Lesson 6 – All sorts of computers!

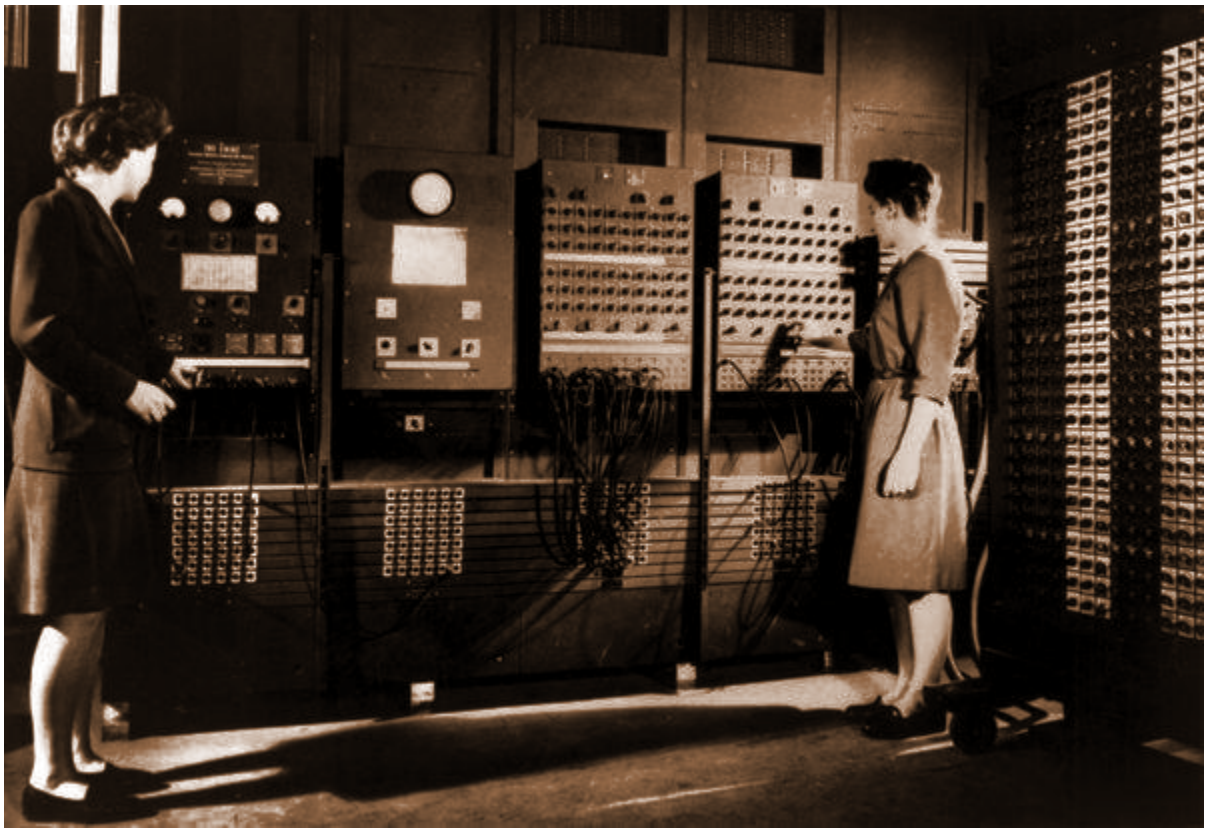
Test your knowledge!

- How does a computer use math to make a decision?

All kinds of computers….

So far, what kind of computers have we used? Some of us call them laptops, even tablets…. They are all kinds of PCs – Personal Computers.

What's the "personal" all about? Well, a long time ago, a computer looked like THIS!



