

Python

Python is a high level, interpreted & general purpose, dynamic programming language which focus on used in many fields.

Human
Readable

```
print ("Hello");
```

C/C++
cout << "___"
Machine

CODE || READABILITY

Who's Using Python?

- * Software Engineers
- * Web Developers.
- * Data Scientists
- * Network Engineers
- * Data Analysts
- * Mathematicians
- * Accountants

Kids

Why Python?

① Easy of Coding → learning curve of Python is very low.

```
str="Hello World"
```

Solve complex problems using less time & with fewer lines of code

Java

```
str.substring(0,3)
```

```
str.substring(0,3)
```

JS

```
str[0:3]
```

Python

```
str[0:3]
```

② GENERAL PURPOSE

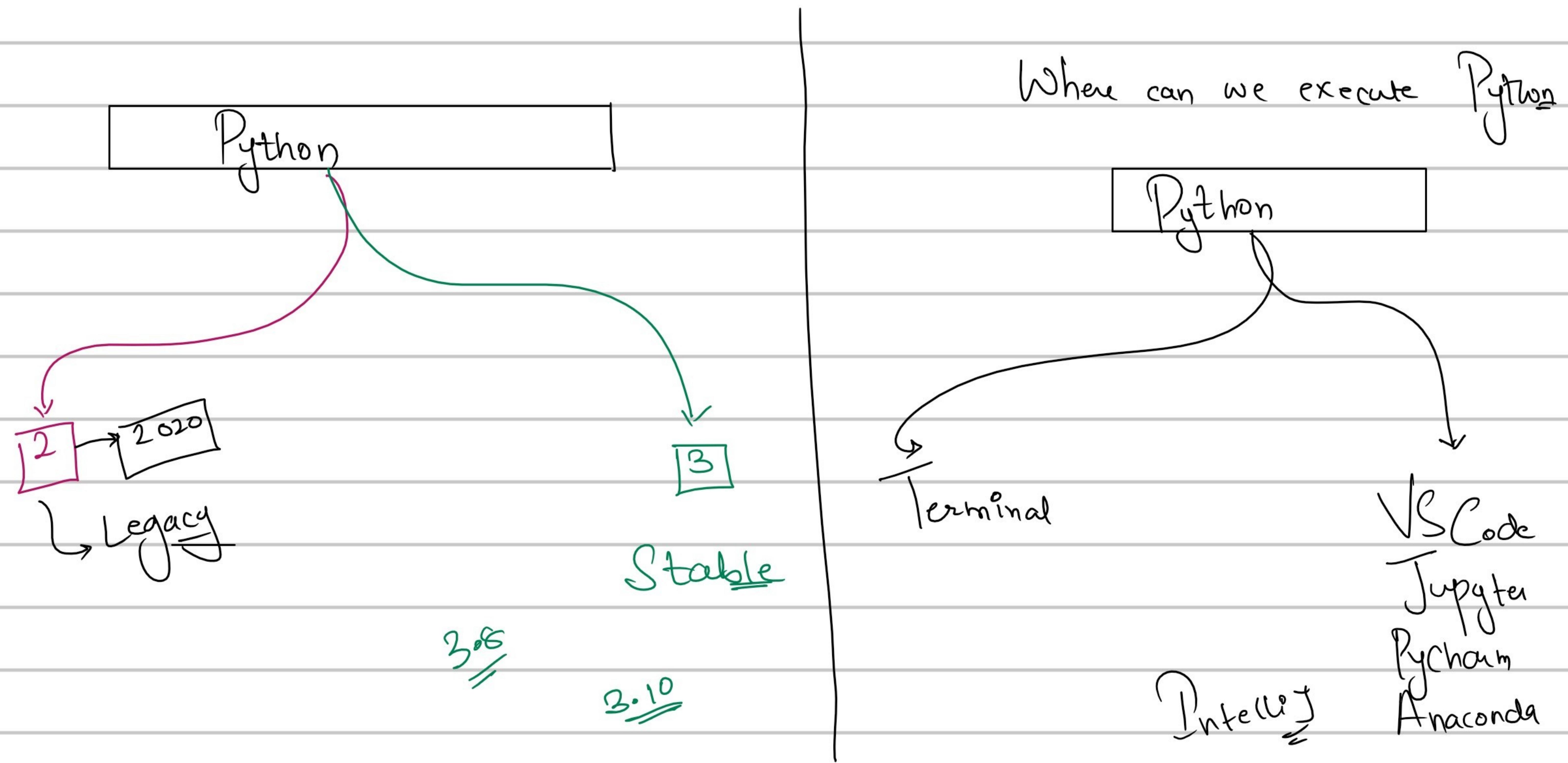
- ① Data Science
- ⑥ Testing
- ⑪ Desktop App
- ② Data Analytics
- ⑦ AI
- ⑫ Video Games
- ③ Machine Learning
- ⑧ Big Data
- ⑬ Data Visualization
- ④ Trading Programs
- ⑨ Mobile App
- ⑮ Statistics
- ⑤ Automation.
- ⑩ API Development

