

# Progetti Interdisciplinari

## 5-Senses Involvement!

### Engage Students and Interact with Students

Preparare una mappa concettuale

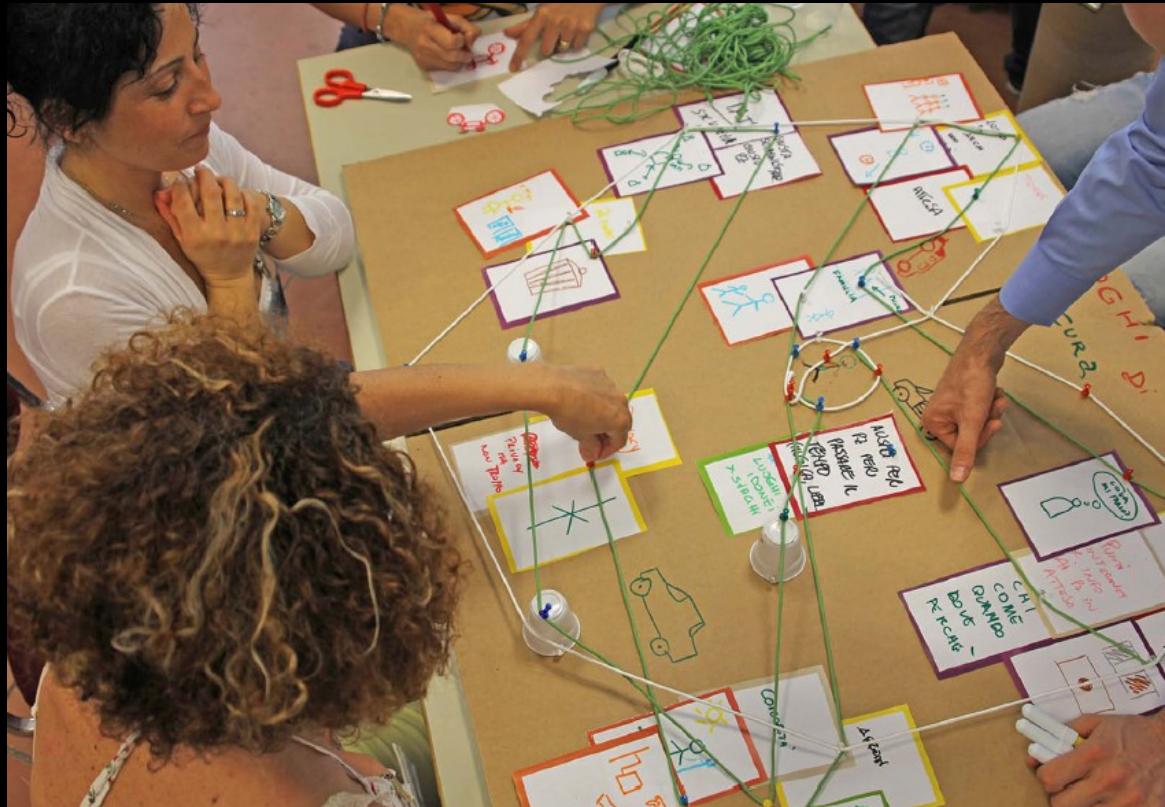
Trovare gli strumenti

Usare le tecnologie piu' adatte ...  
(Carta, Pennarelli, Web, Multimedia, etc.)

Descrivere l'esperienza

# Participatory (Cooperative) Design (Scandinavia, 1970s)

## Active Involvement of Workplace Practitioners in Systems Design

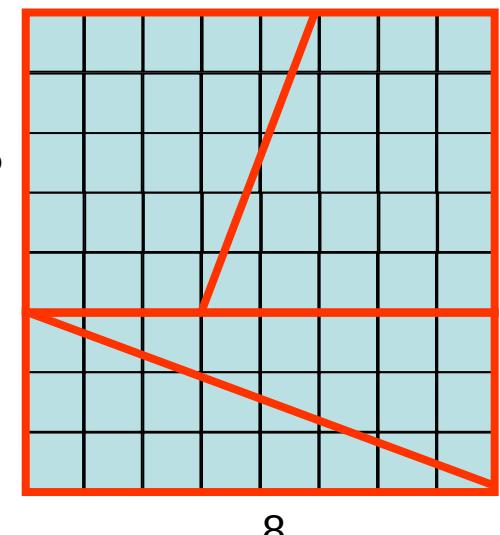


Source: Loccioni, LAB@AOI

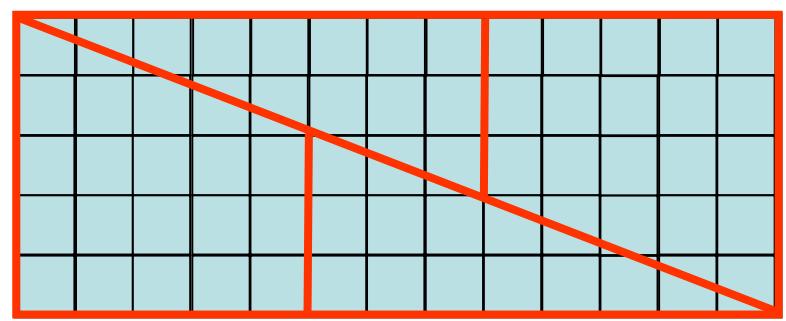
Florence Project (1983): Participatory Design in Hospitals (Oslo National Hospital) & Oslo University, Dept. Informatics, prof. Kristen Nygaard  
(ACM Turing Award, IEEE Von Neumann Award, CPSR Wiener Award)  
Focused on the daily work of "nurses," based on their professional language and skills

