

# mBot

Quote

" Only half of programming  
is coding.  
The other 90% is debugging "

Anonymous



**Mamma:** «Luca, vai al mercato e compra 1 bottiglia di latte. Se hanno delle uova, comprane 6».

Luca va al mercato e torna con 6 bottiglie di latte.

**Mamma:** «Ma perché hai comprato 6 bottiglie di latte?!»

**Luca:** «Perché avevano le uova!»



Un programmatore esce di casa per recarsi a lavoro.

La moglie gli dice:  
«While you're out, buy some milk»

Il marito non fece mai più ritorno a casa...



# Mark II

## Il computer a relay

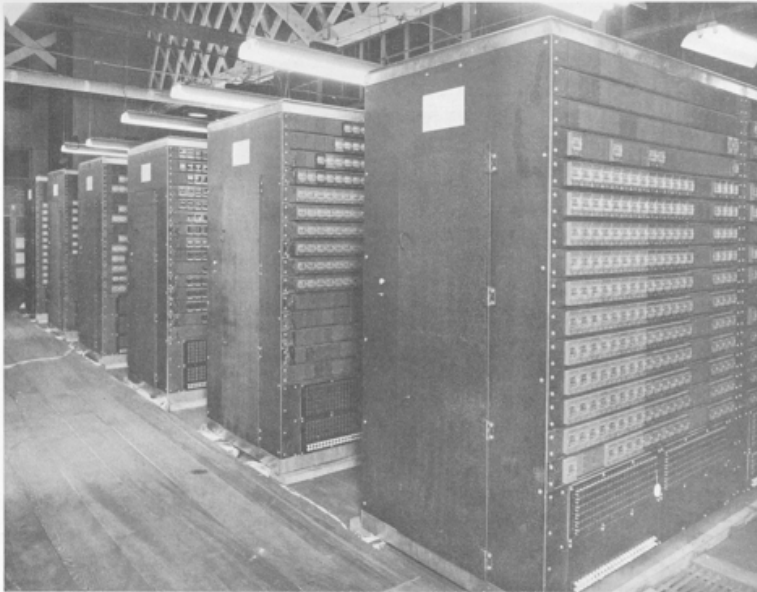


Figure 5 Mark II: Relay Cabinets

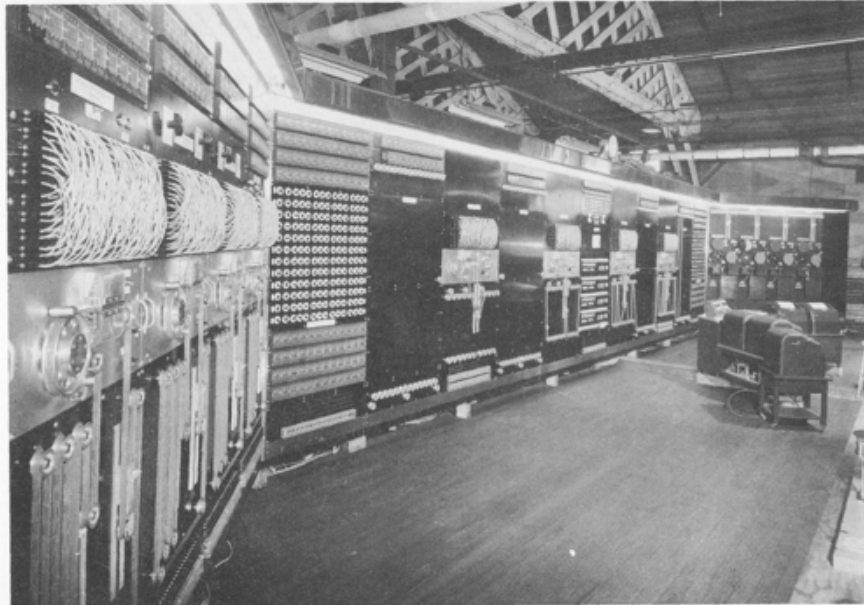


Plate I Main Control Board and Wings



# Grace Hopper

## E la falena...




9/9

0800 Ancon started  
 1000 " stopped - ancon ✓

1300 (032) MP - MC 2.130476415 (032) 4.615925059 (-2)  
 (032) PRO 2 2.130476415  
 convd 2.130476415

Relays 6-2 in 032 failed special speed test  
 in relay 11,000 test.