② High Level

- ⑦ Cross Platform → no dependency on OS

⑤ Large Ecosystem → there are tons of libraries available for python.

⑥ Huge Community Support



Data Types in Python

Type	Data Types
Text	str
Numeric	int, float, complex
Sequence	list, range, tuple
Map	dict
Set	set, frozenset
Boolean	bool
Binary	byte, bytearray, memoryview

Keywords in Python

Keyword	Description
and //	A logical operator
as //	To create an alias
assert //	For debugging
break ,	To break out of a loop
class //	To define a class
continue ,	To continue to the next iteration of a loop
def //	To define a function
del //	To delete an object
elif ↗ else ↗ if	Used in conditional statements, same as else if
else	Used in conditional statements
except ↗ catch //	Used with exceptions, what to do when an exception occurs

Keywords in Python

Keywords	Description
false	Boolean value, result of comparison operations
False	
finally //	Used with exceptions, a block of code that will be executed no matter if there is an exception or not
for	To create a for loop
from	To import specific parts of a module
global ↗	To declare a global variable
if ↗	To make a conditional statement
import ↗	To import a module
in ↗	To check if a value is present in a list, tuple, etc.
is ↗	To test if two variables are equal
lambda ↗	To create an anonymous function

Keywords in Python

Keyword	Description
None //	Represents a null value
nonlocal ,	To declare a non-local variable
not //	A logical operator
or //	A logical operator
pass //	A null statement, a statement that will do nothing
raise ,	To raise an exception
return //	To exit a function and return a value
True ↗	Boolean value, result of comparison operations
try //	To make a try...except statement
while //	To create a while loop
with //	Used to simplify exception handling
yield //	To end a function, returns a generator

Conventions in Python

* function | variable

get_location_for_car()
tax_amount

Snake Casing →

One_two_three-four

* class

Pascal Casing

→ OneTwoThreefour

BankDetail

MyPoint

1

1 2 ③ 4 5 6

range

[from , to]
↓ ↓

k i t k a t

zero one
based based

0 →

0 ① 2 3 4 5

-ve

-6 -5 -4 -3 -2 -1

word[1 : 3]

1 1 2 3 4 ⑤ 6 7 8 9 10 ⑪ 12 ⑬ 14 15 16 17 18 19 20
I n t e r n a t i o n a l i z a t i o n
0 ① 1 2 3 4 ⑥ 6 7 ⑧ 9 10 11 12 13 14 15 16 17 18 19

international
inter
intan

0:13
0:5
0:6

nation 5:11
national 5:13
ion 8:11, 17:9:11

on 16:20
18:1
18:1
9:11

\rightarrow space

Flow Control

{
g X

Indentation

if condition:
 $\star \star \star \star \star$ statements

else

$\star \star \star \star \star$ statements

String Interpolation in Python

a=10
b=20

When we write a string
without breaking for

including variables

[" Value of a is "+a+", and value of b is "+b+"]

message=f" Value of a is {a}, value of b is {b}";