Bjerknes G., Bratteteig T. (1995), User Participation and Democracy. A Discussion of Scandinavian Research on System Development, Scandinavian Journal of Information Systems, vol 7 no 1, April 1995, pp. 73-98

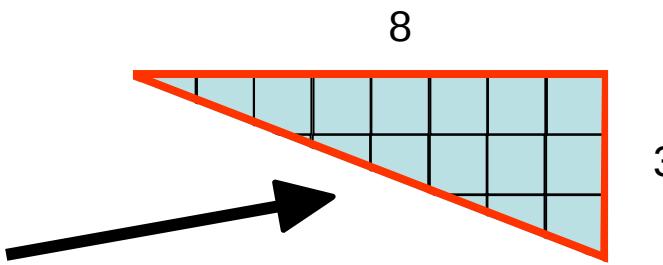
# Progetto "Quadrato-Rettangolo" (Data has Context)



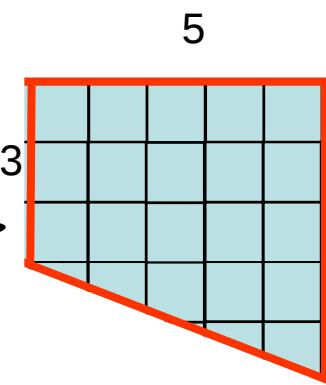
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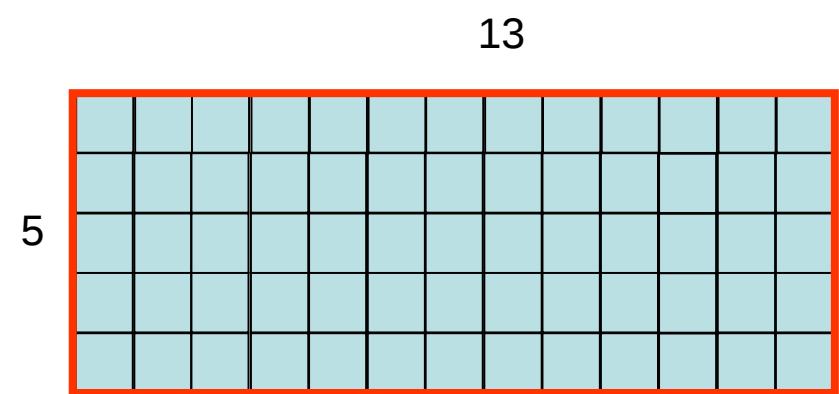
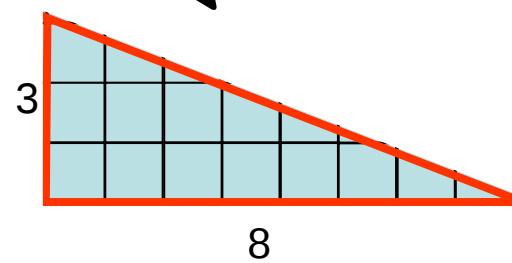
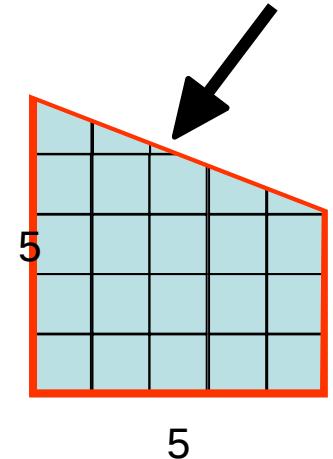
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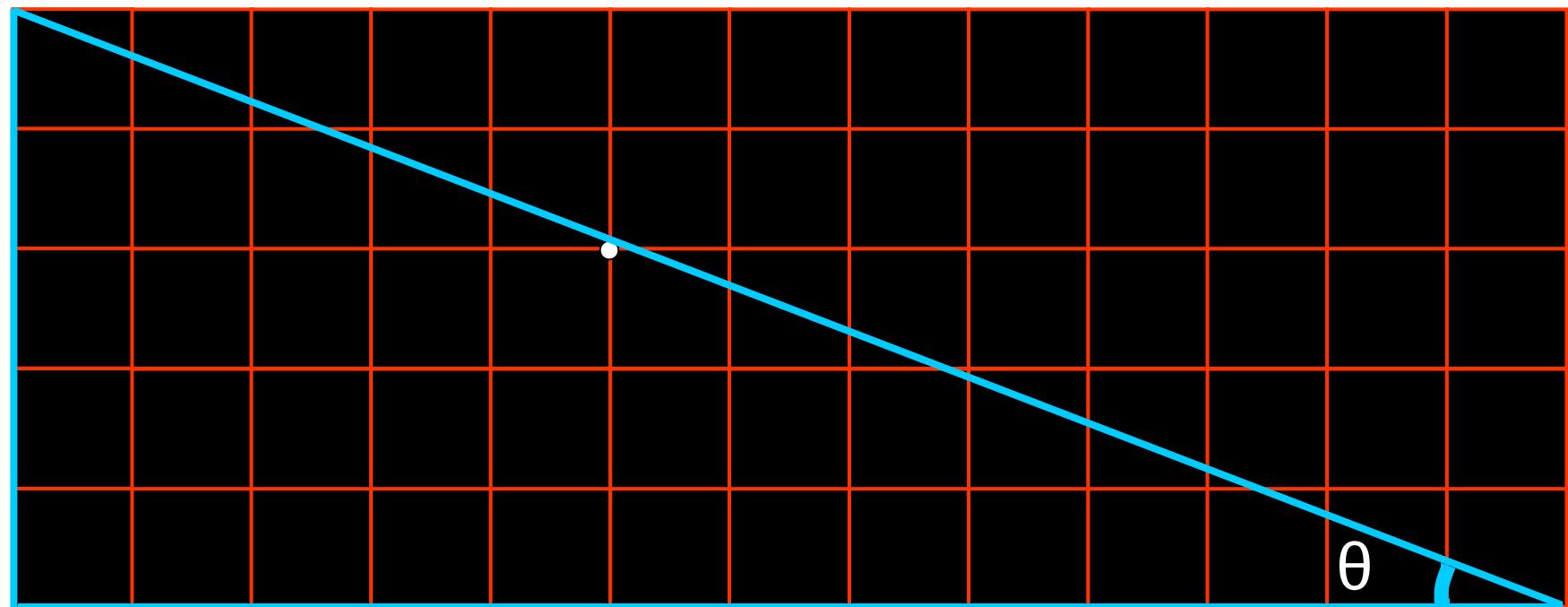


