PYTHON SHORT NOTES
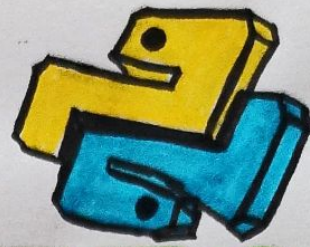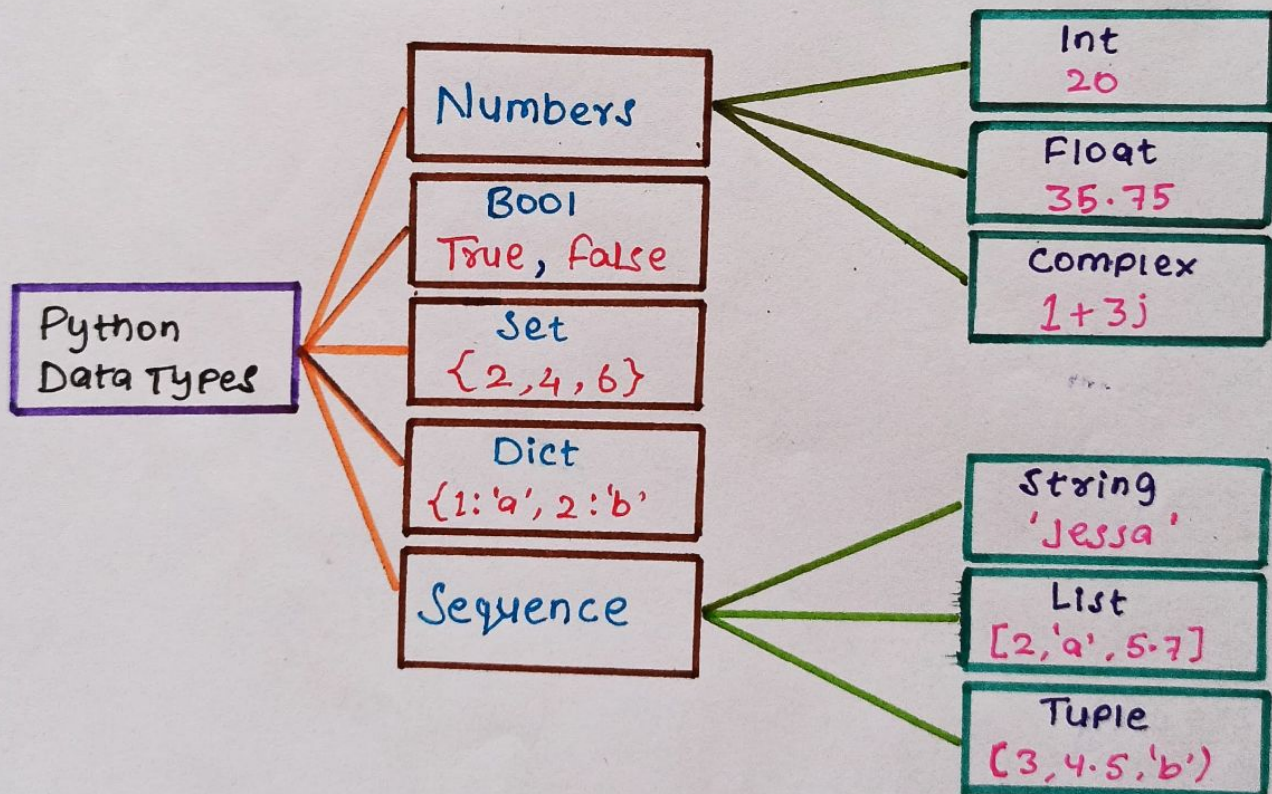
★ <u>What is Python?</u>

