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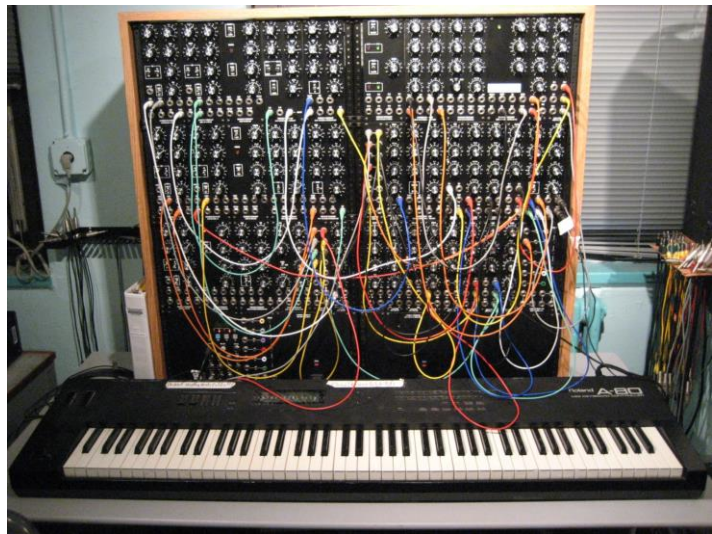
# Coding (per inventori di mondi)

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# Computers are everywhere!



# Computers are programmable!



Electronic circuits can do many  
(every?) things, if properly configured

But configuring them is **HARD** for  
humans!

# Programming languages

```
type ComplexPoint = Complex Double

mandelbrot :: Int -> ComplexPoint -> Bool
mandelbrot maxIter c = escape maxIter c 0
  where
    escape 0 _ _ = True
    escape n c z
      | magnitude z > 2 = False
      | otherwise       = escape (n-1) c (z*z + c)

iterateSequence :: ComplexPoint -> [ComplexPoint]
iterateSequence c = iterate (\z -> z*z + c) 0

mandelbrotSet :: Int -> Int -> Int -> [String]
mandelbrotSet width height iters =
  [ [ toChar $ mandelbrot iters (mkComplex x y) | x <- xs ]
  | y <- ys ]
  where
    xs = map (\x -> 3.0 * fromIntegral (x - width `div` 2) / fromIntegral width) [0..width-1]
    ys = map (\y -> 2.0 * fromIntegral (y - height `div` 2) / fromIntegral height) [0..height-1]
    mkComplex x y = x + y
    toChar True  = ' '
    toChar False = '#'
```

Electronic circuits can do many  
(every?) things, if properly configured

But configuring them is HARD for  
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So ad hoc **languages** were invented, to  
meet in the middle!

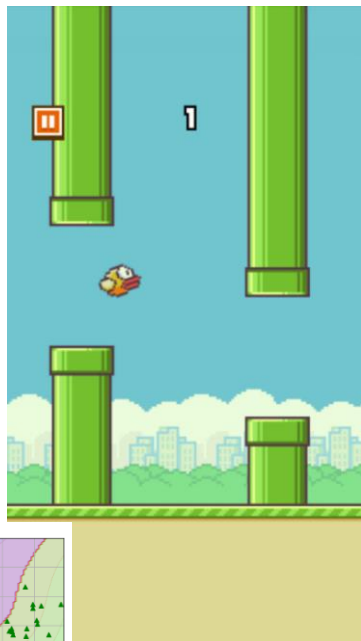
# Coding



“Coding” means speaking those special languages

Not only to talk to computers: it can also be a tool for thinking!

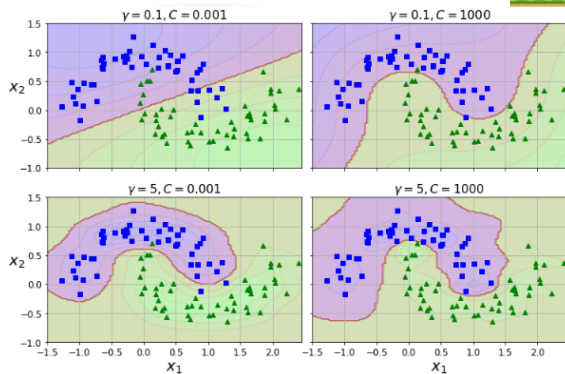
# Python



A welcoming a friendly language...

...but also very **powerful!**

We will learn it to **create new worlds!**



# Objections?

"Just tell ChatGPT what you want in plain English, and it'll code for you!"

**But will it, really?**

- Maybe coding isn't just a way to *program*, but a thinking tool
- Want an informed opinion in the debate?

**Then learn to code yourself!**