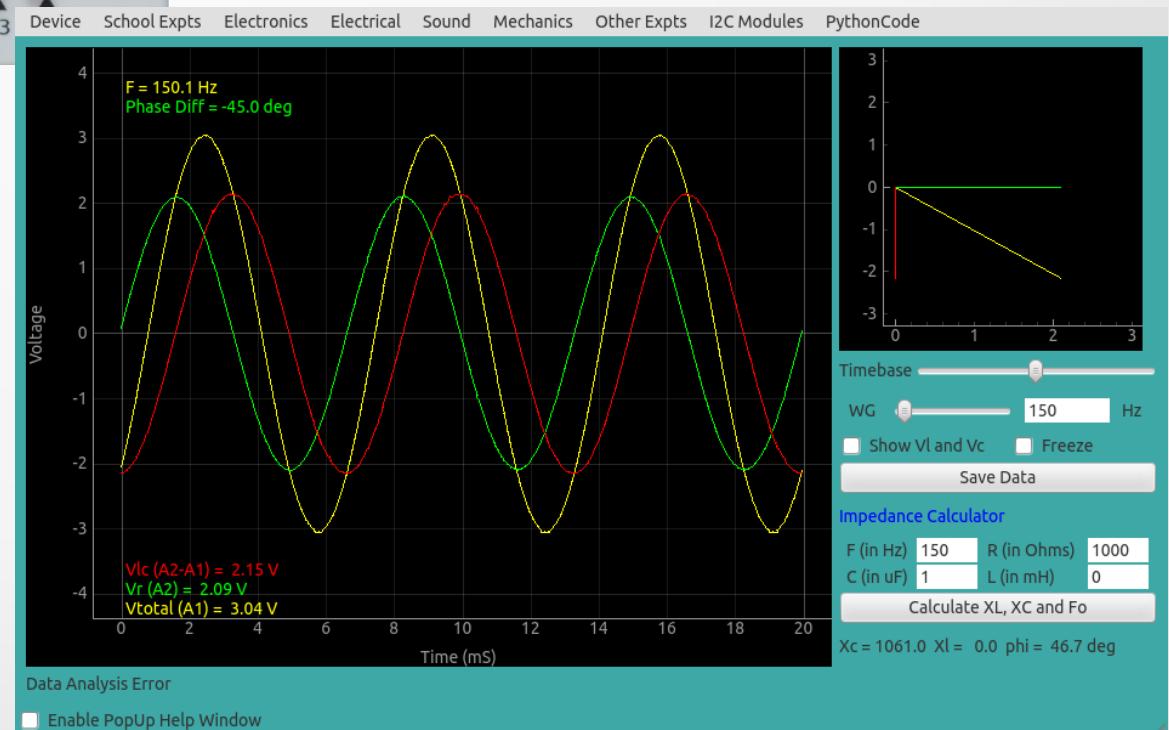
www.expeyes.in

Python powered electronics
Instrumentation.

Studying LCR circuits
Amplitude, frequency and phase
of AC are measured.

There is no frequency or phase
meter.

Done by fitting data with
equations using Scipy package.