> Python is a high-level, interpreted, Interactive, and object oriented scripting language. Python is designed to be highly readable. It uses English Keywords frequently Where as other languages use punctuation.

```
                          ┌──────────────┐                    ┌──────────────┐
                          │   Numbers    │────────────────────│  Int         │
                          └──────────────┘                    │  20          │
                          ┌──────────────┐                    └──────────────┐
                          │   Bool       │                    ┌──────────────┐
                          │  True, false │                    │  Float       │
     ┌──────────────┐     └──────────────┘                    │  35.75       │
     │ Python       │     ┌──────────────┐                    └──────────────┘
     │ Data Types   │─────│   Set        │                    ┌──────────────┐
     └──────────────┘     │  {2,4,6}     │                    │  Complex     │
                          └──────────────┘                    │  1+3j        │
                          ┌──────────────┐                    └──────────────┘
                          │   Dict       │
                          │ {1:'a', 2:'b'│                     ┌──────────────┐
                          └──────────────┘                     │  String      │
                          ┌──────────────┐                     │  'Jessa'     │
                          │  Sequence    │─────────────────────└──────────────┘
                          └──────────────┘                     ┌──────────────┐
                                                               │  List        │
                                                               │  [2,'a',5.7] │
                                                               └──────────────┘
                                                               ┌──────────────┐
                                                               │  Tuple       │
                                                               │  (3,4.5,'b') │
                                                               └──────────────┘
```

★ <u>Advantages & Disadvantage</u>

Advantages	Disadvantages
• Improved productivity	• Slow speed
• Interpreted language	• Not memory Efficient
• Dynamic Typed	• Database Access.

$\longrightarrow$

- Free & open source
- Vast libraries support

- Runtime Errors.
- Weak in mobile computing.

★ <u>Hello, World in Python</u>

> print ("Hello, World!")

Output :-
  Hello, World !

★ LOOP

A loop statement allows us to execute a statement or group of statements multiple times.

<div style="text-align:center">

TYPES OF LOOP

</div>

1. While loop	2. For Loop	3. Nested Loop.
↳ Repeat a state-ment While a given condition is <u>true</u>. It tests condition before executing.	Executes a sequence of statements multiple times and abbreviates code that manages loop variable.	you can use one/more loop inside any other loop.

★ Basic Tuple operation

Python Expression	Resuts	Description.
len ((1,2,3))	3	length
(1,2,3)+(4,5,6)	(1,2,3,4,5,6)	concatenation
('Hi!') * 4	('Hi!','Hi!','Hi!','Hi!')	Repetition
3 in (1,2,3)	True	Membership
for x in (1,2,3): Print X,	1, 2, 3	Iteration

★ Python Decision Making

★ LOOP Statements:-

3.
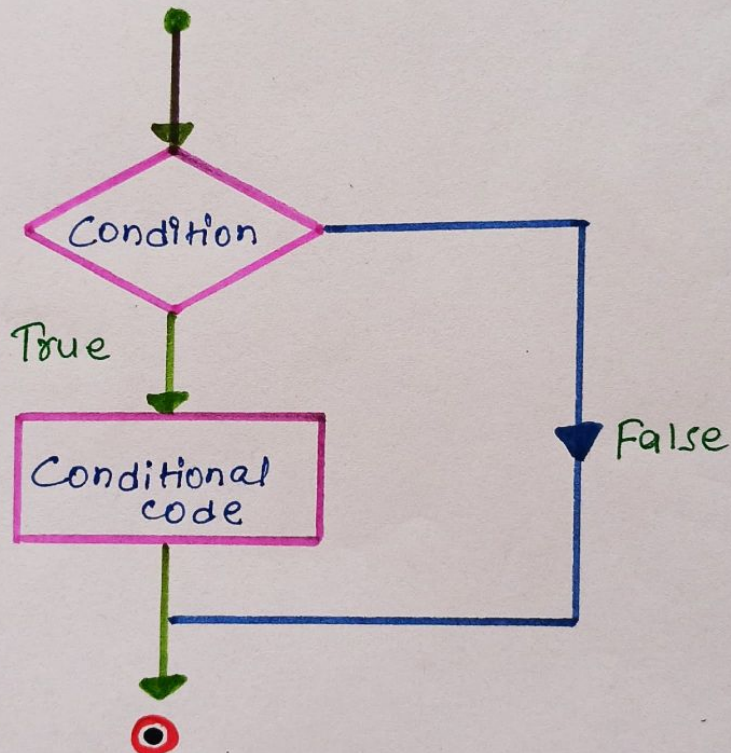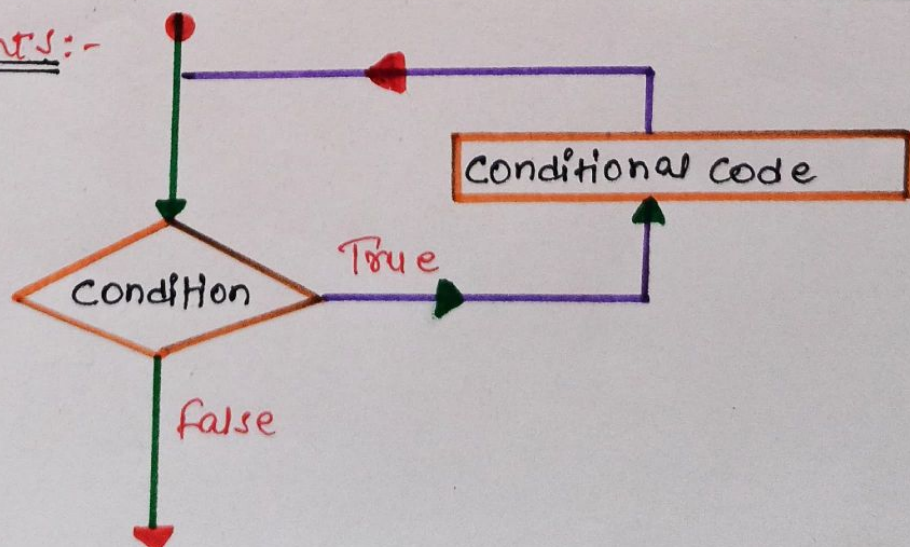
Tuples responds to the + and * operators. much like 'strings', then they mean concatenation and repetition here too. except that result is a new tuple, not a string.

