

Computer Programming

- The basics

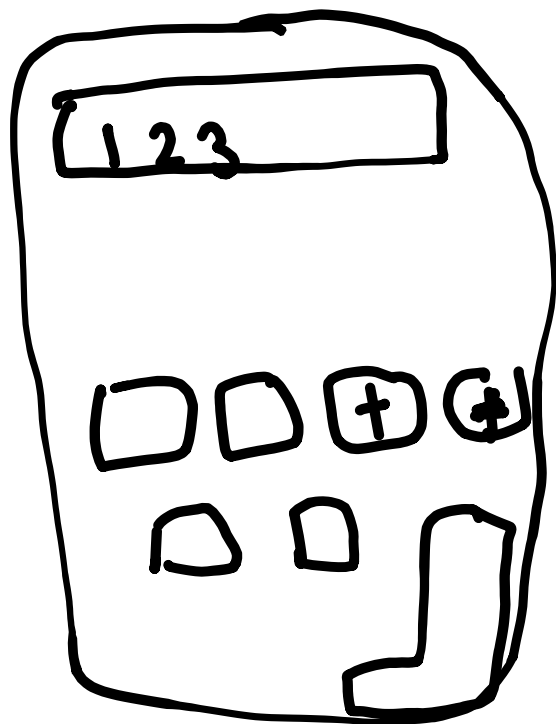
Why?

- Fun!
- Never late!
- Apps! → Fun!

FUN!

Future
Program
or
Be Programmed

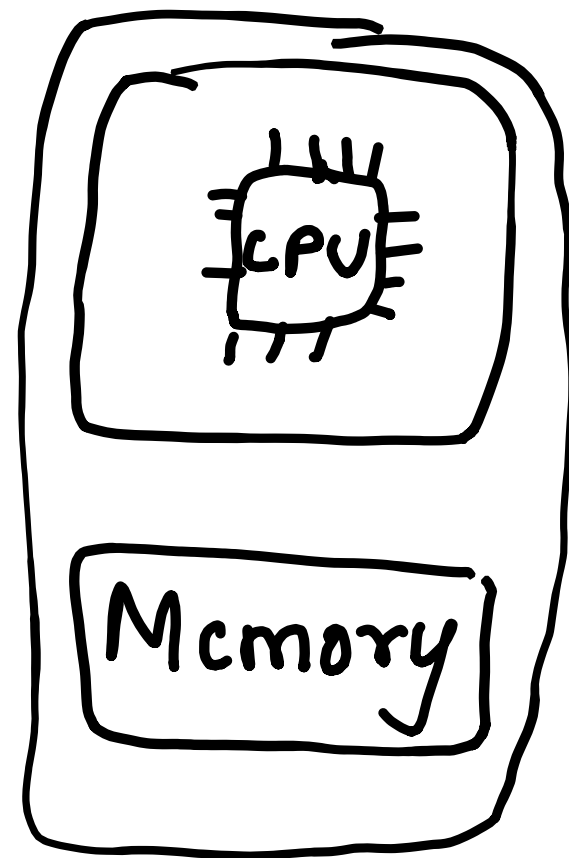
What is a Program?

