

D SML Intermediate - 1

✓ MWF → TTS. ? X → handled by ops.

✓ Transition Test?

This week

Great engineers / data scientists are 100x more
efficient than mediocre ones
not just because they solve it fast but
solve in the simplest way.

- Python constructs (Theoretical - ins & outs of Python)
- Data structures
- Comprehension
- Iteration protocol

• 15-30 (Doubts session)

• Questions tab.



About Me: Sahil Bansal

- Graduated from B.Tech CSE, IIT Jammu
- 2.5 Years of Teaching Experience

→ DSA	Recursion Hashing	• Workshops at College
→ OOP	Sorting	• C++
→ DBMS	Maths	• Python
→ Dev: Django		• Competitive Programming <u>ICPC</u> , CodeChef

- TA @ InterviewBit Academy (Now Scalex)
Apr 2019 - Oct 2019

- Software Engineer & Instructor @ Scalex
June 2020 - Present

Intermediate : 2 months

⇒ Week 1 - Python Refresher

- Basic DSA = Data Structures & Algo.
- OOP in Python
- Functional Programming in Python
- File & Exception Handling.
- Maths.

C/C++/Java. \Rightarrow statically typed languages

\Rightarrow Primitive Data Types.

\hookrightarrow

int $a = 3$

Data Type

$\left[\begin{array}{c} 3 \\ \text{c a} \end{array} \right]$ \downarrow $a = 3 \Rightarrow$ Python knows a is an "int"

Python: dynamically Typed language

$\left[\begin{array}{c} 3.7 \\ \text{b} \end{array} \right]$

$b = 3.7$

$b = \underline{\underline{5.8}}$

$\text{type}(b) \Rightarrow$ float

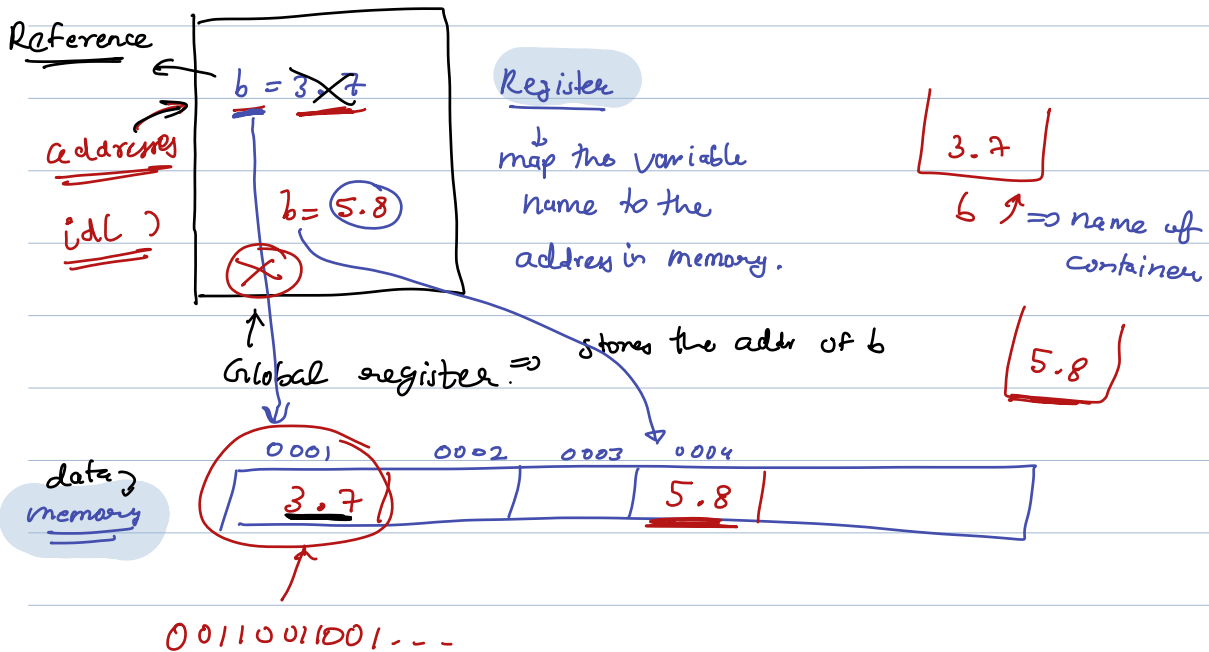
$a, b \Rightarrow$ Objects

$b = 3.7$

b is a variable

$b = 5.8$

It's value can change.



Integer, Float, str, Bool, Tuple

⇒ immutable in Python.

While updating, new

object gets created

id(-) changes

Lists, Sets, Dict. ⇒ Mutable

While updating, same object gets updated.

id(-) remains same.

Everything in Python is an object.