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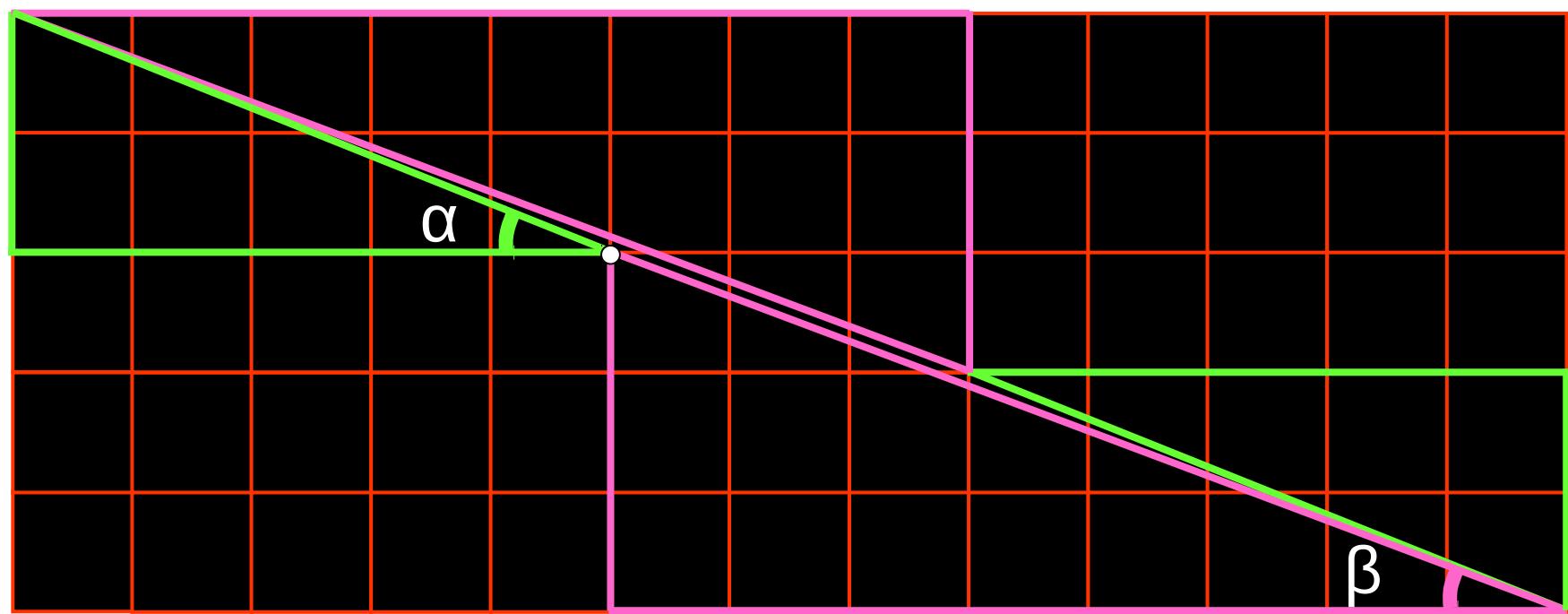


5





$$\theta = \operatorname{arctg} (5/13) = \operatorname{arctg} (0,385) = 21,0375 \text{ grad} = 0,37 \text{ rad}$$

