

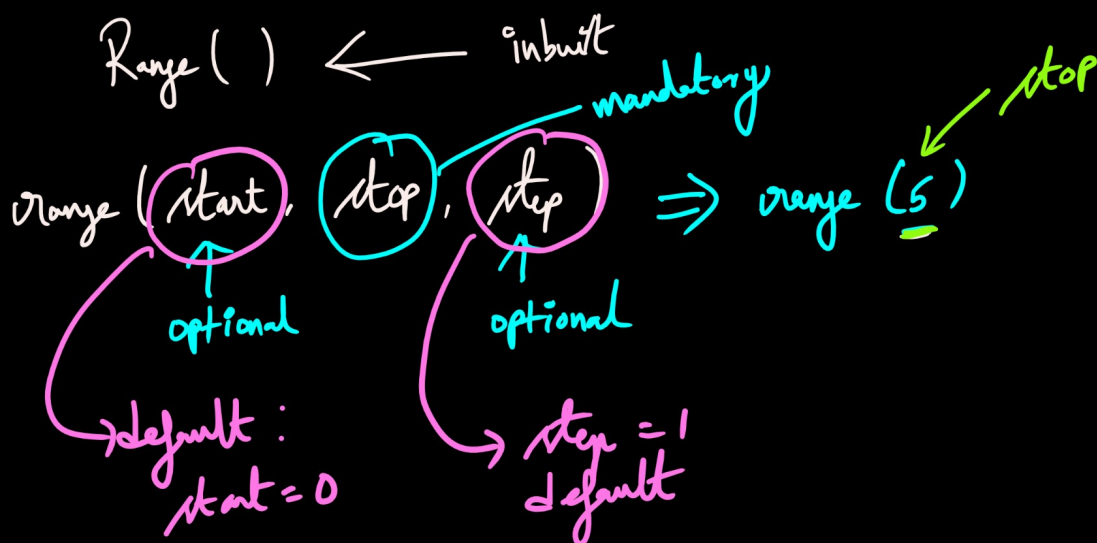
PYTHON PROGRAMMING

GATE DA & DSA

Agenda:

- * Datatype - (Sets, Frozensets, Dictionary, Range, Boolean, None type)
- * User Input in Python

List & Tuple \rightarrow sequence data type.



range(5) \Rightarrow (0, 5) \Rightarrow (0, 1, 2, 3, 4)

we shouldn't consider value.

range(10, 15) ; default: step = 1

start stop

shouldn't consider 15

(10, 11, 12, 13, 14)

range(10, 15, 2)

(10, 12, 14)

range(10, 29, 3)

10, 13, 16, 19, 22, 25, 28

start stop step

range(-5) ; start = 0
 ↑ stop step = 1

(0, → +1
 -5

(start > stop)

[]

range(-5, 0) stop
 ↑ start default: step = 1

(-5, -4, -3, -2, -1)

start from 0.

(0, -1, -2, -3, -4)

range(⁰start, stop, ¹step)

↓
should be integer

Sets: → A set is a collection of unordered

4 unindexed & unchangeable

• In set, you can't have a duplicate value.

→ { } ← sets [] — list
 () → tuple

sets \rightarrow Unique values only.

Unchangeable means?

