

# Intro to Python (Class 5)

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## 1 Classes

## Section 1

### Classes

# Classes

- Encapsulation
- Making Classes
- Object Oriented Programing
- scope rules for python
- `self`
- Methods
- Static Methods
- Inheritance
- Everything is an object
- class vs instance variables
- private vs public
- `dataclass`
- magic / dunder functions
- function decorators

# A Reminder About Computers

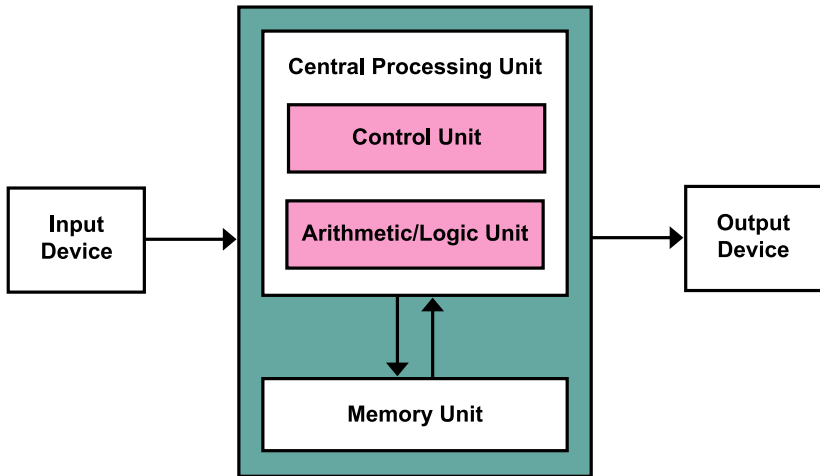
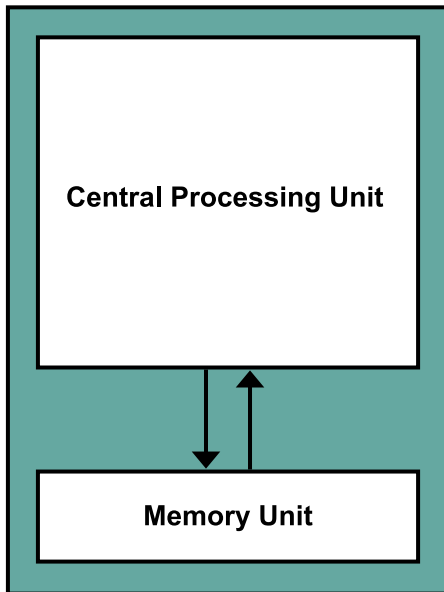


Figure 1: Schematic of a Computer (Kapooht, CC BY-SA 3.0)

# The Part that Matters



# State

The primary goal of the programmer is to write a program that evolves the *state* of the machine to some desired end.

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## Definition

***State*** is the current position of the program and the value of memory ***at a given point in time.***



# Example of State

```
def fibo(n):  
    if n == 0 or n == 1:  
        return 1  
    return fibo(n-1) + fibo(n-2)  
  
data = [fibo(i) for i in range(10)]
```

Data

0	1
1	1
2	2
3	3
4	5
5	8
6	13
7	21
8	34
9	55

Data

0	1
---	---

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