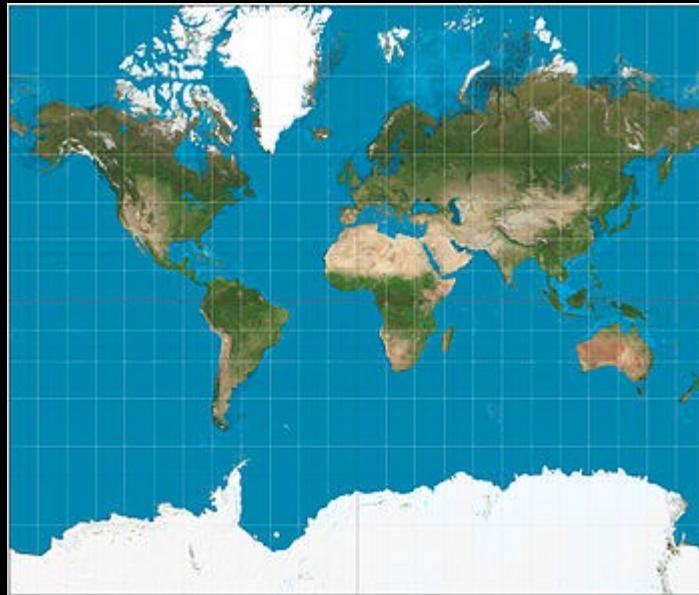


$$\alpha = \operatorname{arctg} (2/5) = \operatorname{arctg} (0,4) = 21,8014 \text{ grad} = 0,38 \text{ rad}$$

$$\beta = \operatorname{arctg} (3/8) = \operatorname{arctg} (0,375) = 20,5560 \text{ grad} = 0,36 \text{ rad}$$

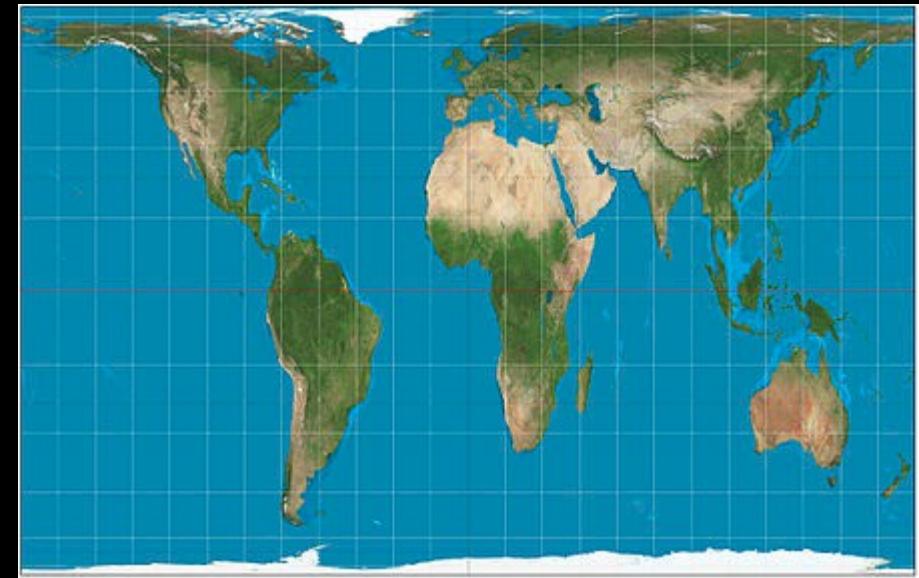
# Progetto "Mercator-Peters"

## (Data has Context)



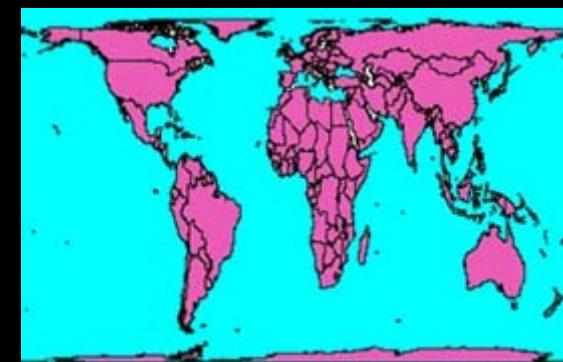
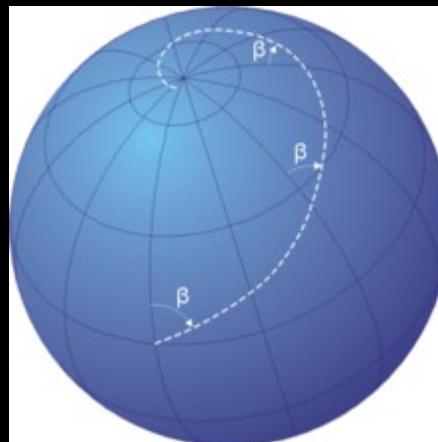
Mercator, 1569

Lines conserve Angles with Meridians  
(Standard map for nautical purposes)



Peters, 1973

Areas conserve Proportions  
(promoted by UNESCO)