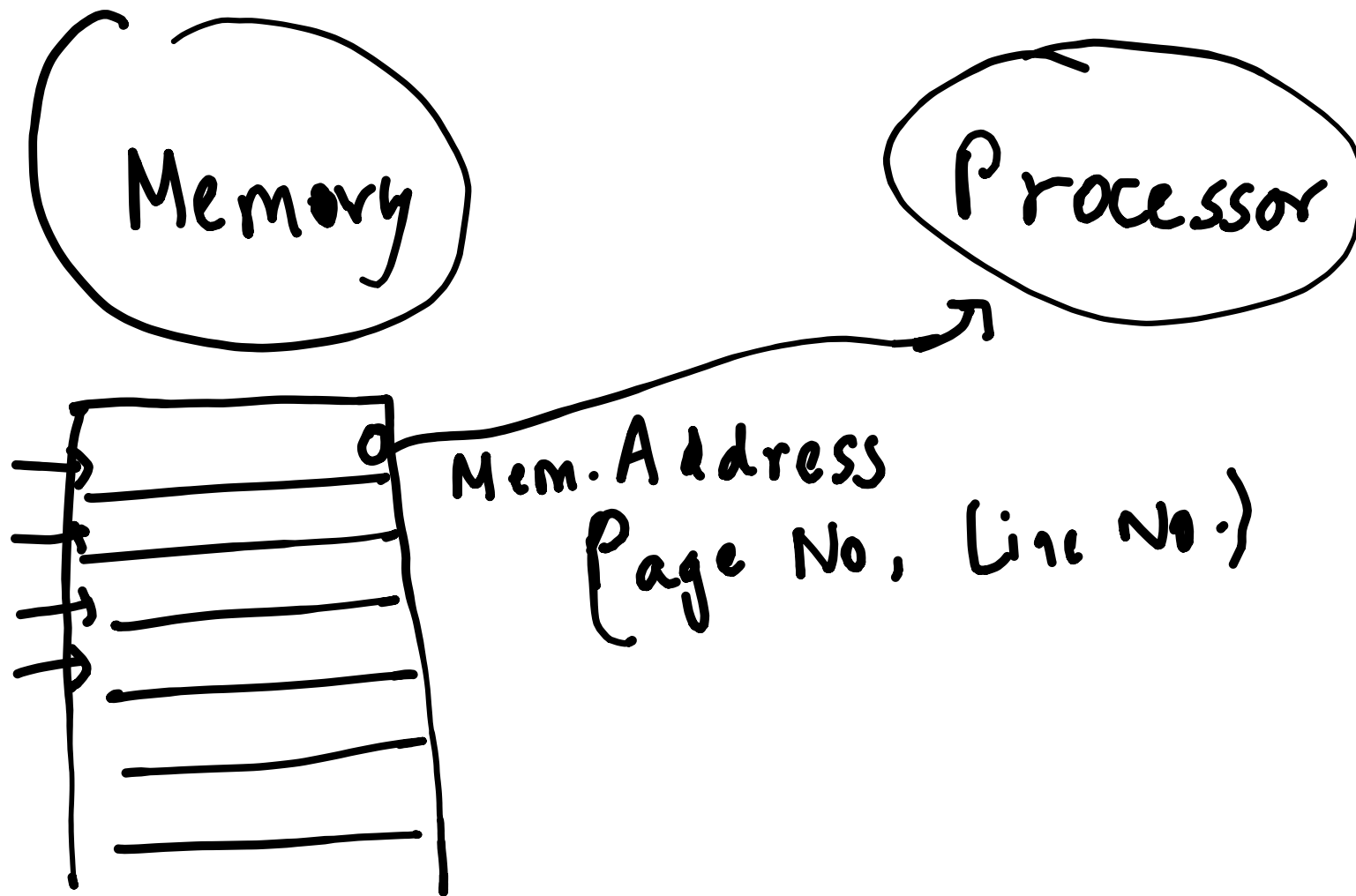


→ Why not?