1100 Relays changed  
 Started Cosine Tape (Sine check)  
 1525 Started Multi-Adder Test.

1545  Relay #70 Panel F  
 (moth) in relay.

1630 First actual case of bug being found.  
 1700 Ancon started.  
 1700 closed down.

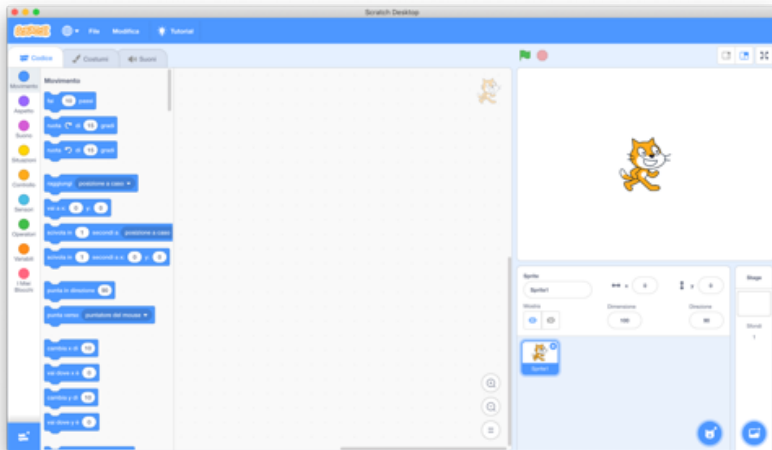
Relay 2145  
 Relay 3376



HO IMPARATO  
COSI' TANTO  
DAI MIEI ERRORI  
CHE STO  
PENSANDO DI  
CONTINUARE  
A FARNE...

# Scratch e mBlock

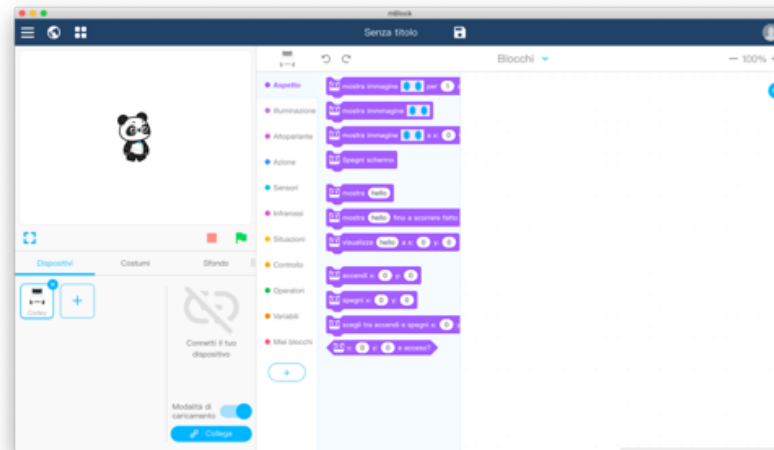
## SCRATCH



Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab.

<https://scratch.mit.edu/>

## mBlock



mBlock build by Makeblock is the World's very first Scratch 2.0 branch that can upload a program into Arduino based boards.

