JUST ENOUGH C.S TO BE DANGEROUS

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A TALK ON (MOSTLY) EVERYTHING YOU NEED TO KNOW ABOUT COMPUTING

IN THE BEGINNING THERE WAS A BIT

the world in (0, 1)

operations on bits

- AND
- OR
- NOT
- NAND
- NOR

Eight bits make a byte

- KiloByte = 1024 bytes
- MegaByte = 1024 KB
- GigaByte = 1024 MB
- TeraByte = 1024 GB

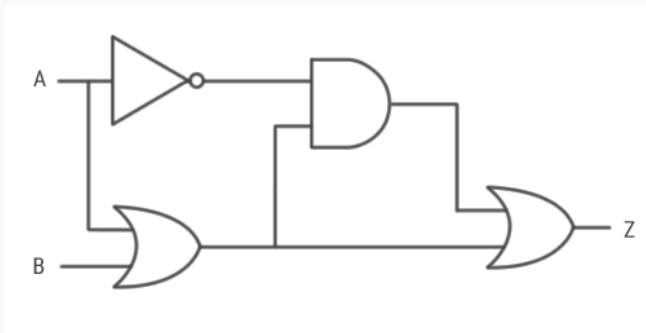You take some bits and some operations and boom you got a Logic Circuit.

Figure 1: Logic Circuit

Reprogrammable Logic Gates

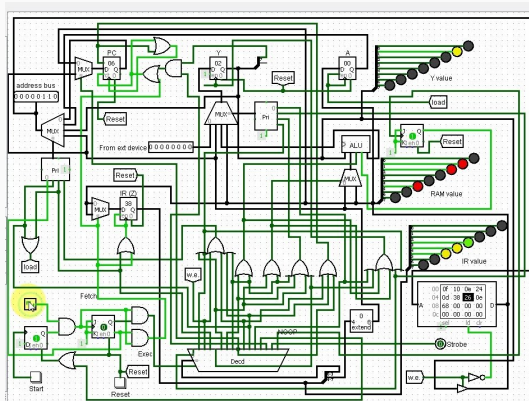Figure 2: CPU Logic Gates

CODE CODEEE

- Executed directly by the processor
- Corresponds to Logic Circuit in CPU
- Nobody Does it

Program that does something I got from the Internet

```
[  op  |  rs  |  rt  |  rd  |shamt| funct]
    0     1     2     6     0    32      decimal
 000000 00001 00010 00110 00000 100000   binary
```

- Machine Code 10110000 01100001
- Hexadecimal Code B0 61
- Easy to remember names for reading and writing

```
MOV AL, 61h      ; Load AL with 97 decimal (61 hex)
```

- Assembler is needed to convert Assembly to Machine Code

- Assembly is still hard
- So we code in C and a <u>Compiler</u> converts to Assembler

Figure 3: C to Assembler

- Low–Level language is fast, but expressive
- So we have High Level Languages
- Not Compiled but Interpreted
- Python, Ruby, Elixir

```
1  #!/usr/bin/python
2
3  print "Hello, World!";
4
```

"Hello, World!" program
in Python

```
1  #include <stdio.h>
2
3  int main()
4  {
5      printf("Hello, World! \n");
6      return 0;
7  }
8
```

"Hello, World!" program
in C

Figure 4: C to Python

WEB LET'S GET ONLINE

- Desktop Apps are bad and hard to distribute
- So we have Browsers which have their own languages

- HTML, CSS and JAVASCRIPT
- HTML Structure
- CSS Styling
- JAVASCRIPT Interactivity

- HTML5
- CSS3
- ES6, ES7 JS

Don't Repeat Yourself

- The Big Names
- JQUERY
- ANGULAR
- REACT
- VUE

MOBILE

- JAVA aane sir evante main
- XML -> Like HTML and CSS
- ANDROID STUDIO - The place where you type the Code

- Uses Swift
- Needs MAC

CROSS PLATFORM

- REACT on Mobile and Web
- From Facebook

- From Google
- Uses Dart

MACHINE LEARNING

- Give a bunch of Data, the model learns itself
- No need for Explicit Programming

- The Framework for Machine Learning from Google

BLOCKCHAIN

- Distributed Ledgers

IOT

- Small Small Computers everywhere

LEARNING

- How to learn things
- Use Youtube
- Use Google

GOOGLE FRIEND

- Check best tutorials to learn Framework

YOUTUBE

- Follow Tutorials that build projects

QUANTUM COMPUTING

- QBITS instead of bits
- QBITS are awesome

ANY QUESTIONS ?

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THANK YOU ;)