* Server X

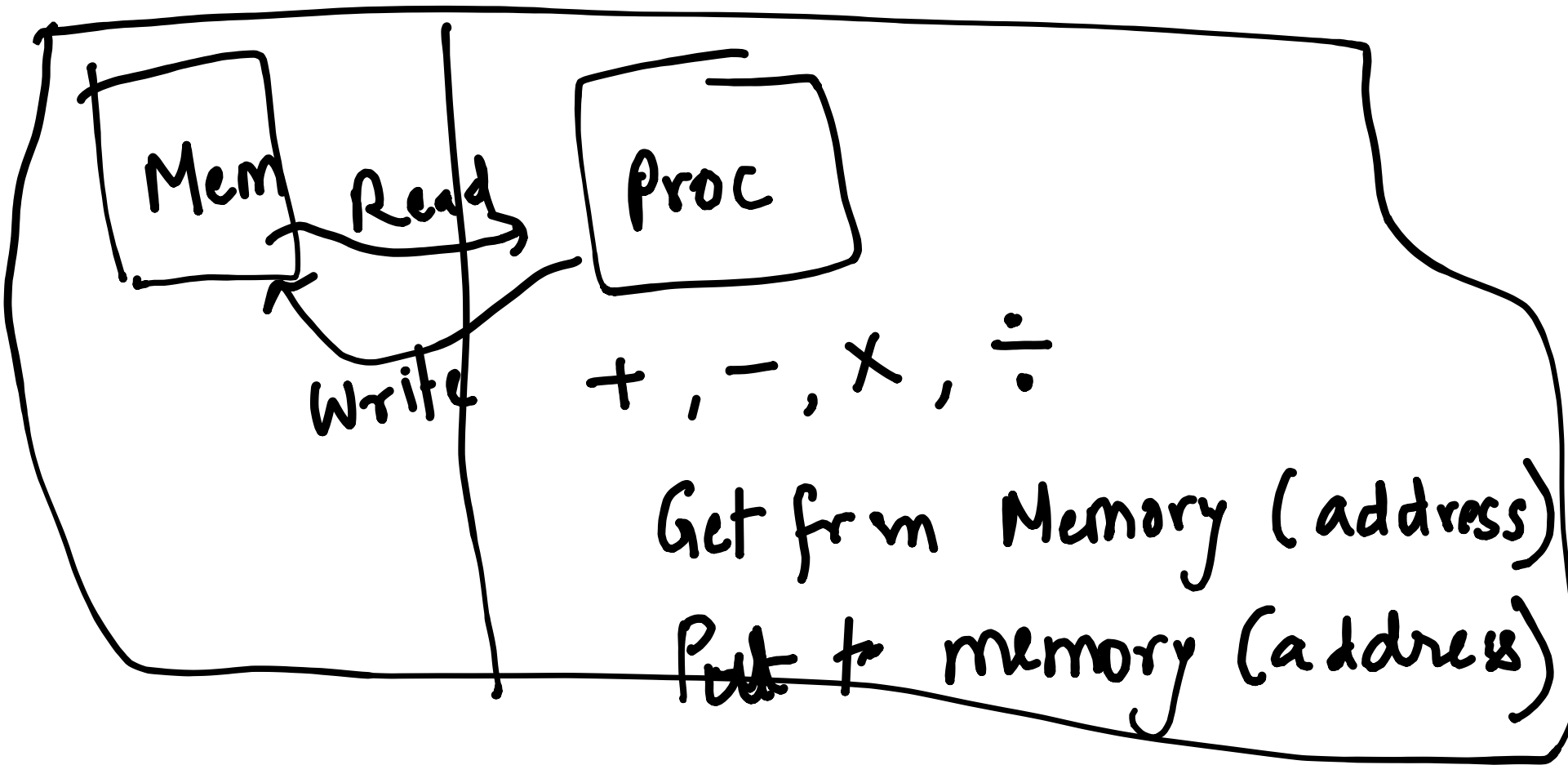
* Wire
Arduino] X





Question?

