

# Introduzione al Software Libero

IPSIA – Fermo

23 Marzo 2013

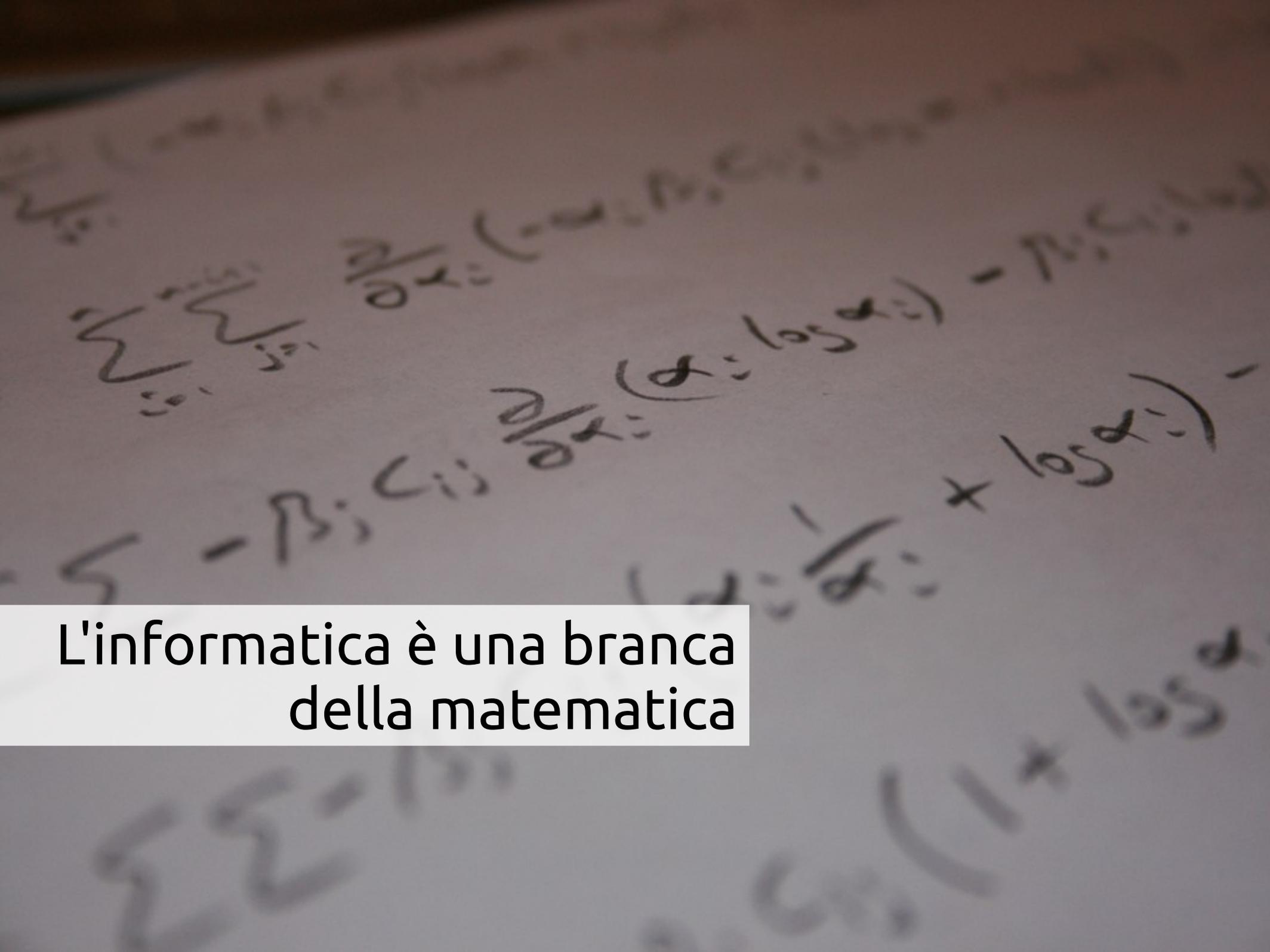
Andrea Colangelo

Ubuntu Developer  
Debian Maintainer

Che cos'è  
l'informatica?

```
PLATRON 1.00  
Get:51 http://ftp.us.debian.org lenny/main libxxf86vm1 1:1.0.3-1 [7.9kB]  
Get:52 http://ftp.us.debian.org lenny/main libxserver-utl 1:1.0.3-2 [30.0kB]  
Get:53 http://ftp.us.debian.org lenny/main x11-xserver-utils 1:1.0.3-2 [26.6kB]  
Get:54 http://ftp.us.debian.org lenny/main xauth 1:1.0.3-2 [26.6kB]  
Get:55 http://ftp.us.debian.org lenny/main xbitmaps 1.0.1-2 [31.3kB]  
Get:56 http://ftp.us.debian.org lenny/main xinit 1.0.9-2 [31.3kB]  
Get:57 http://ftp.us.debian.org lenny/main xbase-clients 1:7.3+10 [27.0kB]  
Get:58 http://ftp.us.debian.org lenny/main xdm 1:1.1.8-5 [193kB]  
Get:59 http://ftp.us.debian.org lenny/main libpaper1 1.1.23+nmu1 [28.6kB]  
Get:60 http://ftp.us.debian.org lenny/main psutils 1.17-26 [85.1kB]  
Get:61 http://ftp.us.debian.org lenny/main a2ps 1:4.14-1 [927kB]  
Get:62 http://ftp.us.debian.org lenny/main libaspell15 0.60.6-1 [603kB]  