Functions

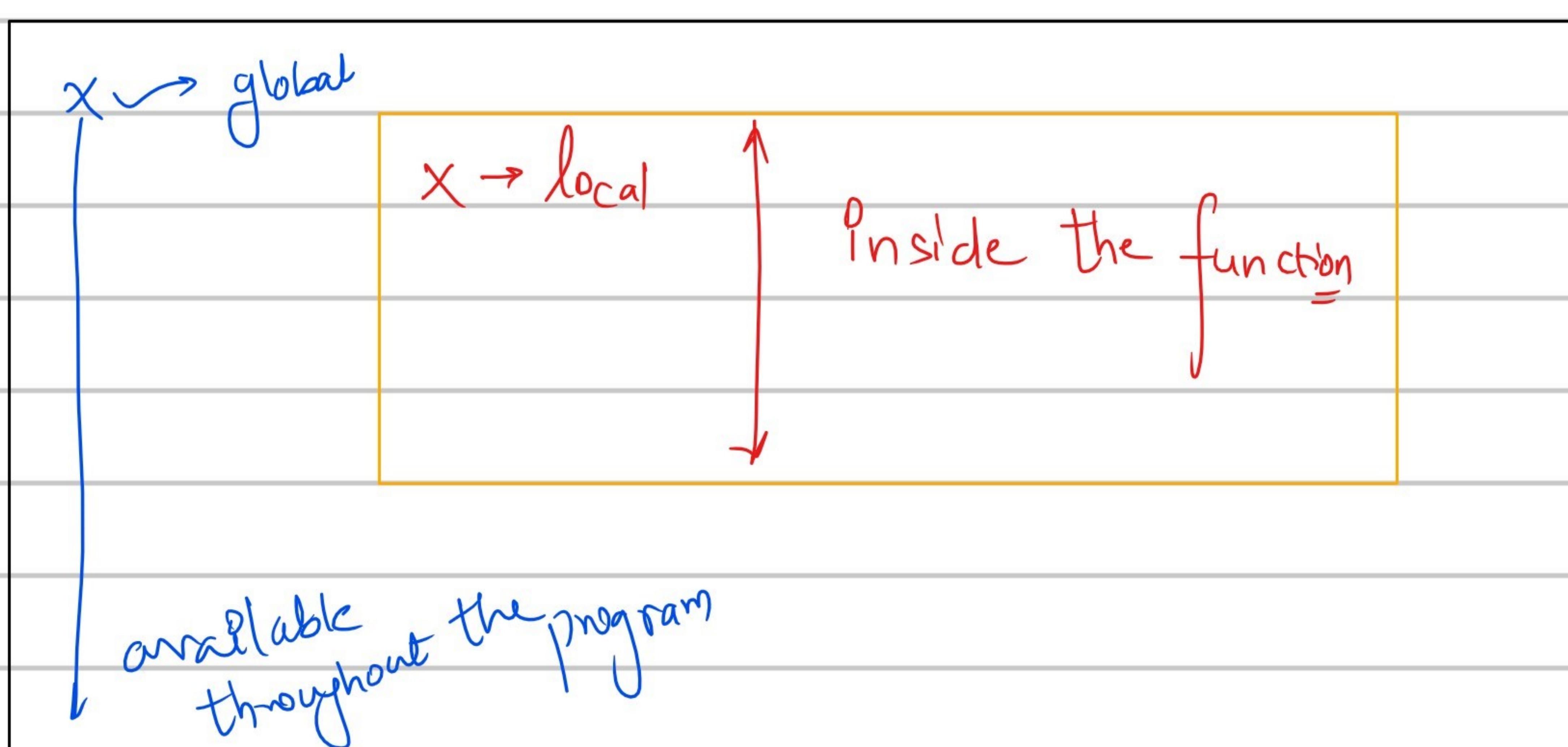
group of related statements
which performe a
specific task.