Simple Computer



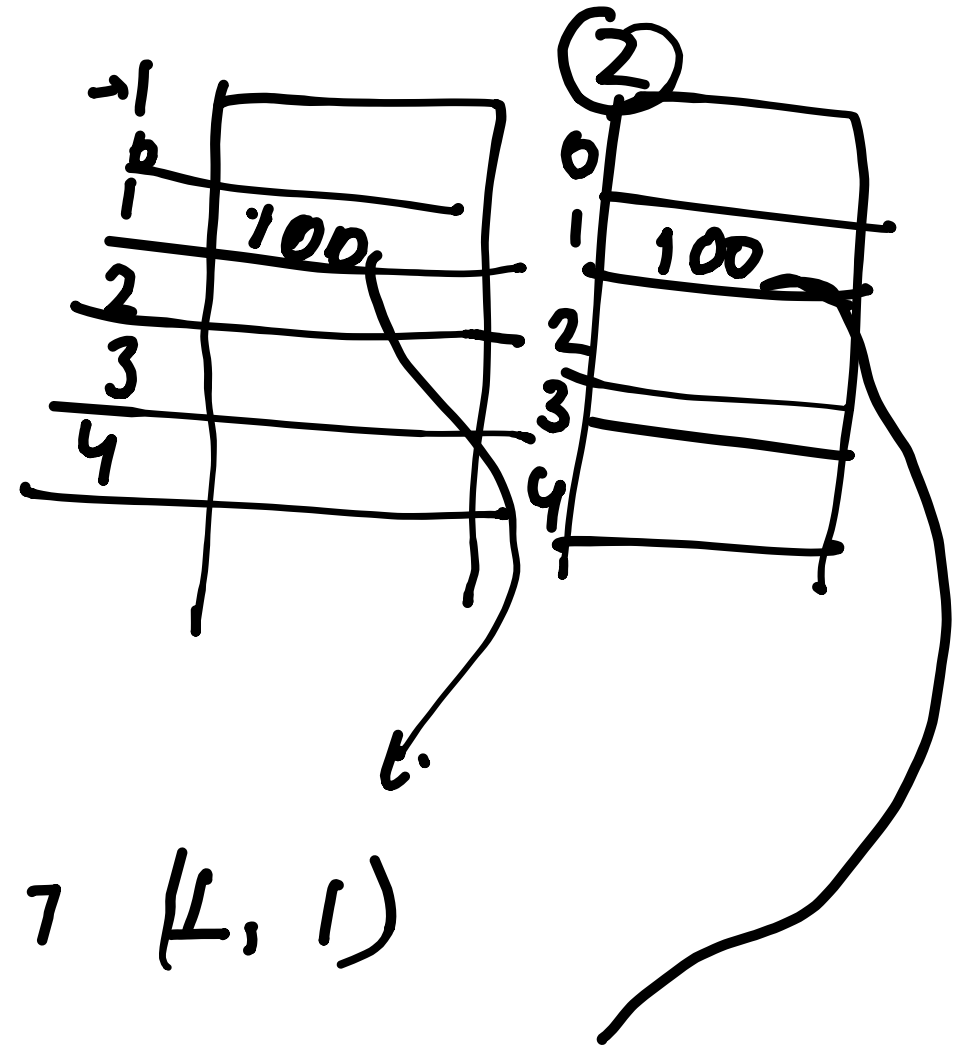
! Q Basic?