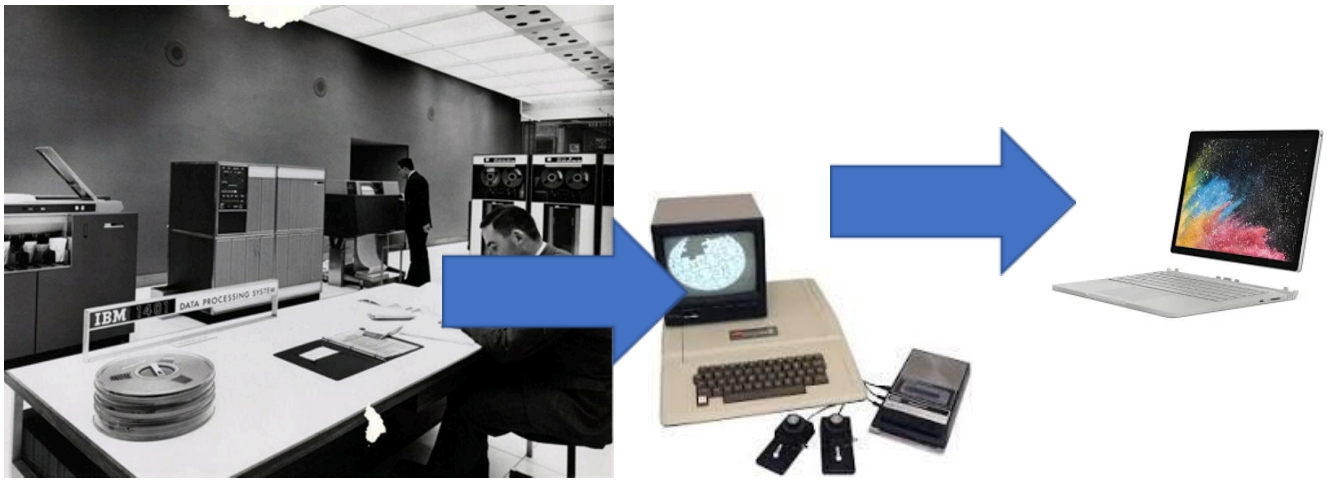
1943: ENIAC https://www.computerhistory.org/revolution/birth-of-the-computer/4/78

This was the ENIAC – the first electronic computer! It was the size of a big room, and could only do simple math! Isn't that crazy? ENIAC was made out of big switches called Vacuum tubes! They looked like big light bulbs – and were just as big and hot as a light bulb!

In the 1980's, computers started getting really SMALL – we started using switches that were much, much smaller, called TRANSISTORS. These were made out of silicon (yep, sand!). The magical part is we figured out how to put millions of them in a really small space… and invented the microprocessor!

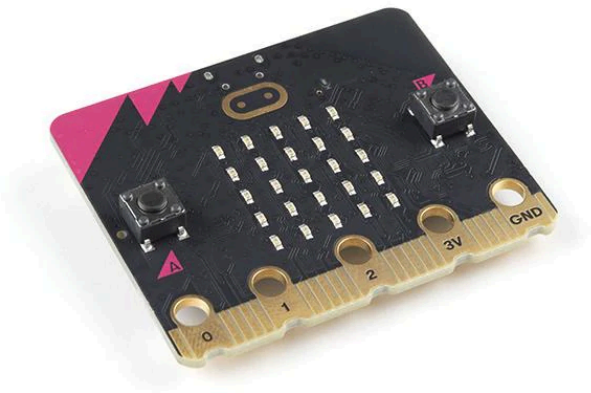
 Intel 4004: the first processor

After that, we were off to the races! Computers went from being big machines that only a few could own, to something we could all have!



Now we can put computers ANYWHERE! Can you name some computers in this room?

We're going to write a PYTHON program to control a cool little computer called a BBC Micro:bit!