First Class Citizen (FCC)

int a =

⇒ a = 1213789812356789101237891098

int
float
bool
str

⇒ FCCs

special data types,

• implementations of which are in Python

⇒ interpreter

⇒ How does Python work? (high level)

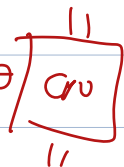
C++, Java, C



Code

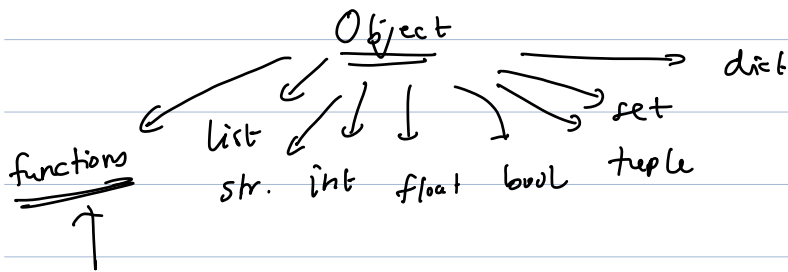
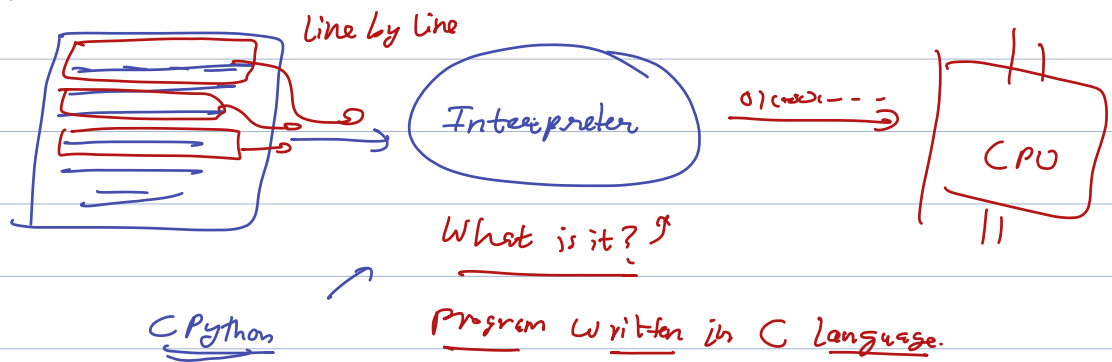


machine code

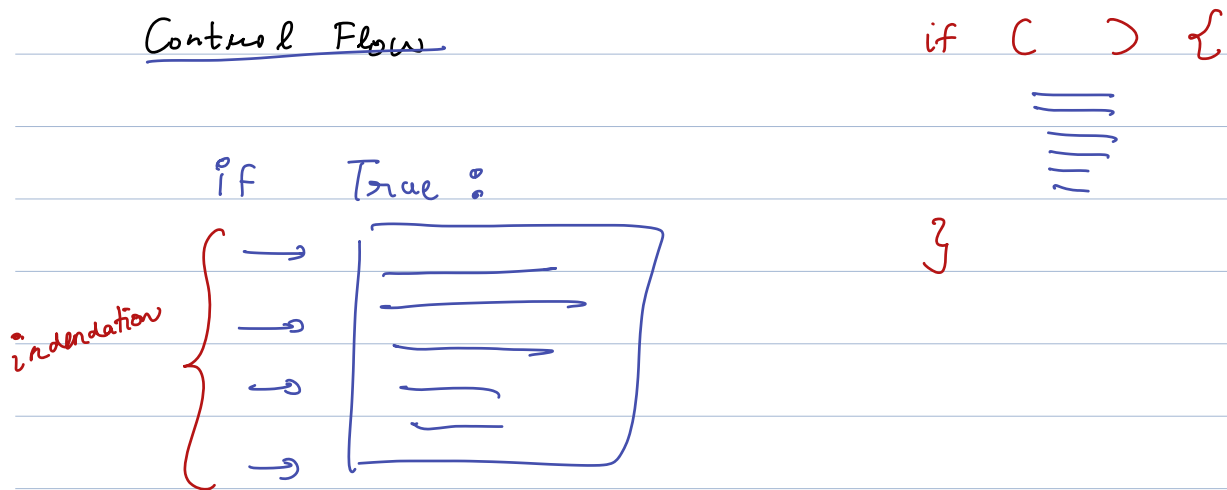


⇒ less time (one sitting).

python, JS



Control Flow



Functions

```
def name():
```



name()

formal arguments \Rightarrow parameters

Definition \Rightarrow

```
def add(a, b):  
    return a + b
```

Parameter vs Argument

$a, b \Rightarrow$ parameters

$3, 5 \Rightarrow$ arguments

~~add(5)~~

add(5, 3)

Function cell \Rightarrow

8

actual arguments

building blocks \Rightarrow Lists, Set, Tuples, Dict \Rightarrow Collection of FCCs

special data types implemented in Python Interpreter

(C Python)