Python

INSTRUCTIONS

GET <address>

PUT <address> <value>

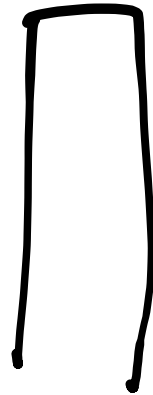
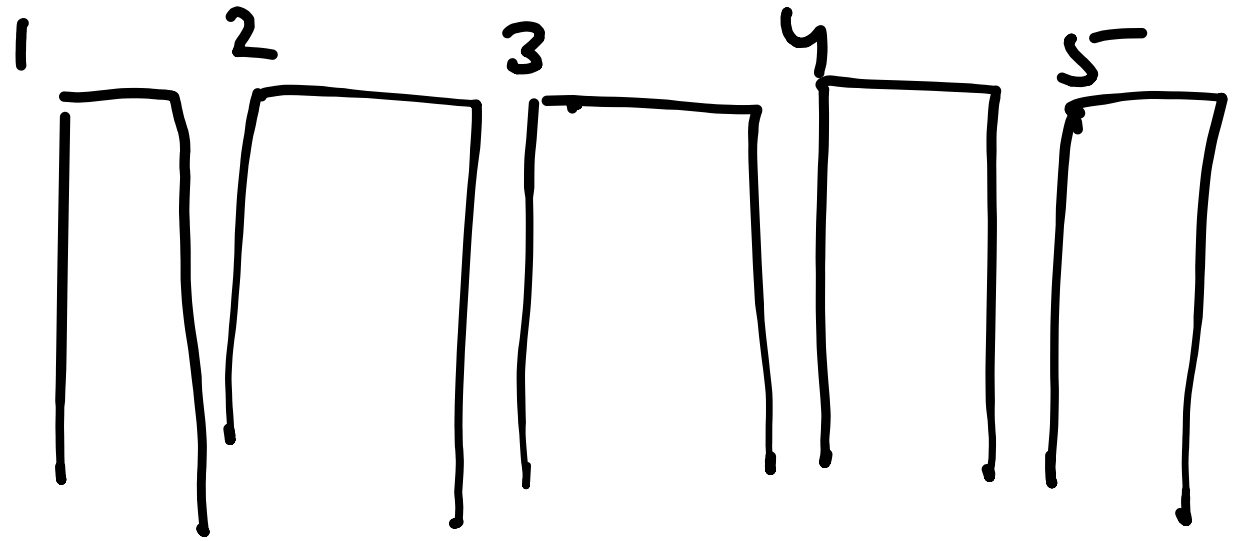


GET (1, 1)

PUT (2, 1), 100
Page Line

GET (10, 5)

~
page ~
line



PUT (10, 3), 50

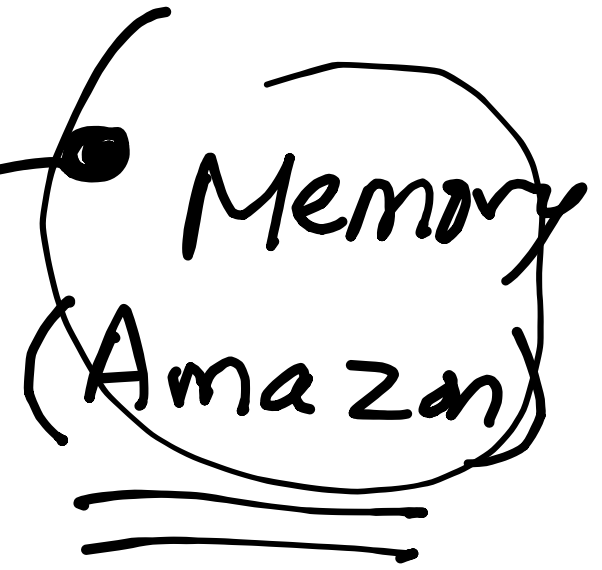
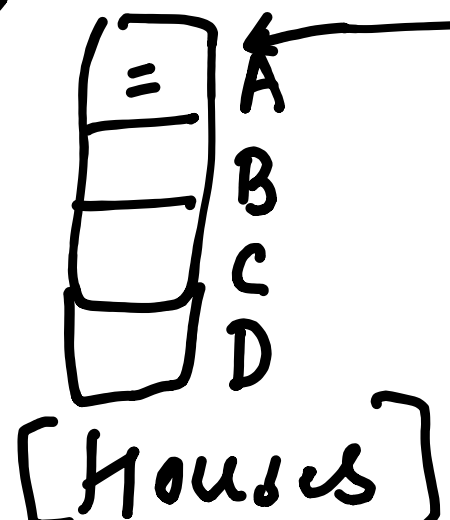
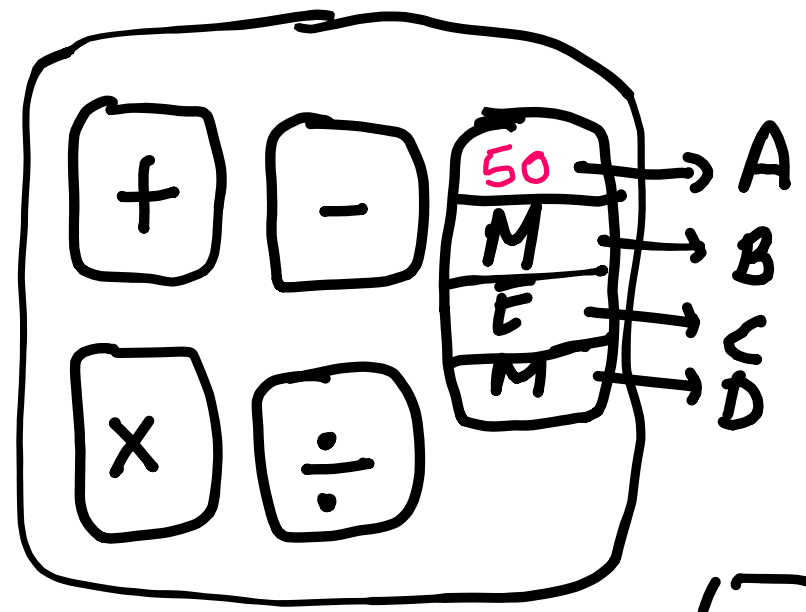