Set-a = { 'A', 'B', Viret, 'Rohit', 'Rajini' }

Kohli

add a new element to this set
you can remove element from set

set-a \rightarrow [1, 2, "A", "B", "C"] } Set is Mutable
memory id
1235

tuple-a \rightarrow [1, 2, "A", "B"] } tuple is immutable.
1236

tuple-b [1, 2, "A", "B", "C"]
1239

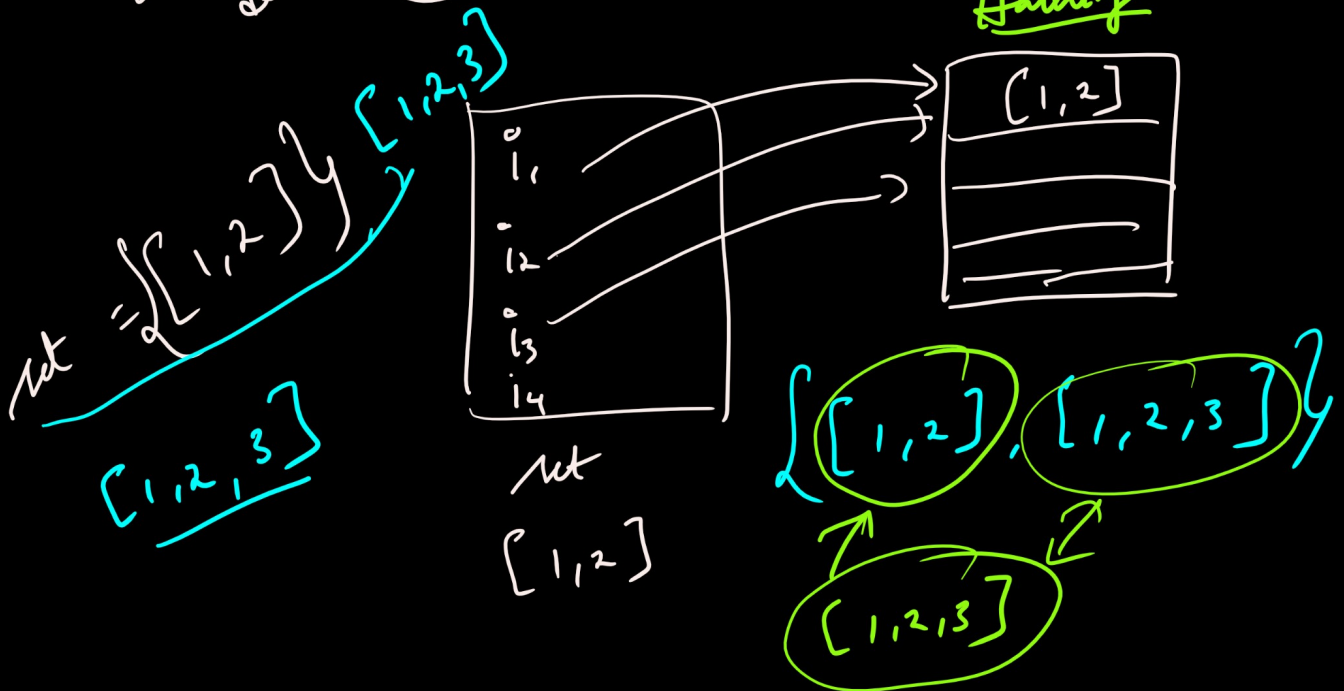
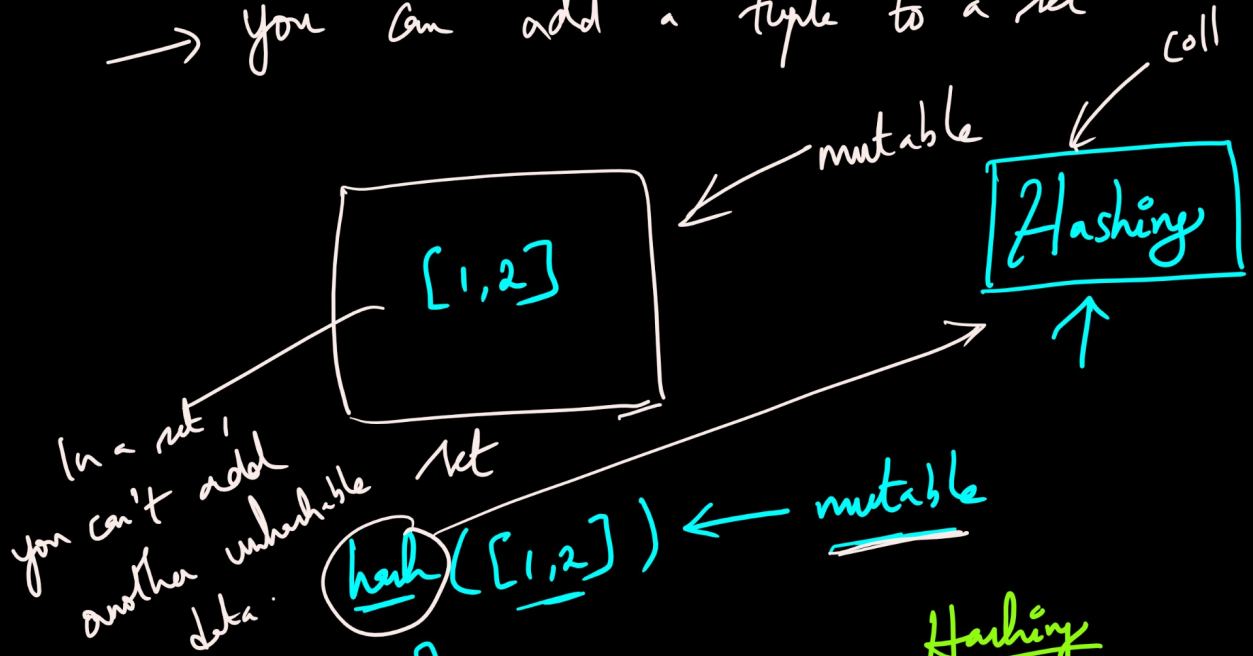
both are mutable.

Set	list
Unique you can't update a value.	need not be unique. update is possible

Can't index
Unordered.

Index
Ordered

- you cannot add a list to a set
- you can add a tuple to a set



Frozen Set : → Set — Mutable

- unordered
- Duplicates not allowed
- Immutable
- Element addition / deletion not allowed

Dictionaries :-

- Dictionaries are used to store data values in 'Key : Value' pairs. Key : value
- A dictionary is a collection which is ordered, changeable and do not allow duplicates.

Dictionaries → Mutable

Before Python 3.7
↓
Dictionaries are Unordered
Currently, Dictionaries are Ordered

dict_a → { 1: 2, 2: 3, "A": "Atom", "B": "Bottom" }

Update

Mutable

Memory id - 12345

$\{$ "Warner": 70, "Heard": 80,
~~"Maxi": 100~~, "Maxi": 70 $\}$

Duplicate

Warner: 70, Heard: 80, Maxi: 70

• You can't add a list, set, dictionary as a key in a dictionary. But you can have it as a value.

⊗ You can add tuple as both Key & value

Boolean: \rightarrow True \rightarrow 1 / 1.0
 False \rightarrow 0 / 0.0

$\begin{matrix} a \\ b \\ c \end{matrix} \rightarrow \boxed{\text{False}}$
 $\begin{matrix} h \\ f \\ g \end{matrix} \rightarrow \boxed{\text{True}}$

1235 1238

None Type: a = None

User Input:

input()

add a string to be displayed

(X)

(X)

always considers input as a string

whenever user types something.