Get:63 http://ftp.us.debian.org lenny/main aspell 0.60.6-1 [290kB]  
Get:64 http://ftp.us.debian.org lenny/main aspell-en 6.0-0-5.1 [249kB]  
Get:65 http://ftp.us.debian.org lenny/main bzip2 1.0.5-1 [45.6kB]  
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Get:67 http://ftp.us.debian.org lenny/main dbus 1.2.1-4 [227kB]  
Get:68 http://ftp.us.debian.org lenny/main tk2.0-common 2.12.11-4 [51kB]  
Get:69 http://ftp.us.debian.org lenny/main libtk2.0-0 2.16.6-1 [756kB]  
Get:70 http://ftp.us.debian.org lenny/main tk1.0-0 1.22.0-1 [79.2kB]  
Get:71 http://ftp.us.debian.org lenny/main sfs2 2.1.0-5 [28.3kB]  
Get:72 http://ftp.us.debian.org lenny/main s-0.0-0 1.0-4 [27.1kB]  
Get:73 http://ftp.us.debian.org lenny/main libdirectfb-1.0-0 1.0.1-11 [1.0kB]  
Get:74 http://ftp.us.debian.org lenny/main libdirectfb-1.0-0 978858/11401 [245kB/s 5.0kB]
```



The background of the image shows a piece of paper with handwritten mathematical formulas in black ink. The formulas are somewhat blurry and include terms like  $\frac{1}{e^x}$ ,  $\log(x)$ , and  $\frac{1}{x}$ .

