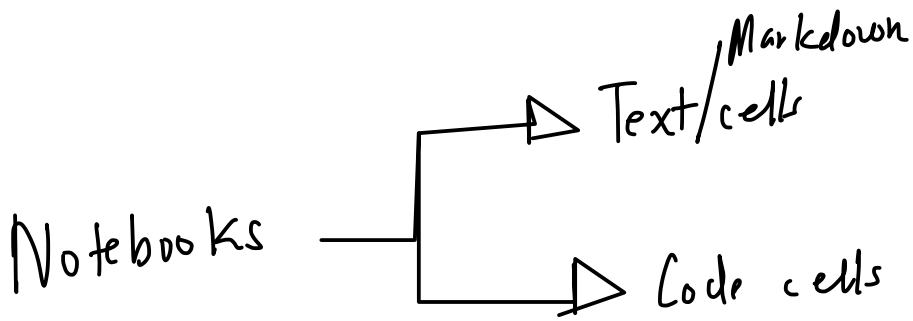


Sunday 12th March 2023.

Two kits - Notebooks

→ possible to use google colab online

Notebooks are made up of cells



Variables

Containers holding/storing data. Defined by a name and a value

Int. var name → a = 10 value
print(a) ; answer = 10

advisable to use a name that represents
what the variable is storing.

Be explicit!

Eg. first-number = 10

Variable names are not fixed. You
can change by assigning a new value.

Eg.

a = 5

print (a) ; output (answer) = 5

String variable

These are text. The value should always
have " "

Variables

- Int eg. 5
- String eg. "hello"
- Float eg. 5.0
- Boolean eg. true/false

It's important to always know the type of data you are working with

String-1 = "5"

String-2 = "8"

print (string-1 + string-2) = 58 ; type = string

↑ ↓
 string1 string2

int-1 = 5 ; int-2 = 4

print (int-1 + int-2) = 10 ; type = int

Operations can't be performed on

INTS AND STRINGS

!!

LISTS

They are a collection of values, separated by a comma and enclosed in a square brackets. The type of elements in a list variable. They are **ordered** & **mutable** (changeable)

List

Eg.

```
x = ["girl", 2, 3.0, true]
```

```
print(x)
```

add elements

1. **#append** `x.append(1, 4)`

```
print(x) = x = ["girl", 2, 3.0, true, 1, 4]
```

add operation

```
x = x + [3, 2, 4]
```

```
print(x) = ["girl", 2, 3.0, True, 1, 4, 3, 2, 4]
```

Tuple

Collections of items that are not changeable, enclosed in (), round brackets.

Sets Not indexable

Collection of data that are un-ordered and mutable.

`a = "You are good".` gives the alphabets in the value
`print(set(a))` = { 'u', 'o', 'y', 'a', 'e', 'g', 'r' }

Elements are unique. Doesn't repeat.

Dictionaries Not indexable.

Similar to sets with a key-value pair. Each must be unique

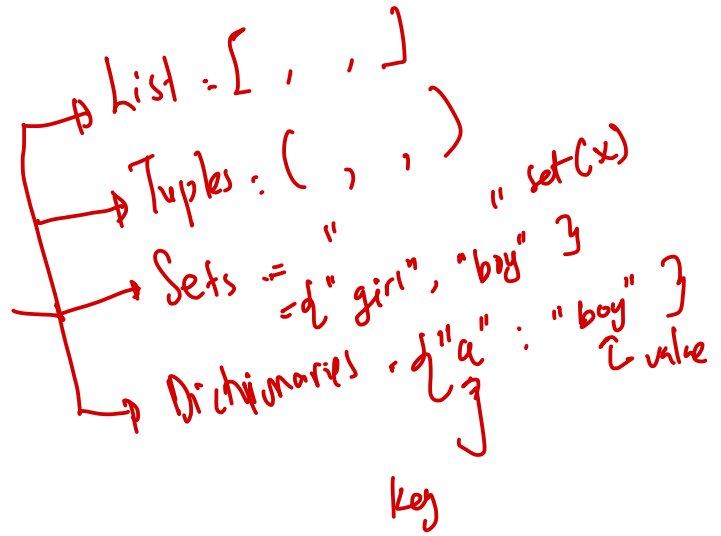
`a = { "name": "boy", "age": 7, "colour": "black" }`

It's possible to change "keys" / attributes in a dictionary by indexing that property and adding the new name
`a["name"] = "girl"`
`print(a["name"])` → girl.

add new property

`a["new-children"] = 2`

Collections of data/value



	Mutable	Ordered	Indexable	Unique
List	✓	✓	✓	✗
Tuple	✗	✓	✓	✗
Set	✓	✗	✗	✓
Dictionary	✓	✗	✗	<div> keys ✓ values ✗ </div>

Show answer

	Mutable	Ordered	Indexable	Unique
List	✓	✓	✓	✗
Tuple	✗	✓	✓	✗
Set	✓	✗	✗	✓
Dictionary	✓	✗	✗	✓ keys ✗ values

possible to order them with inbuilt python
library : OrderedDict