<http://www.mblock.cc/>



# mBot

ONE ROBOT PER KID

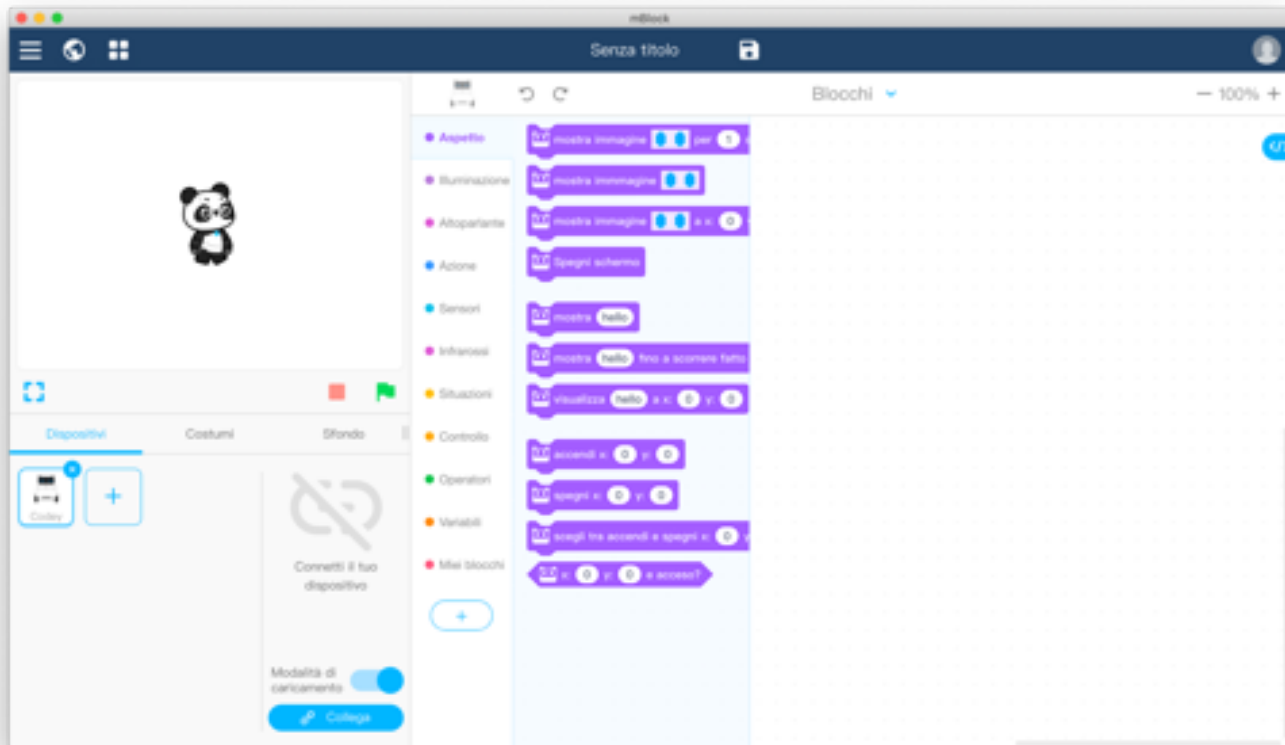
Makeblock



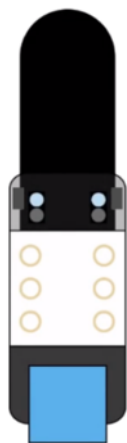
<http://store.makeblock.com/>

# mBlock

## Interfaccia di programmazione

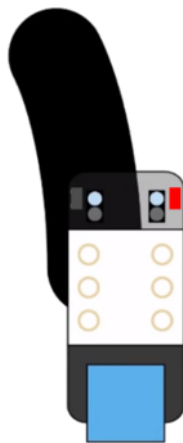


# Line Follower



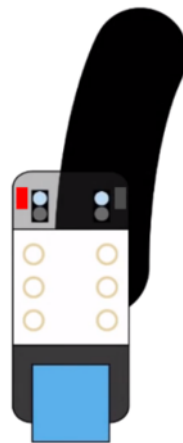
0

00



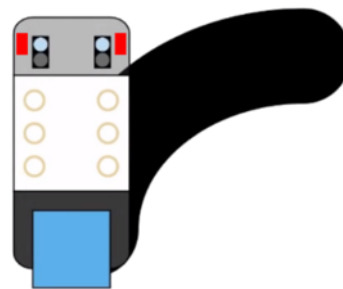
1

01



2

10

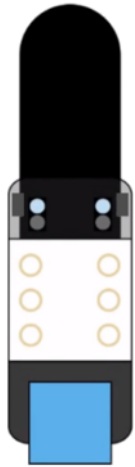


3

11

# mBot

Line follower