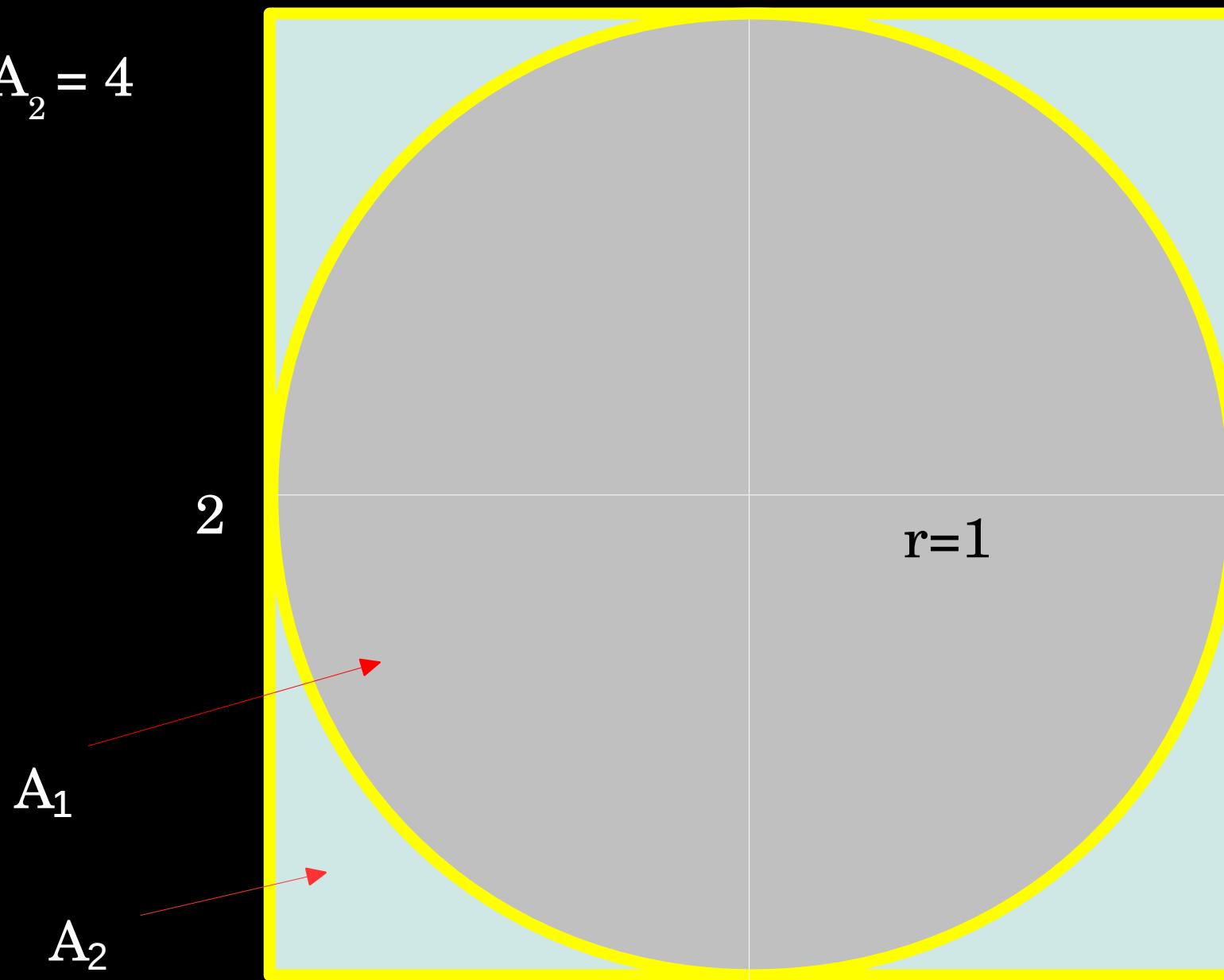


# Progetto "Pi-Greco"

$$A_1 = \pi r^2 = \pi = 3,141592\dots$$

$$A_2 = 4$$

$$\frac{A_1}{A_2} = \frac{\pi}{4}$$



# Progetto "e-Democracy: Prediamo una decisione importante"

(e-citizens skills)



# Progetto "Pasta"



# Progetto "Plasmiamo la materia"



# Progetto "Hawking" e-Accessibility



Stephen Hawking  
(Oxford, 1942 - )

make ICT accessible to all  
meeting a wide spectrum of people's needs  
in particular any special needs.

# Progetto "Tele-Interpretation"

## Tele-interpretation in medicine:

National dissemination of  
language interpretation services  
by videoconferencing  
to the hospital sector