In fact, tuples respond to all the general sequence operations we used on strings.

★ <u>Syntax : Java vs Python</u>

Unlike other programming languages, Python provides the facility to execute the code using few lines.

In Java, it will take three lines to print it.

```
// Code in Java :
public class HelloWorld {
public static void main ( string [] args) {
    System. out. Println (" Hello , World !") ;
 }
}
```

On the other hand, we can do this using one line.
```
# Code in Python
print (" Hello!!")
```

★ <u>Dichonaries :-</u>

votes = {'red' : 3 , 'blue' : 5}	
votes. keys ( )	# Output : ['blue','red'].
votes ['gold']=4	# add a key/val
del votes ['gold']	# deletes key
votes ['blue']=6	# change value
len (votes)	# 2
votes. values ( )	# [6,3]
'green' in votes	# False
votes.has_key ('red')	# True

★ Numbers :-

total = 3 * 3	# Output : 9
total = 5 + 2 * 3	# Output : 11
cost = 1.50 + 3.75	# Output : 5.25
total = int ("9") + 1	# Output : 10

★ Tuples :-

Like lists, except they cannot be changed

tuple 1 = (1, 2, 3, "a", "z")	# Create tuple
tuple 1 [3]	# 'a'

★ list :-

Scores = ['A', 'c', 90, 75, 'c']	
Scores [0]	# Output : 'A'
Scores [1:3]	# 'c', 90
Scores.count ('c')	# 2
Scores.append (100)	# Adds 100 to list
Scores.pop ()	# removes third item.

5.

INTERVIEW QUE.

★ <u>What is scope?</u>

> Every object in python functions within a scope. A scope is a block of code where an object in python remains relevant. Namespaces uniquely identify all the objects inside a program.

       However, these namespaces also have a scope defined for them where you could use their objects without any prefix.

• A local scope refers to the local objects available in the current function.

• A global scope refers to the objects available through the code execution since their inception.

• A module - level scope refers to the global objects of the current module accessible in the program.

• An outmost scope refers to all the built -in names call able in the program. The object in this scope are searched last to find the name refferenced.

★ **What are global, Protected & Private attributes?**

> • **Global variable:**

Global variables are public variables that are defined in the global scope. To use the variable in the scope inside a function we use global keyword.

• **Protected attribute:**

Protected attribute are attributes defined with an underscore prefixed to their identifier.

• **Private attribute:**

Private attributes are attributes with double underscore prefixed to their identifier.

eg. __atul.

They cannot be accessed/modified from the outside directly and will result in AttributeError if such an attempt is made.

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