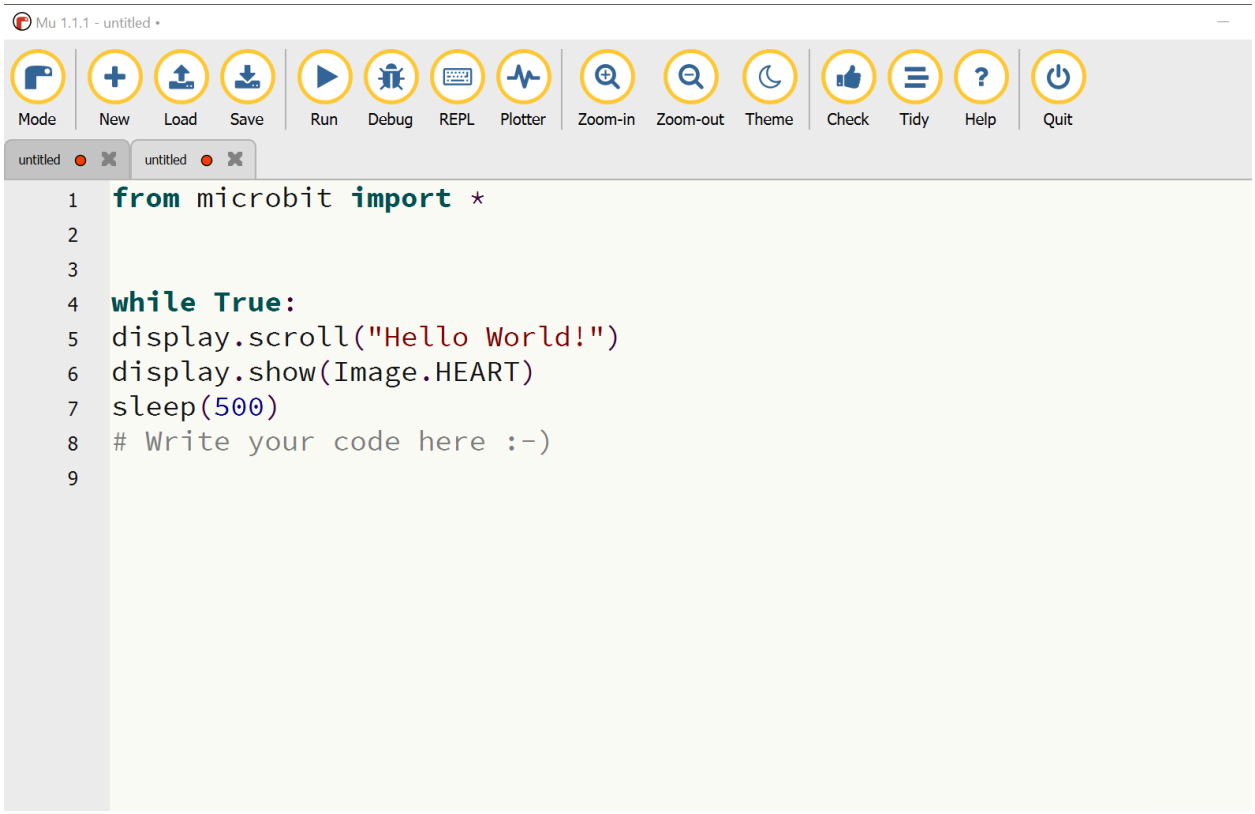
This little computer is thousands of times more powerful than those early computers… and fits in the palm of our hand! It also has some super cool INPUTS and OUTPUTS. So, instead of just using input and print statements, we can start doing things like making lights blink and measuring stuff. Sound cool?

Today we're going to learn how to make our micro:bit:

1. Make lights blink
2. Measure sound
3. React to sound

***You can access a virtual python microbit environment at https://python.microbit.org/v/3**

Assignment 1: Hello, world!



Question: What does this program do?

Now customize it! Change the print statement and the image to make your own unique program.

- `Image.HEART`
- `Image.HEART_SMALL`
- `Image.HAPPY`
- `Image.SMILE`
- `Image.SAD`
- `Image.CONFUSED`
- `Image.ANGRY`
- `Image.ASLEEP`
- `Image.SURPRISED`
- `Image.SILLY`
- `Image.FABULOUS`
- `Image.MEH`
- `Image.YES`
- `Image.NO`
- `Image.CLOCK12`, `Image.CLOCK11`, `Image.CLOCK10`, `Image.CLOCK9`, `Image.CLOCK8`, `Image.CLOCK7`, `Image.CLOCK6`, `Image.CLOCK5`, `Image.CLOCK4`, `Image.CLOCK3`, `Image.CLOCK2`, `Image.CLOCK1`
- `Image.ARROW_N`, `Image.ARROW_NE`, `Image.ARROW_E`, `Image.ARROW_SE`, `Image.ARROW_S`, `Image.ARROW_SW`, `Image.ARROW_W`, `Image.ARROW_NW`
- `Image.TRIANGLE`
- `Image.TRIANGLE_LEFT`
- `Image.CHESSBOARD`
- `Image.DIAMOND`
- `Image.DIAMOND_SMALL`
- `Image.SQUARE`
- `Image.SQUARE_SMALL`
- `Image.RABBIT`
- `Image.COW`
- `Image.MUSIC_CROTCHET`
- `Image.MUSIC_QUAVER`
- `Image.MUSIC_QUAVERS`
- `Image.PITCHFORK`
- `Image.XMAS`
- `Image.PACMAN`
- `Image.TARGET`
- `Image.TSHIRT`
- `Image.ROLLERSKATE`
- `Image.DUCK`
- `Image.HOUSE`
- `Image.TORTOISE`
- `Image.BUTTERFLY`
- `Image.STICKFIGURE`
- `Image.GHOST`
- `Image.SWORD`
- `Image.GIRAFFE`
- `Image.SKULL`
- `Image.UMBRELLA`
- `Image.SNAKE`
- `Image.SCISSORS`

Assignment 2: Magic Microbit

This program will transform your micro:bit into a Magic 8 ball!