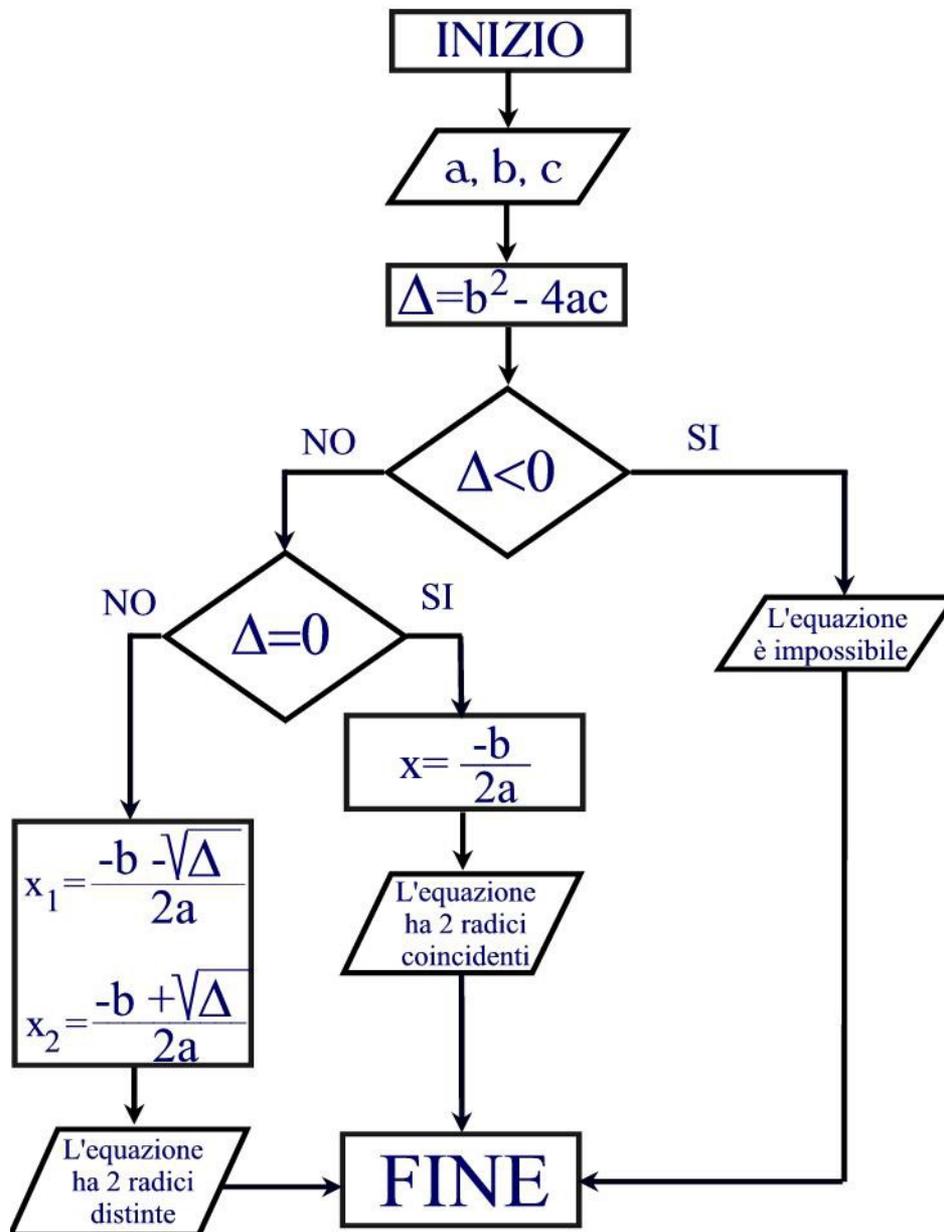
L'informatica è una branca  
della matematica



L'informatica studia  
l'informazione



*“L'hardware è tutto quello che puoi prendere a calci,  
il software è tutto quello che puoi solo maledire.”*