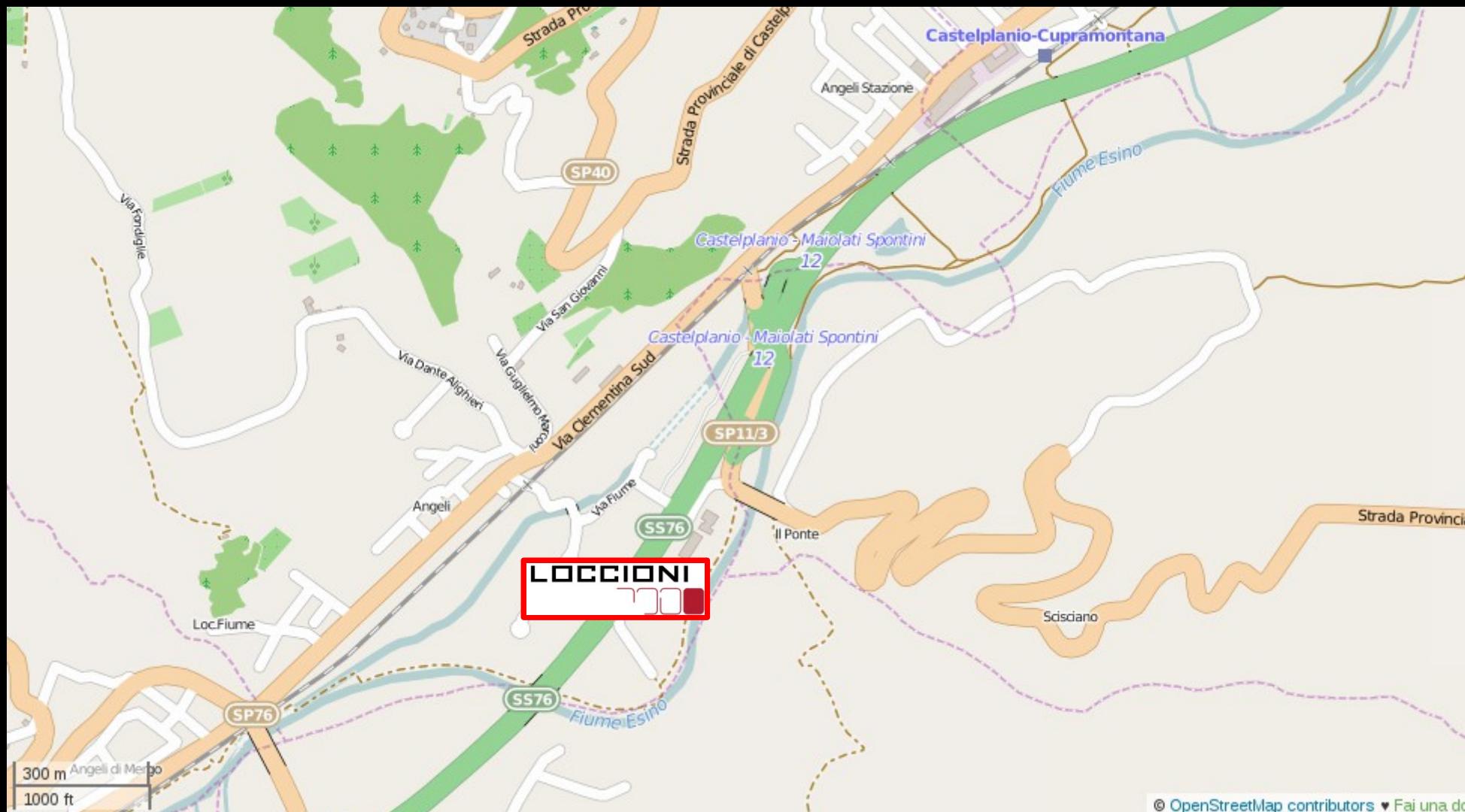
Need for language interpretation

- Communication with patients with language difficulties
- Inappropriate language interpretation
- Untrained persons including children and other relatives
- Increasing cost of face-to-face interpretation
- Lack of qualified interpreters
- Travel time and costs
- Waiting time or cancelled appointments