CODE ON DEMAND

```
def function_name(parameters):  
    """ doc_string """  
    statement(s)  
    return someValue,
```

→ Optional

Scopes in Python



* Python doesn't support block scope
* min scope it supports is function

Data Structures

list tuple range set dict

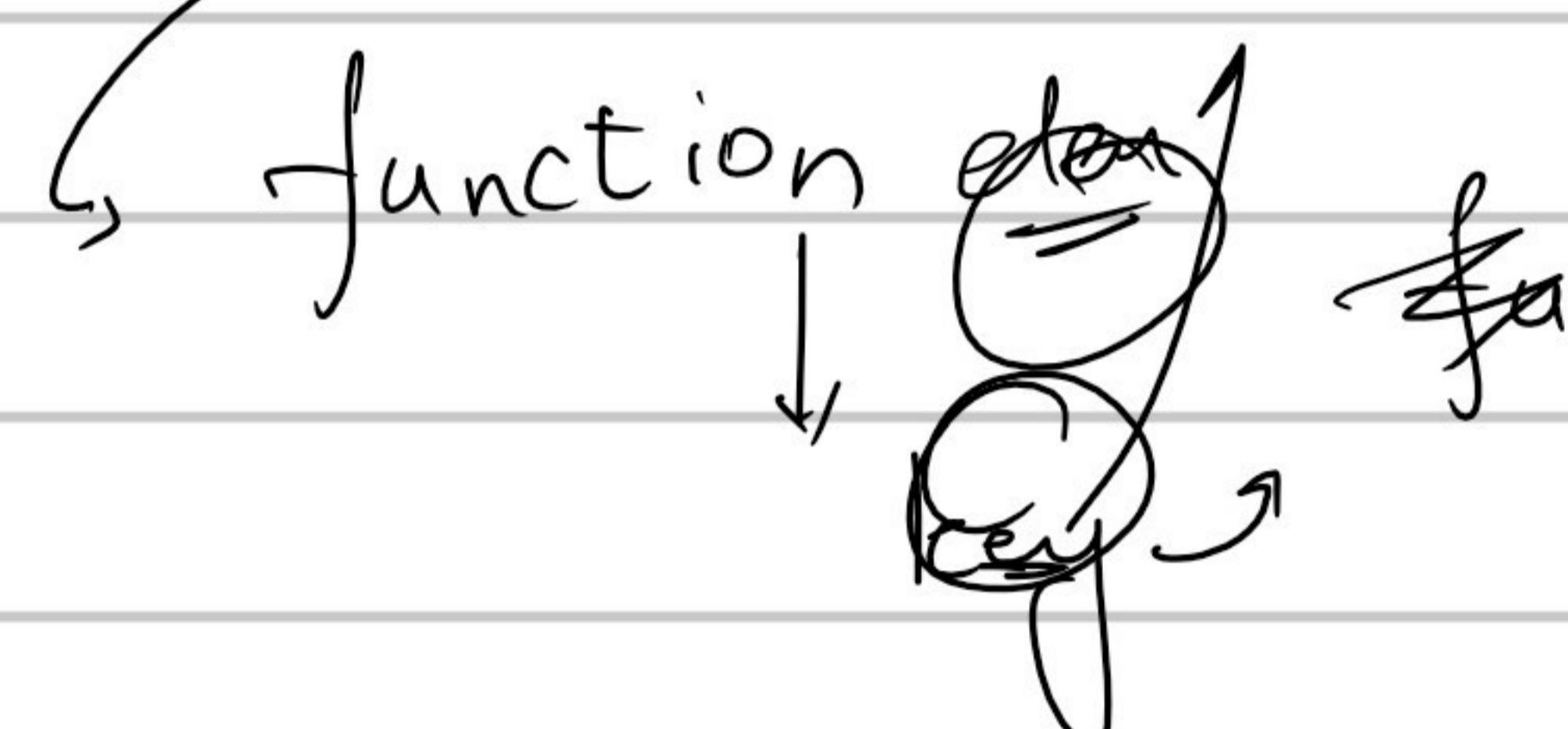
[] () range() { } {key: value}

Sorting

numbers = [1, 5, 8, 0, 9]