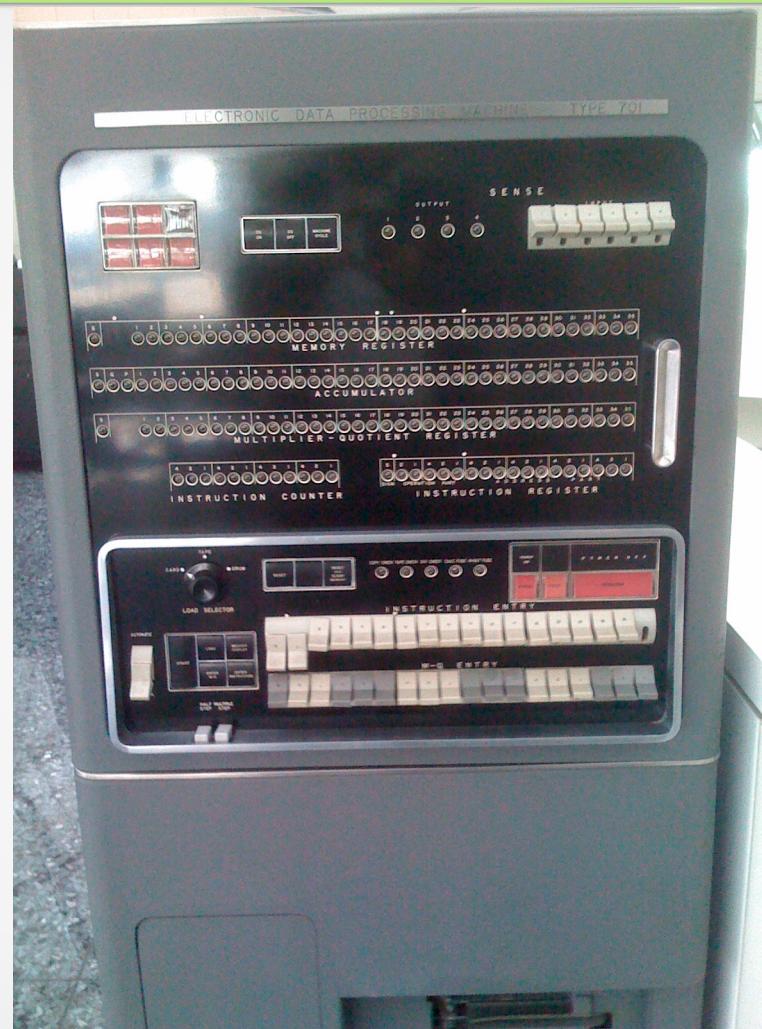


SciPy: Python supporting Science

- Science grows by free sharing of knowledge
- Better supported by a tool with the same ideology.

How do we ensure that ?

Early days of computing: IBM 701: May 21, 1952



US \$8,100 per month (for CPU only)

https://www.ibm.com/ibm/history/exhibits/701/701_1415bx01.html

Software Development Models (Main frames)

- SHARE Inc. is a volunteer-run user group for IBM mainframe computers that was founded in 1955 by Los Angeles-area users of the IBM 701 computer system.
- In 1959 SHARE released the SHARE Operating System (SOS), originally for the IBM 709 computer, later ported to the IBM 7090.
- SOS was one of the first instances of "commons-based peer production"

[https://en.wikipedia.org/wiki/SHARE_\(computing\)](https://en.wikipedia.org/wiki/SHARE_(computing))



Personal Computers ...

HOW TO "READ" FM TUNER SPECIFICATIONS

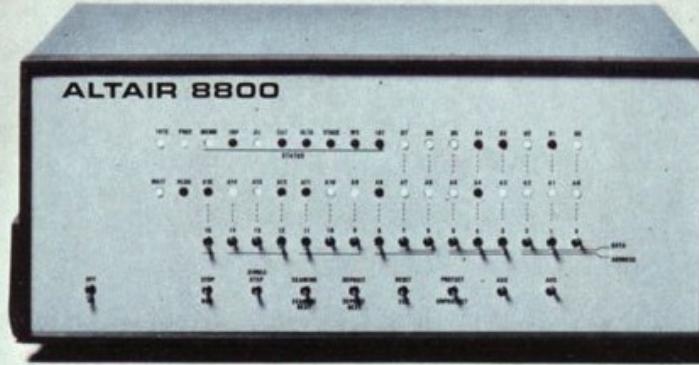
Popular Electronics

WORLD'S LARGEST-SELLING ELECTRONICS MAGAZINE JANUARY 1975 / 75¢

PROJECT BREAKTHROUGH!

World's First Minicomputer Kit to Rival Commercial Models...

"ALTAIR 8800" **SAVE OVER \$1000**



ALSO IN THIS ISSUE:

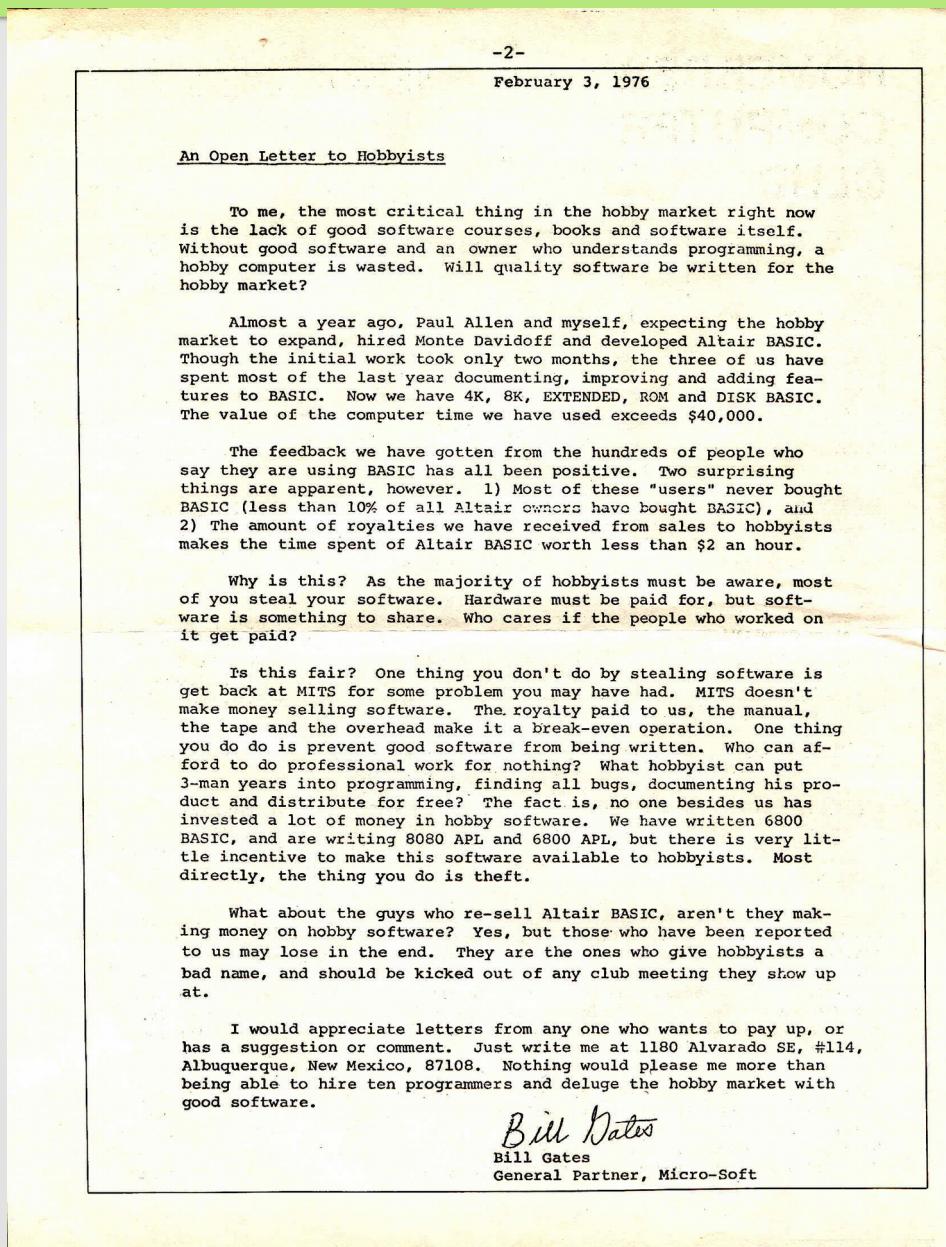
- An Under-\$90 Scientific Calculator Project

Programmed using
Front panel switches.

Software for Personal Computers

- In March 1974, Paul Allen, Bill Gates, and Monte Davidoff, created a BASIC interpreter that worked under simulation on a PDP-10 mainframe computer at Harvard.
- In 1975 it was tested on MITS Altair8080
- On July 22, 1975 MITS signed the contract with Allen and Gates.
- They got \$3000 at the signing and a royalty for each copy of BASIC sold; \$30 to \$60

Complaint against “Theft”



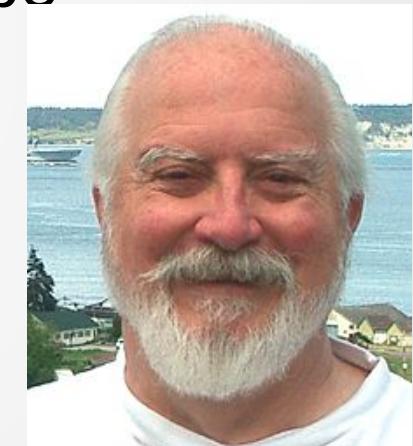
An Open letter from Bill Gates, on 3-Feb-1976. to Hobbyists complaining about people who are copying the BASIC interpreter without paying royalty.