# Progetto "Film: La Valle dell'Esino"



# Progetto "OpenStreetMap: la Valle dell'Esino"

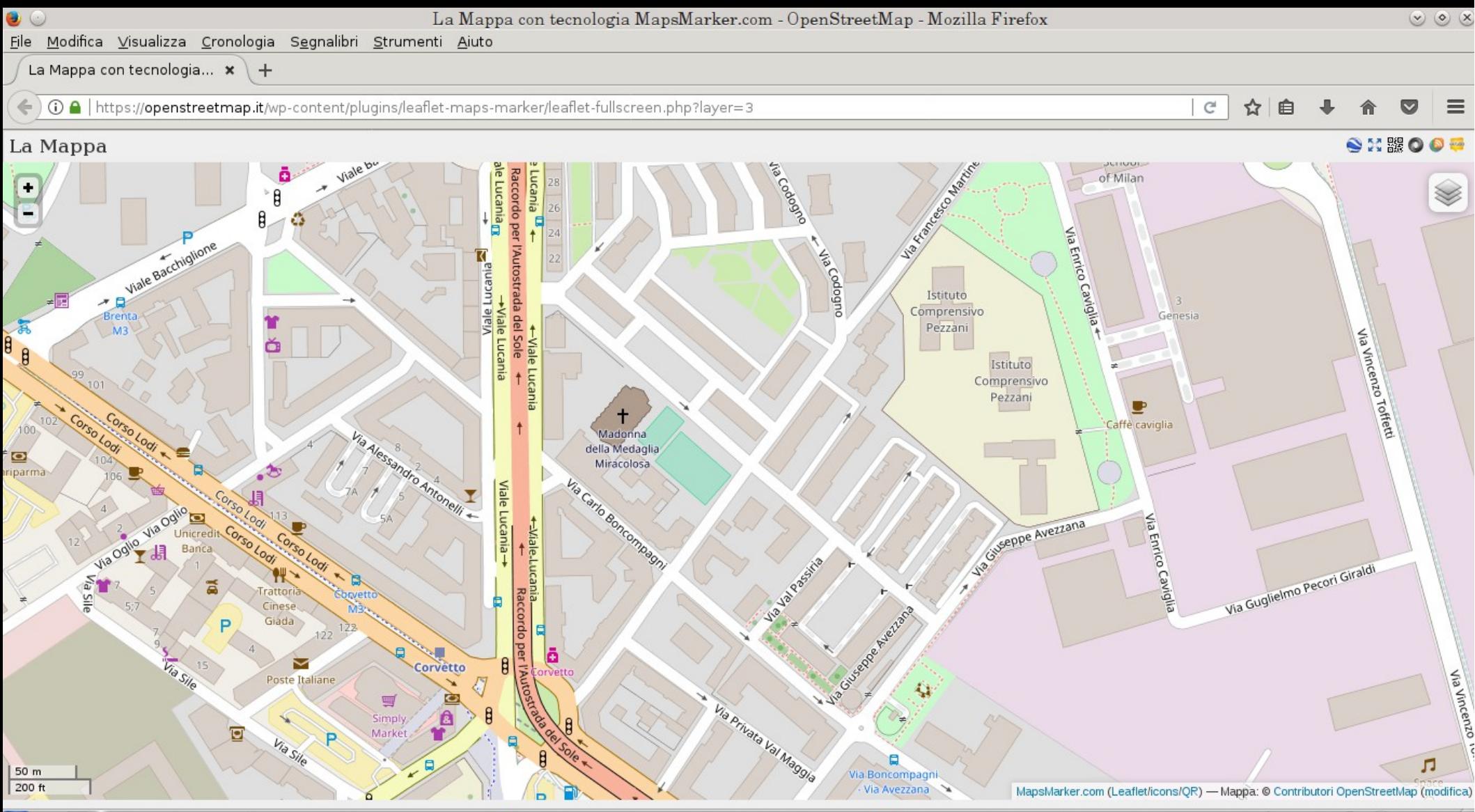


Mappa open!

# Progetto "Film: il mio quartiere"



# Progetto "OpenStreetMap: il mio quartiere"



Mappa open!

# Progetto "Turing, 1937"

230 A. M. TURING [Nov. 12,  
ON COMPUTABLE NUMBERS, WITH AN APPLICATION TO THE ENTSCHEIDUNGSPROBLEM  
By A. M. TURING.  
[Received 28 May, 1936.—Read 12 November, 1936.]  
[Extracted from the Proceedings of the London Mathematical Society, Ser. 2, Vol. 42, 1937.]

The “computable” numbers may be described briefly as the real numbers whose expressions as a decimal are calculable by finite means. Although the subject of this paper is ostensibly the computable numbers, it is almost equally easy to define and investigate computable functions of an integral variable or a real or computable variable, computable predicates, and so forth. The fundamental problems involved are, however, the same in each case, and I have chosen the computable numbers for explicit treatment as involving the least cumbersome technique. I hope shortly to give an account of the relations of the computable numbers, functions, and so forth to one another. This will include a development of the theory of functions of a real variable expressed in terms of computable numbers. According to my definition, a number is computable if its decimal can be written down by a machine.

In §§ 9, 10 I give some arguments with the intention of showing that the computable numbers include all numbers which could naturally be regarded as computable. In particular, I show that certain large classes of numbers are computable. They include, for instance, the real parts of all algebraic numbers, the real parts of the zeros of the Bessel functions, the numbers  $\pi$ ,  $e$ , etc. The computable numbers do not, however, include all definable numbers, and an example is given of a definable number which is not computable.

Although the class of computable numbers is so great, and in many ways similar to the class of real numbers, it is nevertheless enumerable. In § 8 I examine certain arguments which would seem to prove the contrary. By the correct application of one of these arguments, conclusions are reached which are superficially similar to those of Gödel.<sup>†</sup> These results

† Gödel, “Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme, I”, *Monatshefe Math. Phys.*, 38 (1931), 173–198.

## 1937: Turing Machine



Alan Turing  
(London, UK, 1912 - Wilmslow, UK, 1954)

**Il primo hacker:  
Alan Turing**

La storia di uno dei più grandi matematici  
del Novecento



Alan M. Turing  
(Londra 1912 - Wilmslow 1954)