Algoritmo  
 ↓  
 Linguaggio  
 ↓  
 Software

SANGIORGI & WALKER

# The $\pi$ -calculus

A Theory of Mobile Processes

CAMBRIDGE

Guzdial  
Rose



# Squeak

Open Personal Computing  
and Multimedia

DYBVIK | **THE SCHEME PROGRAMMING LANGUAGE** ANSI SCHEME

SECOND EDITION



Nelson

Systems Programming with **Modula-3**

# Learning Python

Lutz & Ascher



THIRD EDITION

# Programming Perl

Wall,  
Christiansen  
& O'Reart

# Miranda

The Craft of  
Functional  
Programming

Thompson

ULLMAN

ELEMENTS OF ML PROGRAMMING

ML97 EDITION



The Little MLer

Felleisen and Friedman

# The Java™ Programming Language

Second Edition

Arnold  
Gosling



# The Dylan Reference Manual

Shalit

Addison  
Wesley

STROUSTRUP



# THE C++ PROGRAMMING LANGUAGE

THIRD EDITION

KERNIGHAN · RITCHIE

THE C PROGRAMMING LANGUAGE

SECOND EDITION



ldman

Software Construction  
and Data Structures with

# Ada 95

ADDISON  
WESLEY

```
#!/usr/bin/python
# Copyright (C) 2013 Andrea Colangelo <warp10@ubuntu.com>
# Released under the terms of GNU GPL (see: http://www.gnu.org/licenses/gpl-3.0.txt)
```

```
import sys
import math
```

```
class Equation():
    def __init__(self, a, b, c):
        self.a, self.b, self.c = a, b, c
        self.delta = self.__calculate_delta()

    def __calculate_delta(self):
        return (self.b ** 2) - (4 * self.a * self.c)

    def solve(self):
        if self.delta < 0:
            print "No real solutions."
