Variables and Values
Day 2 – PH 365

30 Sep 2024

Announcements

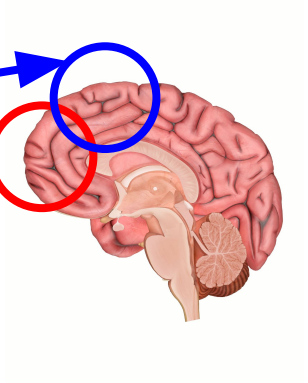
Software setup:

- Can use other softwares if Anaconda doesn’t work on your computer
- For example: VS Code or Google Colab

The Computer's "Cognitive" System

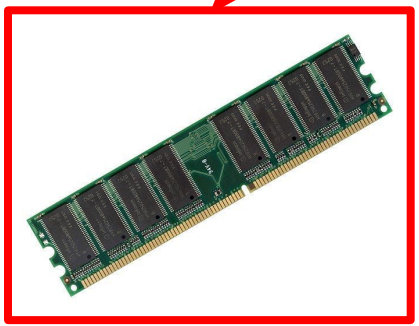
Humans:

- **Executing function** and **Working memory**

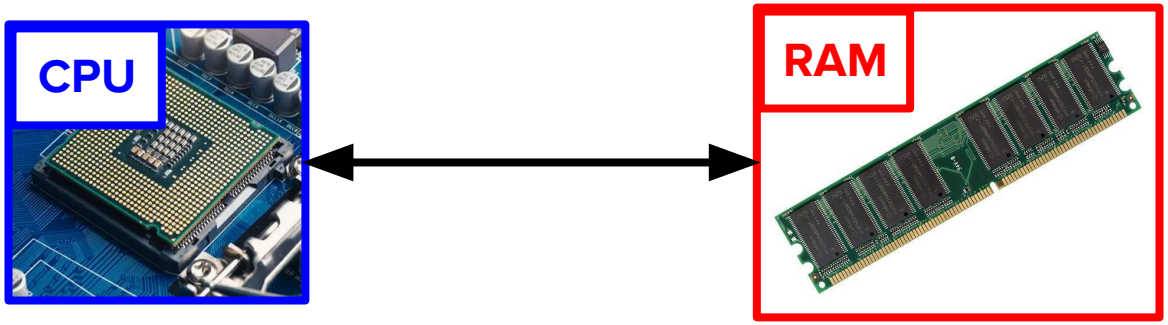


Computers:

- **Central Processing Unit (CPU)** and **Random Access Memory (RAM)**



The Computer's "Cognitive" System



Instructions (code)
Variable names
Processing power

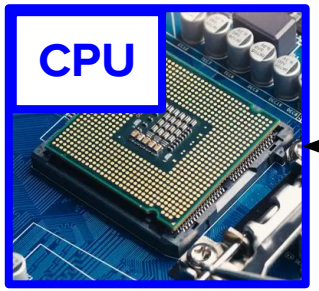
Variable values

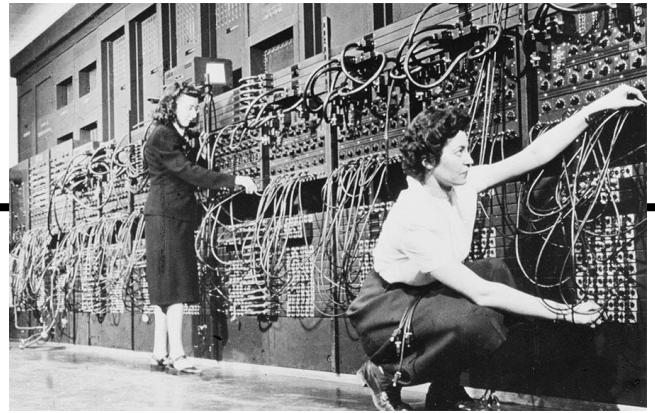
ENIAC – Electronic Numerical Integrator and Computer

The first programmable computer, built in 1945

ENIAC RAM had 80 bytes of memory, enough to store **20** numerical values

Typical RAM today: 16 GB (16 billion bytes)





Coding Syntax for Variables and Values

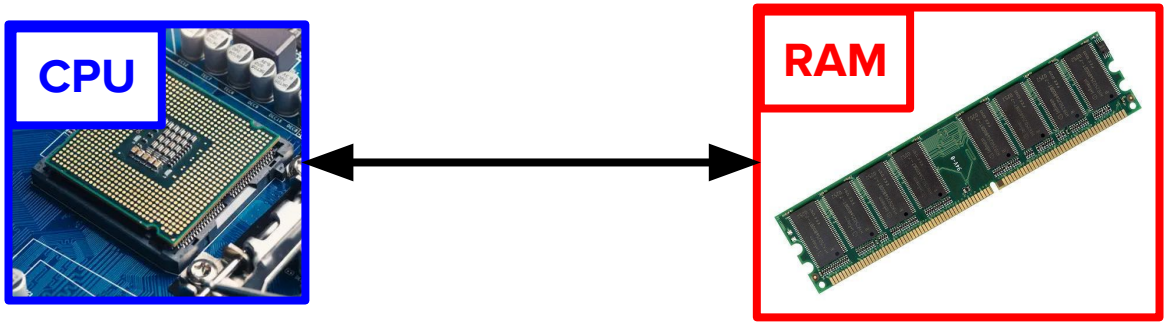
Computer will always interpret Python code like this:

Left side of equals sign: **variable**

Right side of equals sign: **value**

```
1 disp = 12          # meters
2 time = 7.2         # seconds
3
4 speed = disp / time
5 print(speed, "m/s")
```

Example: CPU and RAM for speed calculation



Instructions:

```
1 disp = 12         # meters
2 time = 7.2        # seconds
3
4 speed = disp / time
5 print(speed, "m/s")
```

Variable values:

- 12, 7.2, 1.6666

Variable names:

- disp, time, speed

Processing power:

- division arithmetic, running print function