Una lettura di  
Norberto Patrignani

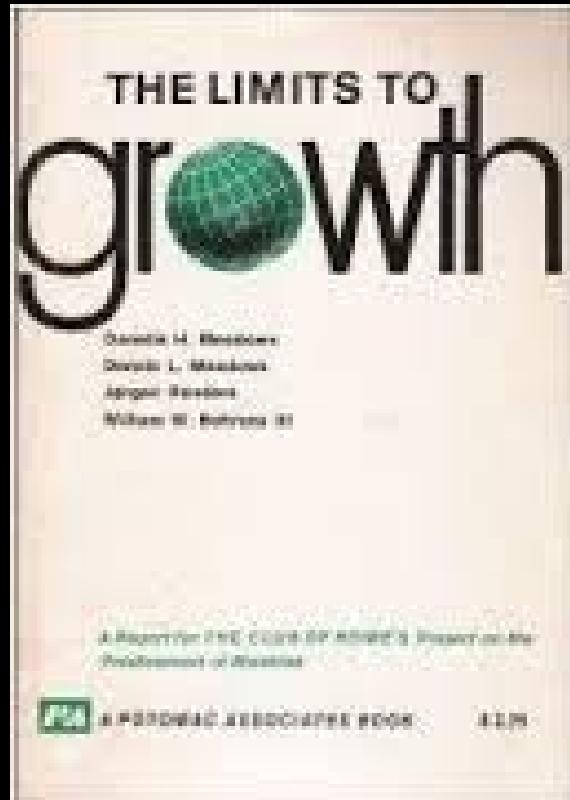
  
Questa opera è distribuita con licenza Creative Commons  
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[www.bookliners.com](http://www.bookliners.com)

Source: Turing A., "On computable numbers, with an application to the Entscheidungsproblem" from Proceedings of the London Mathematical Society, (Ser. 2, Vol. 42, 1937)

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# Progetto "Club di Roma, 1972"

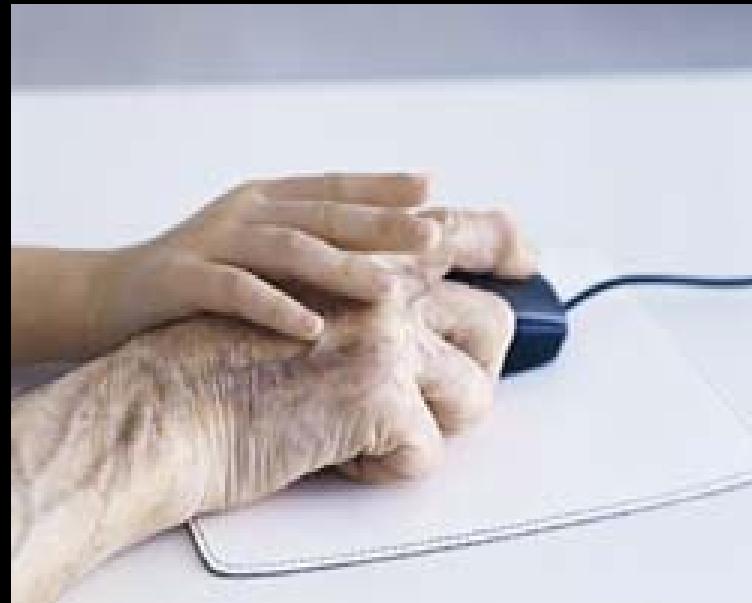


William W. Behrens III, Jay W. Forrester,  
Donella H. Meadows, Dennis L. Meadows,  
Jørgen Randers, 1972

# Progetto "Berlino, 1989"



# Progetto "Adotta una persona anziana"



# Progetto "Free Software"



*"Il software libero si riferisce alla liberta' di poter eseguire, copiare, distribuire, studiare, cambiare e migliorare il software"*

## 1985: Free Software (GNU Manifesto)



Richard M. Stallman  
(New York, USA, 1953 - )

Free Software  
is a matter of the  
users' freedom to  
run,  
copy,  
distribute,  
study,  
change and improve  
the software.

Dr. Dobb's Journal of Software Tools  
Volume 10, Number 3, March, 1985

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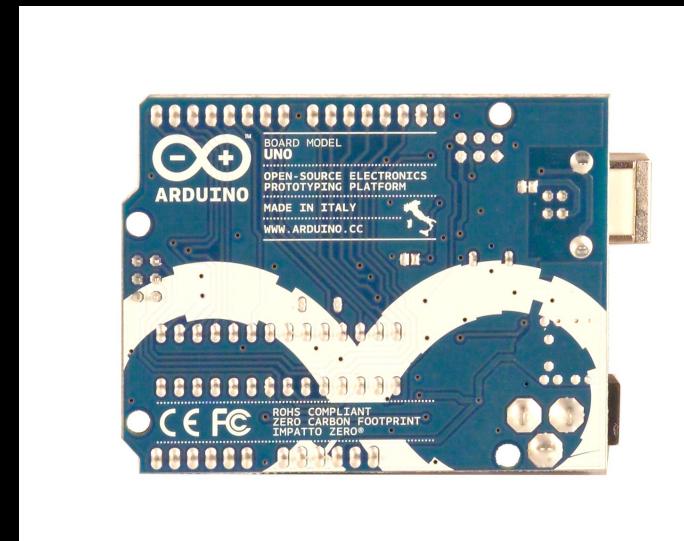
# Progetto "Arduino"



2005: Open Source Hardware



Massimo Banzi



*"Arduino nasce nel 2005 ... quando insegnavo all'Interaction Design Institute di Ivrea ...  
... io proposi il nome "molto Eporediese" di Arduino, come il bar dove andavamo a bere l'aperitivo."  
"Betabook, il manuale di Arduino", Massimo Banzi, fondatore del progetto Arduino*