“Most of you steal your software”

Reply to the “theft” complaint

- There is a viable alternative to the problems raised by [Bill Gates in his irate letter to computer hobbyists](#) concerning "ripping off" software. When software is free, or so inexpensive that it's easier to pay for it than to duplicate it, then it won't be "stolen".

Jim Warren



- TinyBASIC was published openly and later invented the term "copyleft" to describe this.
- This made it popular in the burgeoning early microcomputer market.

Decline of Free Software

- In the late 1970s and early 1980s, computer vendors and "software-only" companies began routinely charging for software licenses, marketing software as "Program Products" and imposing legal restrictions on new software developments, now seen as assets, through copyrights, trademarks, and leasing contracts.
- In 1979, AT&T began to enforce its licenses when the company decided it might profit by selling the Unix system.
- In an announcement letter dated 8-Feb-1983 IBM inaugurated a policy of **no longer distributing sources with purchased software**.

The free software movement: GNU Project

- Richard Stallman (Free as in Freedom)
- Physics BA, Harvard, 1974. Programmer at MIT
- In 1983, launched the GNU Project to write a completely free operating system.
- The Free Software Foundation, 1985
- GNU General Public License
- By 1991, GNU OS was almost complete **except the Kernel (HURD)**.



The Linux Kernel, from Linus Torvalds

Computer science student and University of Helsinki, Finland.

25 August, 1991, he made a posting to the comp.os.minix newsgroup:

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.

December 1992 he published version 0.99 using the GNU General Public License.



A Free Operating System

- March 1994, Linux kernel 1.0.0 was released
- Combined with software from GNU and several other projects a Free Operating system became available.
- It is called GNU/Linux

The end users need some mechanism to use the software available from different sources.

Distributions

- A typical Linux distribution comprises a Linux kernel, GNU tools and libraries, additional software, documentation, and an install script packaged on a media like a CD.
- Slackware Individual
- RedHat Corporation
- Debian Non profit organization
- Ubuntu Corporation (free/paid business model)

Current Free Software availability

- GNU/Linux OS , several distributions
- Compilers/Interpreters for almost all languages
- RDBMS systems
- Office packages
- Web and mail Servers
- Scientific computation
- Graphics
- Networking
- Education

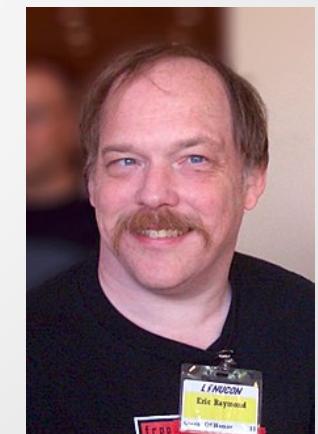
Easy to install and under GPL compatible licenses

Free vs Open Source

- Free software is a social and moral philosophy because it places more emphasis on freedom.
Freedom is more important than software.
- open source is a development philosophy that is more business oriented, attractive to the corporate world. It emphasizes the technical merits of the open source approach.

<http://old.law.columbia.edu/>

<https://www.gnu.org/philosophy/rms-kernel-trap-interview.en.html>



Eric Raymond

Is there any threat to Free Software ???

- Microsoft funding of SCO controversy
- Story of an upgrade that costed Rs/ 120,000/-
- Do you get an OS media when you buy MS Windows ?
 Implications of it
- embrace, extend, and exterminate
- <http://techrights.org/2019/06/30/how-free-libre-software-comes-under-attack/>

Tricks with data..

Comes v. Microsoft

From: Bill Gates
Sent: Saturday, December 05, 1998 9:44 AM
To: Bob Muglia (Exchange); Jon DeVaan; Steven Sinofsky
Cc: Paul Maritz
Subject: Office rendering

One thing we have got to change in our strategy - allowing Office documents to be rendered very well by other peoples browsers is one of the most destructive things we could do to the company.

We have to stop putting any effort into this and make sure that Office documents very well depends on PROPRIETARY IE capabilities.

Anything else is suicide for our platform. This is a case where Office has to avoid doing something to destroy Windows.