[0, 1, \mathbb{S}, \mathbb{E}, 9]

```
Cart = [ (product, price),  
        (prod, price),  
        (prod, price) ]
```



Lambda Functions

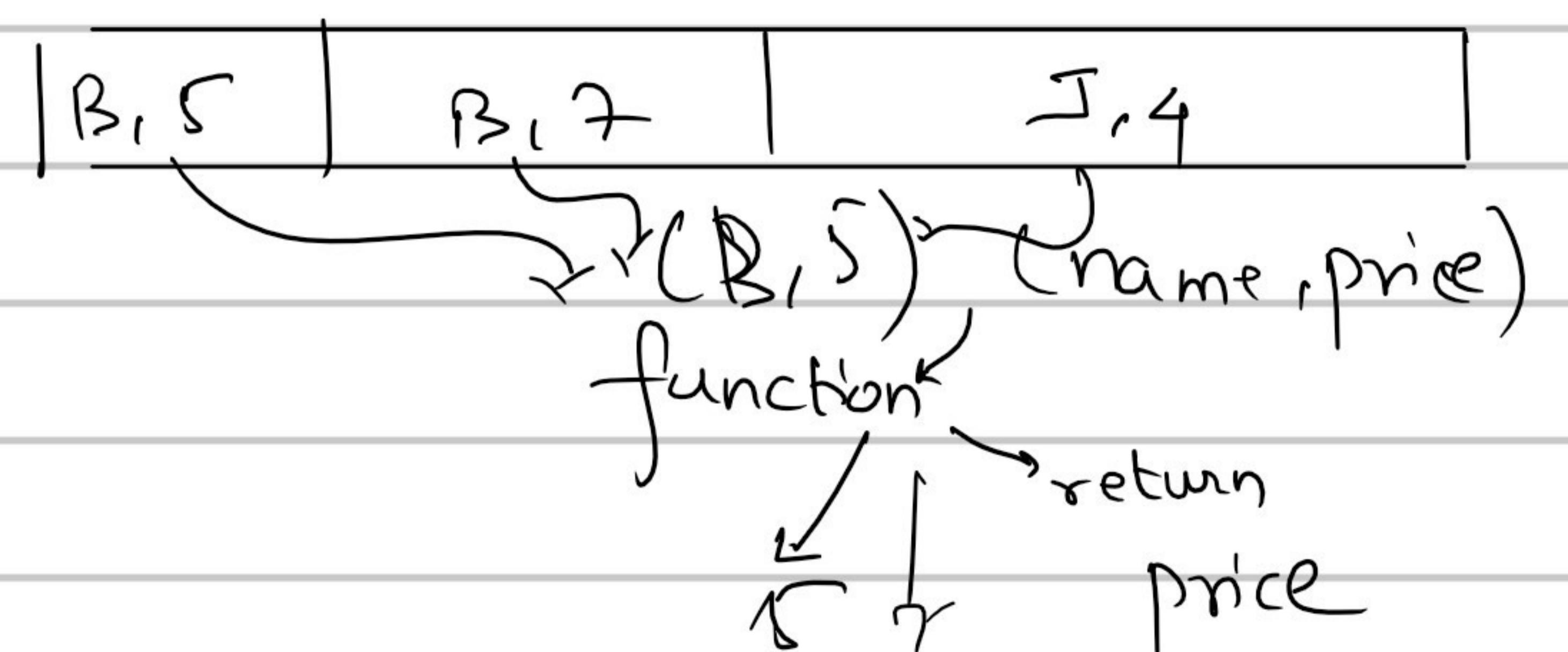
→ anonymous functions → functions without any name.

Structure of a lambda function

lambda Parameter : expression

no return statement
expression → executable
↓ execute
else
↳ value
↓
return

map.



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