GET (10, 3)

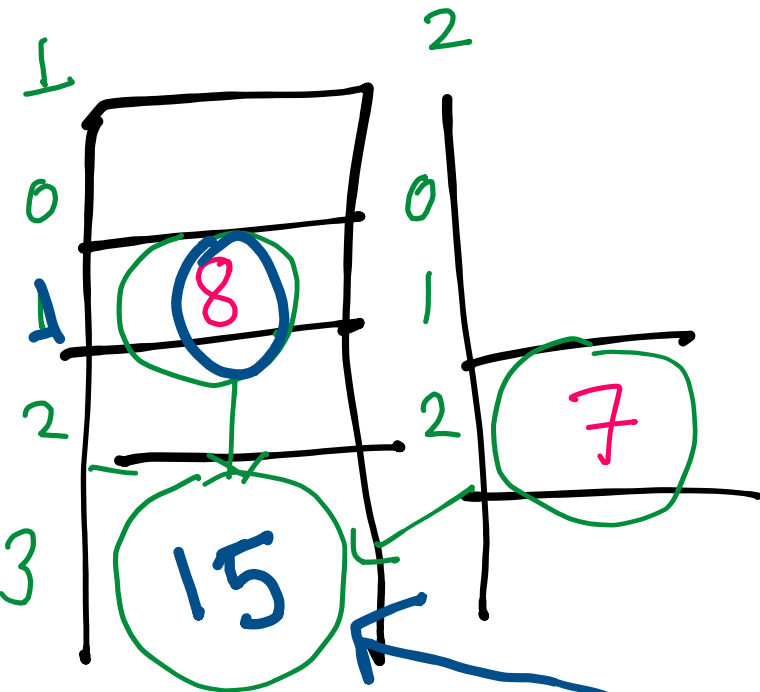
PROCESSOR

Memory \rightarrow PUT (10, 3), 50

$A \leftarrow \underbrace{\text{GET (10, 3)}}_{50}$



$+$, $-$, \times , \div GET, PUT



Program

$A = \text{GET}(1, 1)$

$B = \text{GET}(2, 2)$

$C = A + B$

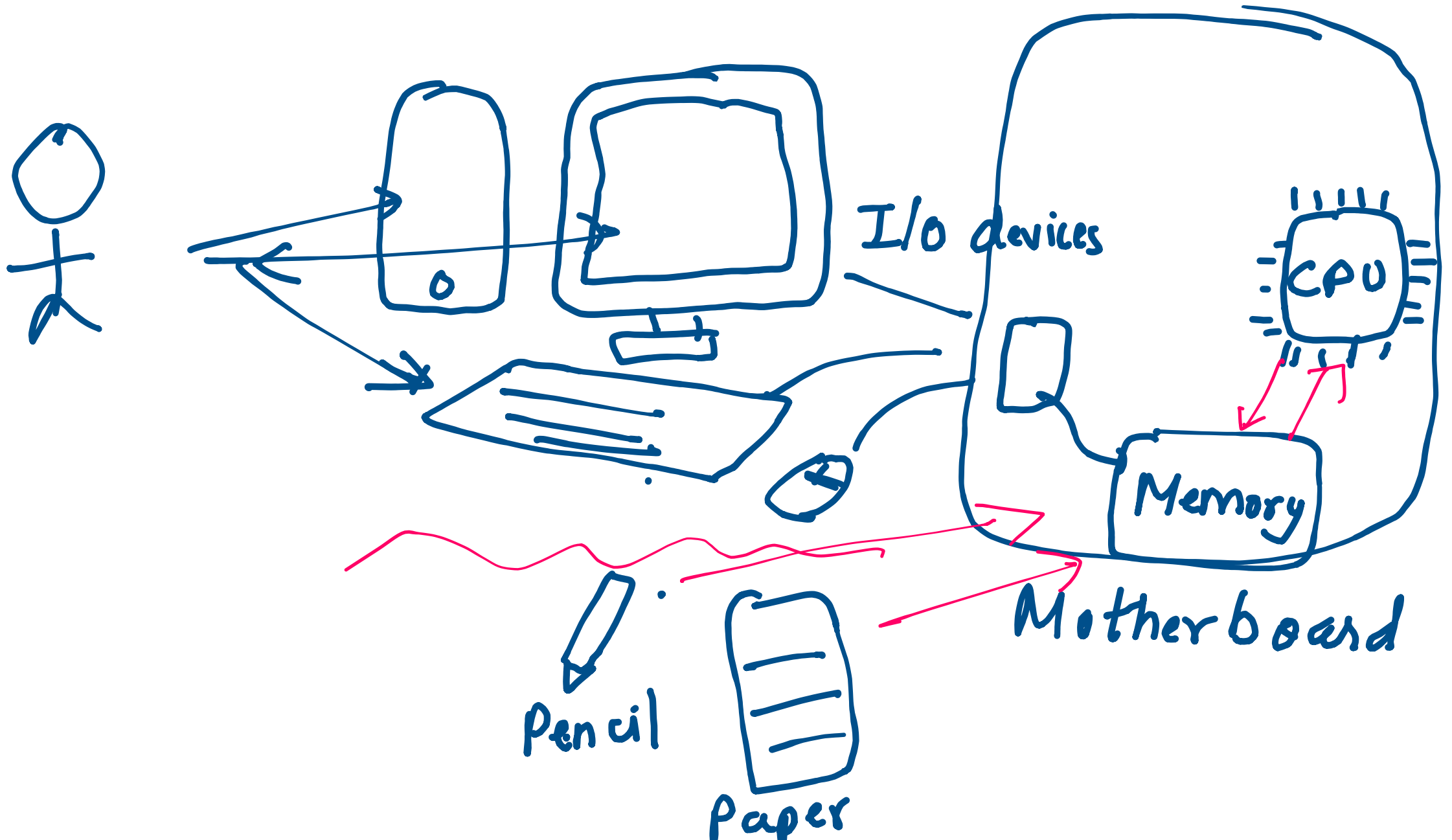
$\text{PUT}(1, 3), C$

Pg Line