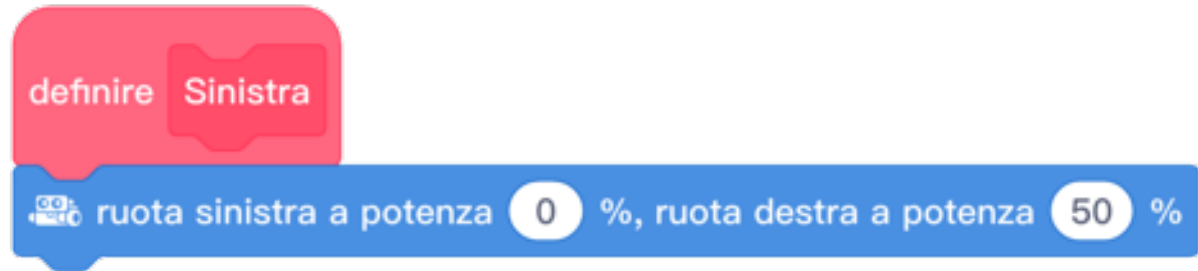
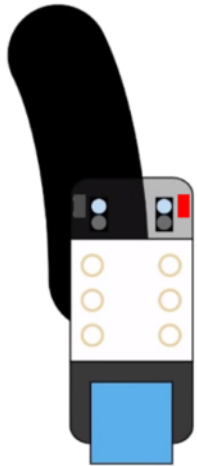
definire **Avanti**

 ruota sinistra a potenza **50** %, ruota destra a potenza **50** %



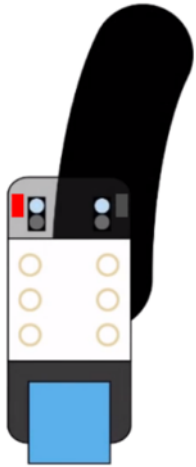
# mBot

Line follower



# mBot

Line follower

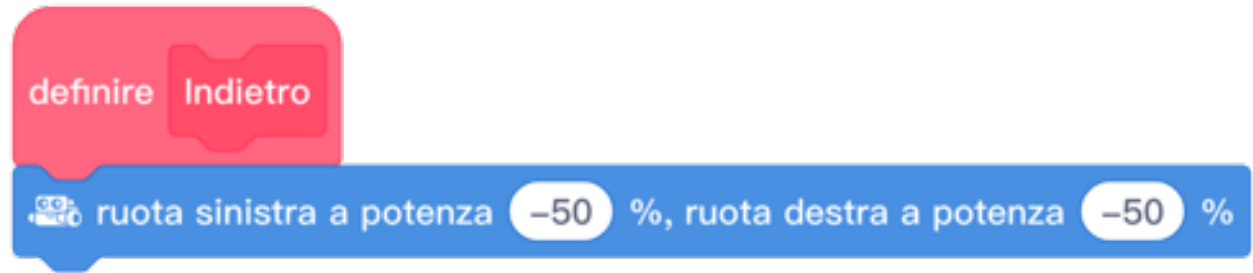
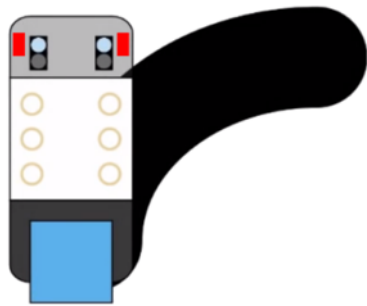


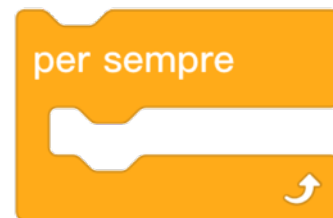
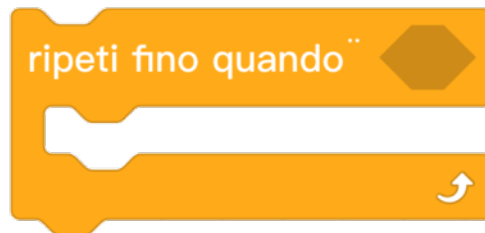
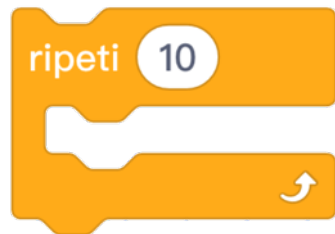
definire Destra