        elif self.delta == 0:
            print "Two coincident solutions: ", str(-self.b / (2 * self.a))
        else:
            sqrd_delta = math.sqrt(self.delta)
            print "First real solution: ", str((-self.b + sqrd_delta) / (2 * self.a))
            print "Second real solution: ", str((-self.b - sqrd_delta) / (2 * self.a))

if __name__ == "__main__":
    try:
        a, b, c = sys.argv[1:4]
        a, b, c = float(a), float(b), float(c)
    except:
        print "Three numerical coefficients required. Aborting.", sys.exit()
    equation = Equation(a, b, c)
    equation.solve()
```



**Mele vs. Idee**



All'improvviso uno sconosciuto:  
Richard Stallman





**Libertà 0:  
Utilizzo**





Libertà 2:  
Copia



Libertà 3:  
Modifica

The image shows several stacks of US \$100 bills, each secured with a yellow rubber band. The bills are stacked on top of each other, with the top bill of each stack clearly visible. The text "Libero ≠ gratuito!" is overlaid in the center of the image. The bills feature the portrait of Benjamin Franklin and the Federal Reserve seal. The serial number "DJ 36397802 A" is visible on the top bill of the middle stack, and "DJ 36397805 A" is visible on the top bill of the bottom stack. The text "ONE HUNDRED DOLLARS" and "100" are also visible on the bills.

Libero ≠ gratuito!



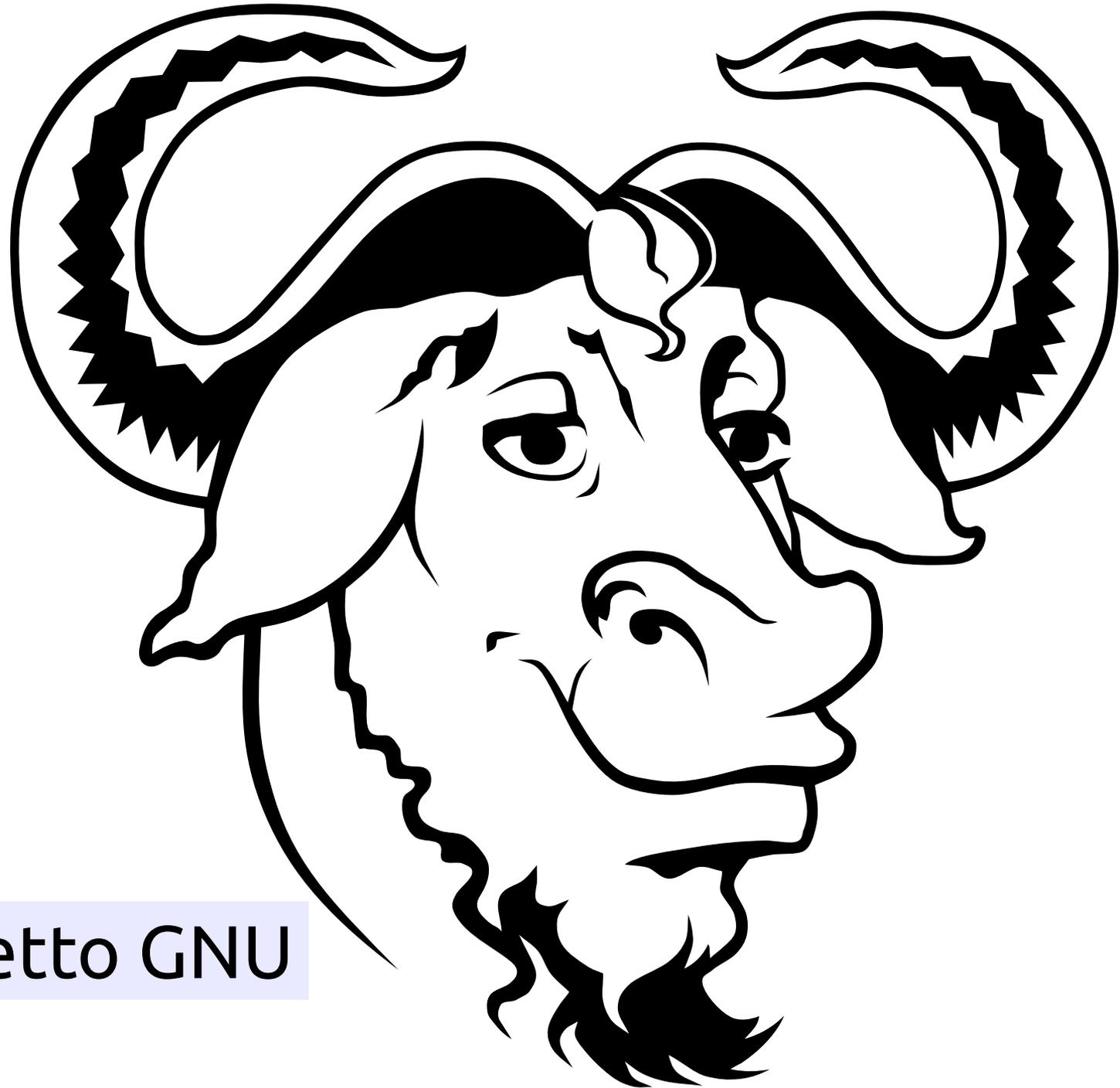
DR  
Main Campus DR  
800  
Centennial Campus