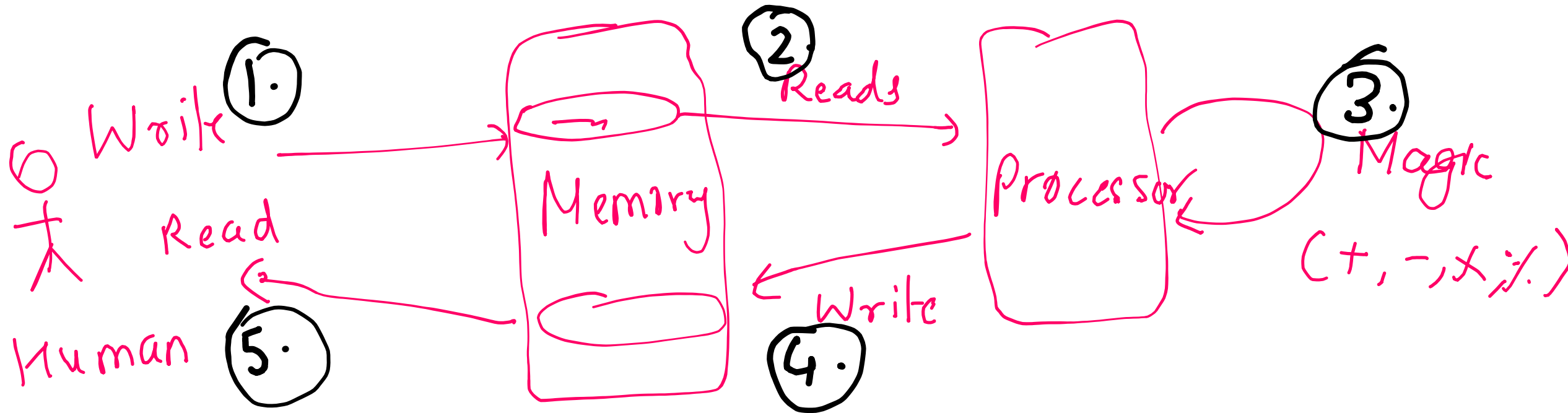
A	8
B	7
C	15
D	

$\rightarrow (1, 1)$

$\rightarrow (2, 2)$



All Programs



— GET (1,1)
→ PUT (1,3), C

convert

COMPUTER
LANGUAGE

1001010

switch

Light

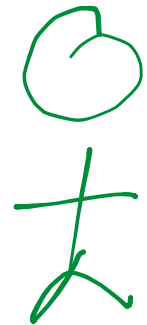


ON → 1
OFF → 0 } Binary

→ GATES
→ SIGNAL

TRANSLATORS

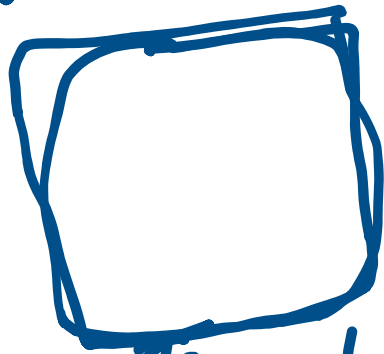