 ruota sinistra a potenza 50 %, ruota destra a potenza 0 %

# mBot

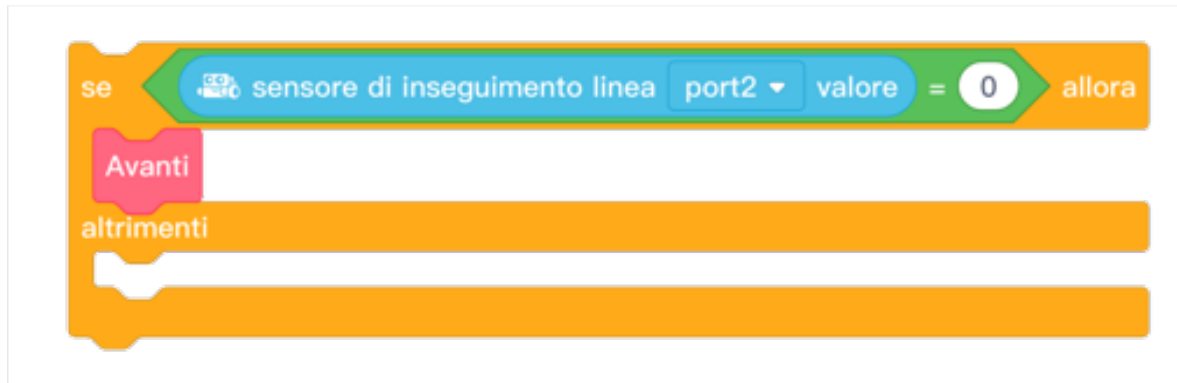
Line follower





# mBot

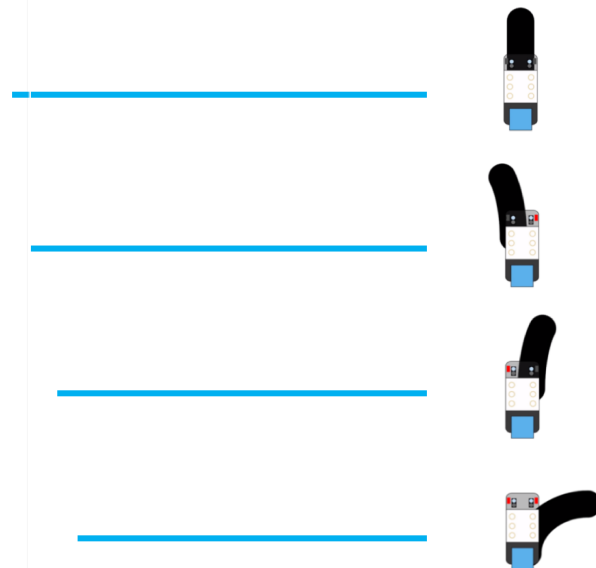
## Line follower





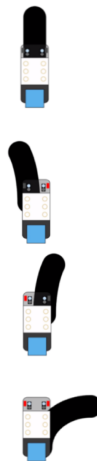
# mBot

## Line follower



# mBot

## Line follower



# Roomba

# mBot Roomba

```
Quando si avvia mBot(mcore)  
per sempre  
  Avanti  
  se < sensore ultrasuoni port3 > distanza < 10 > allora  
    Gestisci Ostacolo
```



```
definire Gestisci Ostacolo  
  Stop  
  attendi 1 secondi  
  Indietro  
  attendi 1 secondi  
  se < numero a caso tra 1 e 100 > > 50 > allora  
    Ruota a SX  
  altrimenti  
    Ruota a DX  
  attendi 0.3 secondi
```



```
definire Avanti  
  < sensore ultrasuoni port3 > distanza < 10 > ruota sinistra a potenza 50 %, ruota destra a potenza 50 %
```

```
definire Indietro  
  < sensore ultrasuoni port3 > distanza < 10 > ruota sinistra a potenza -50 %, ruota destra a potenza -50 %
```

```
definire Ruota a SX  
  < sensore ultrasuoni port3 > distanza < 10 > ruota sinistra a potenza -50 %, ruota destra a potenza 50 %
```

```
definire Ruota a DX  
  < sensore ultrasuoni port3 > distanza < 10 > ruota sinistra a potenza 50 %, ruota destra a potenza -50 %
```

```
definire Stop  
  < sensore ultrasuoni port3 > distanza < 10 > ruota sinistra a potenza 0 %, ruota destra a potenza 0 %
```