1.130.000.000 \$



Libero è bello!  
(e vantaggioso...)



1984: Il progetto GNU



Sistema operativo?  
Kernel?

*Ma di che cosa stiamo  
discutendo? (cit.)*

# Qualche sistema operativo famoso





Il kernel



**All'improvviso uno sconosciuto  
(parte seconda): Linus Torvalds**

# comp.os.minix

Message from discussion [What would you like to see most in minix?](#)

**Linus Benedict Torvalds** [View profile](#)

[More options](#) Aug 26 1991, 2:12 am

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 (torva...@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 :-).

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*“Solo un hobby:  
non sarà grande e  
professionale  
come GNU”...*

L'importanza di  
chiamarsi GNU/Linux



Powered By

**GNU/Linux**



Arrivano le “*distro*”!



# Dov'è Linux oggi?





← 乗車案内 (乗車案内) →

15:50 神戸	16:00 姫路	16:10 岡山	16:20 広島	16:30 岡山	16:40 姫路	16:50 神戸
16:50 岡山	17:00 広島	17:10 岡山	17:20 姫路	17:30 神戸	17:40 岡山	17:50 広島

乗車券は必ずお持ちください。乗車の際は必ずお持ちください。

-230

JR 500  
WEST JAPAN

WALL ST  
← 22-51





SWEEP RANGE  
SWEEP TRACK  
CURSOR INTENSITY  
SWEEP INTENSITY

PANEL LIGHTS  
SWEEP VIDEO 2  
SWEEP VIDEO 3  
SPARE VIDEO  
MAP VIDEO

FOCUS  
MTI INTERVAL

OFF 1 2 3

GATED MTI GA  
BACKO

SWEEP ORIGIN  
OFF CENTER  
CENTER

CURSOR  
DECENTERING

INCREASE

RANGE STROBE

DECREASE

ON  
OFF ENHANCER  
ON  
OFF LOW PTC  
NORMAL  
ON  
OFF







NORTHROP GRUMMAN

EMERGENCY ACCESS

DO NOT PUSH

BB

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Google™

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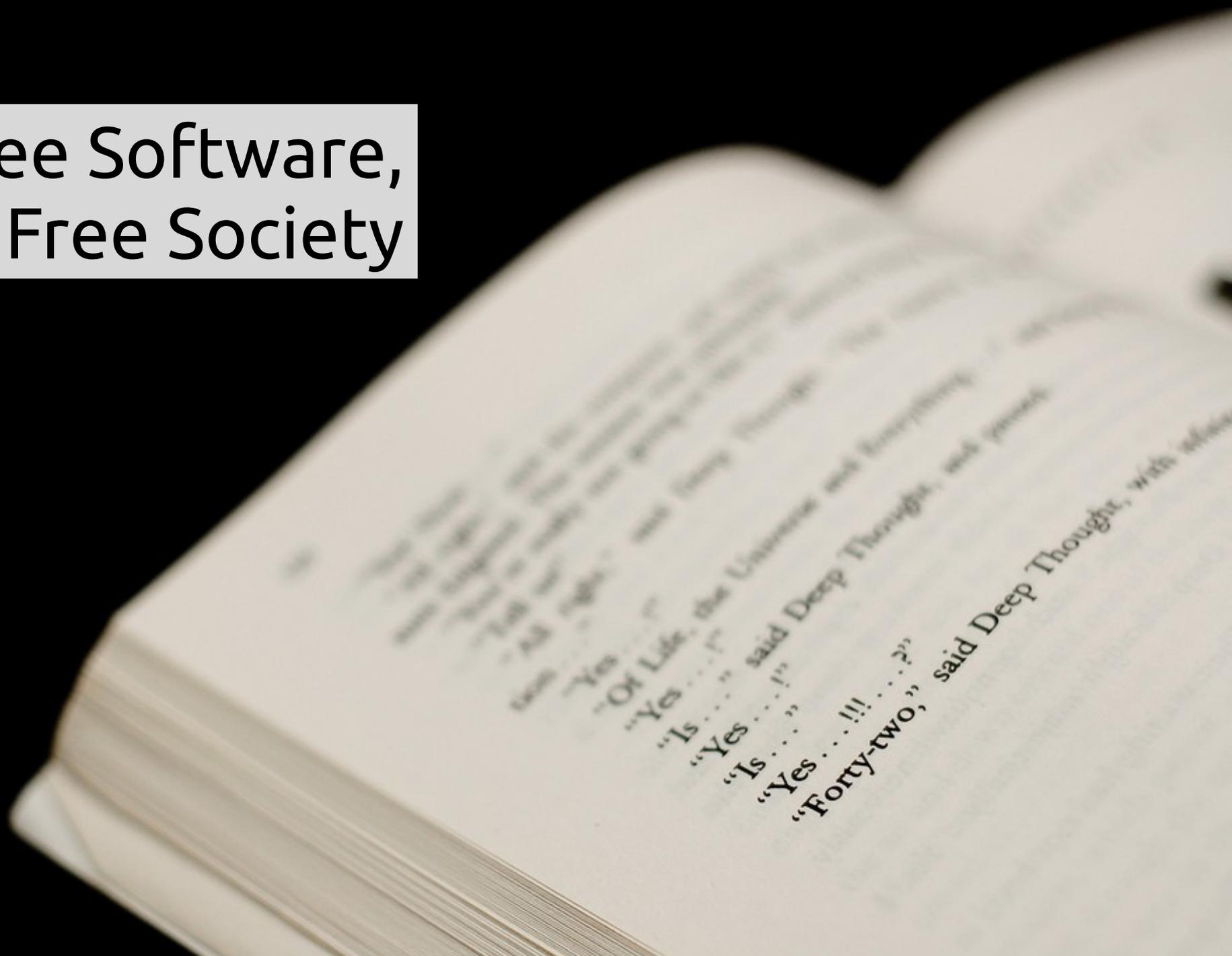
amazon.com®





Blue Gene/P

# Free Software, Free Society



...  
"Yes ..."  
"Of Life, the Universe and Everything ..."  
"Yes ..."  
"Is ...?" said Deep Thought, and pressed  
"Yes ...!"  
"Is ...?"  
"Yes ...!!! ...?"  
"Forty-two," said Deep Thought, with infinite

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