I would be glad to explain at greater length.

Likewise this love of DAV in Office/Exchange is a huge problem. I would also like to make sure people understand this as well.

Halloween Documents

<http://www.catb.org/~esr/halloween/>

- OSS poses a direct, short-term revenue and platform threat to Microsoft, particularly in server space.
- Additionally, the intrinsic parallelism and free idea exchange in OSS has benefits that are not replicable with our current licensing model
- Recent case studies (the Internet) provide very dramatic evidence ... that commercial quality can be achieved / exceeded by OSS projects.
- ...to understand how to compete against OSS, we must target a process rather than a company.

Help is available !!!

The screenshot shows a Mozilla Firefox browser window with the title bar "How to Remove Linux and Install Windows on Your Computer - Mozilla Firefox". The address bar displays the URL <https://support.microsoft.com/en-us/help/247804/>. The page content is from Microsoft Support, featuring the Microsoft logo and navigation links for Office, Windows, Surface, Xbox, Deals, Support, and More. The main heading is "How to Remove Linux and Install Windows on Your Computer". Below the heading, a note mentions a Windows XP version (314458). A "Summary" section is present, and a "Site feedback" button is visible on the right.

How to Remove Linux and Install Windows on Your Computer

[Email this article](#)

[Print](#)

[Subscribe RSS Feeds](#)

For a Microsoft Windows XP version of this article, see [314458](#).

Summary

This article describes how you can remove the Linux operating system from your computer, and install a Windows operating system. This article also assumes that Linux is already installed on the hard disk using Linux native and Linux swap partitions, which are incompatible with the Windows operating system, and that there is no free space left on the drive.

Windows and Linux can coexist on the same computer. For additional information, refer to your Linux documentation.

[Site feedback](#)

Counter help: How to remove ****

- Download any GNU/Linux ISO image
- Make a USB pendrive bootable with it
- Boot your PC with it and start using (no data saving)
- Understand the hard disk partitioning
- Delete the last partition (we need around 50 GB)
- Install and make the system dual boot

With time you will realize that walking through a door is easier than jumping through a window.

“People who don't value their freedom will lose it”

History says “Your choice matters...”

When National Semiconductor, which made their own microprocessor chips in '77 or '78, decided they needed a BASIC ... they asked, 'What's the most popular BASIC?' And the answer was Microsoft BASIC because everybody had copied it and everybody was using it.

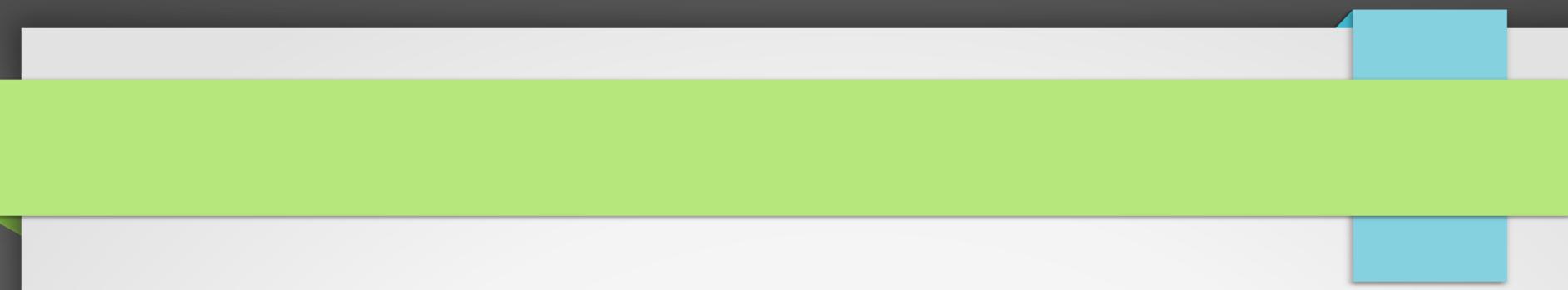
This was the marketing function and the hobbyists did the marketing with a complete antipathy of the company in question.

There were other BASICs and, you know, some of them might even have been better. ... [Gates's later success] was in a certain measure because of what we did, that he said we shouldn't do, we were thieves to do it, and all.

Lee Felsenstein



Osborne 1
April 3, 1981



Thank You