# Curiosità



# mBot

## Roomba algorithm and visualization



<https://blog.niallconnaughton.com/2016/01/25/roomba-algorithms-and-visualization/>

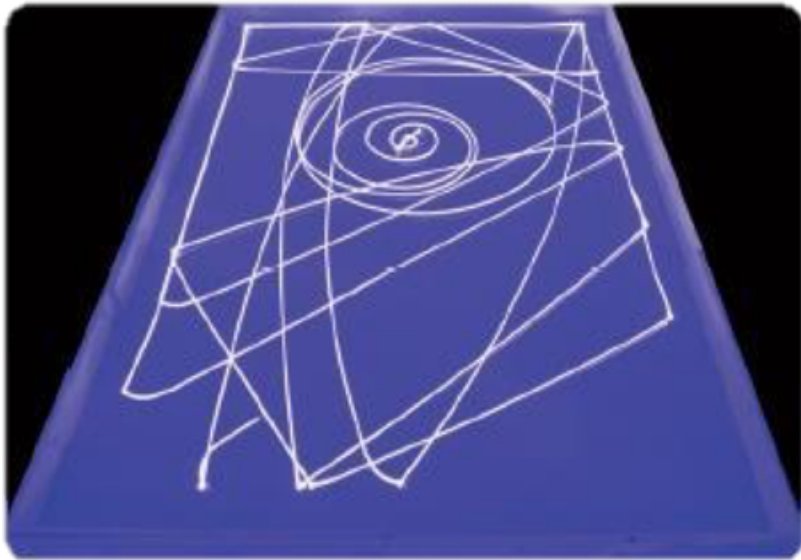
# mBot

## Roomba algorithm and visualization

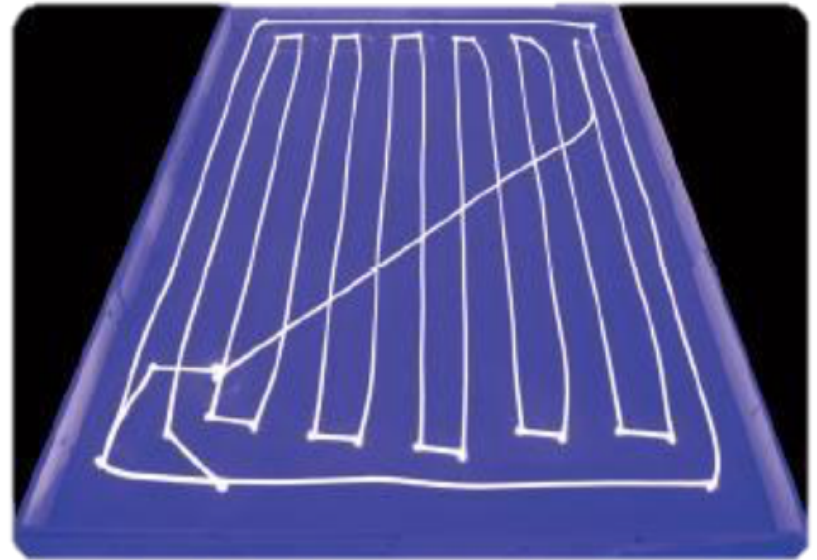


[https://commons.wikimedia.org/wiki/File:Roomba\\_time-lapse.jpg](https://commons.wikimedia.org/wiki/File:Roomba_time-lapse.jpg)

Navigazione tradizionale (casuale)



Navigazione "astronomica"



<https://www.generationrobots.com/en/400927-automatic-robot-vacuum-neato-xv-15.html>