Humans



English
.....

High-level

Lang

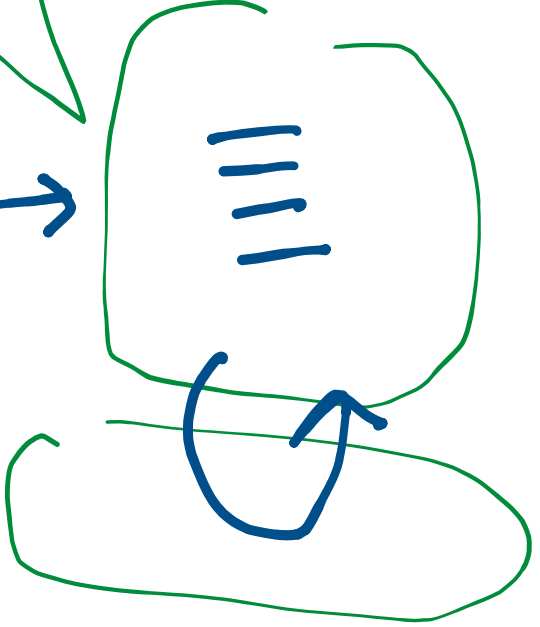


Translator

Program

Binary

Binary!



~~Ex~~ Shinzo Abe

Japanese



TRAN



Modi

Translators

PYTHON

High
level
(Human)

→ **INT**

→ Comp
→ Lang.
→ (Binary)

INTERPRETER

Line by line
translation

Books

Arabic, German



COMPILER

→ English