Module, Package and Standard Library

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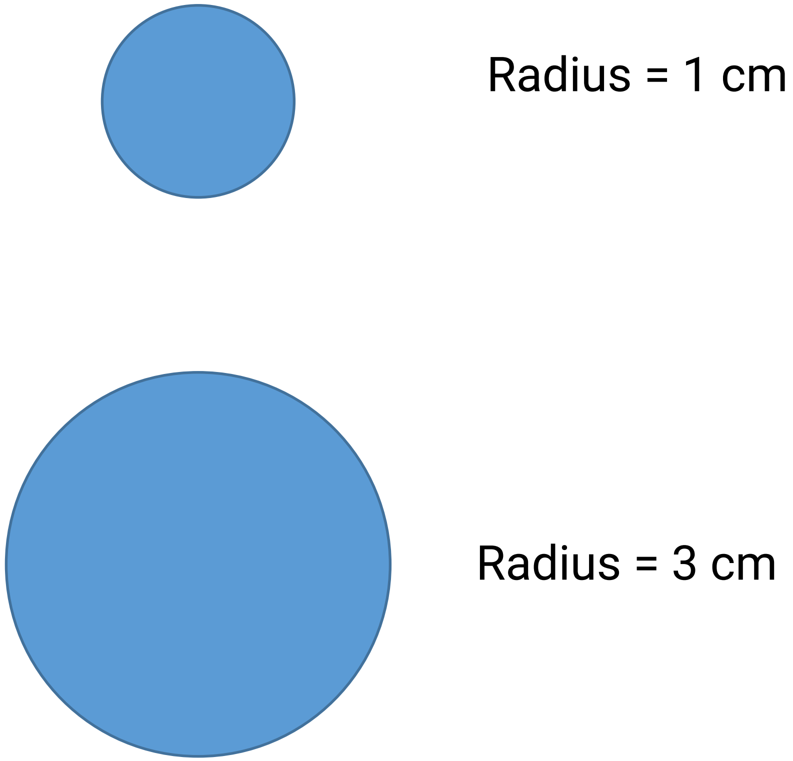
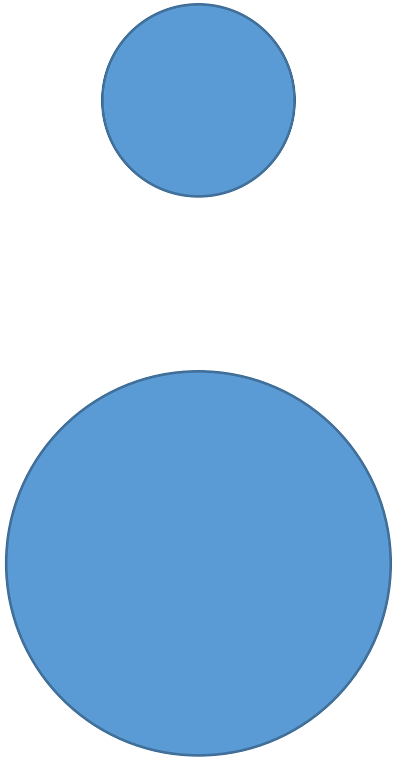
Functions: Code reusability



Radius = 1 cm

Radius = 3 cm

Functions: Code reusability

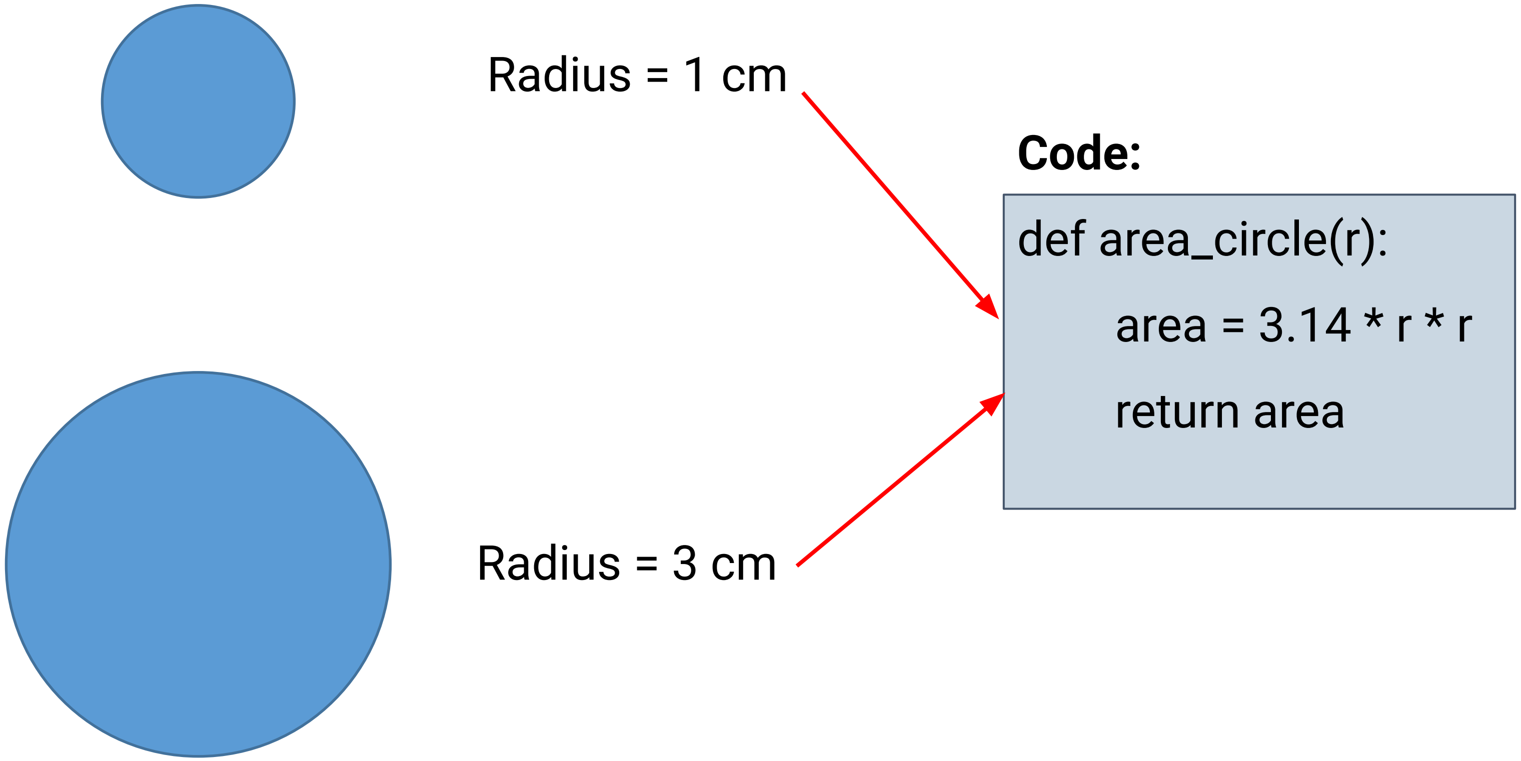


Radius = 1 cm

Radius = 3 cm

AREA?

Functions: Code reusability



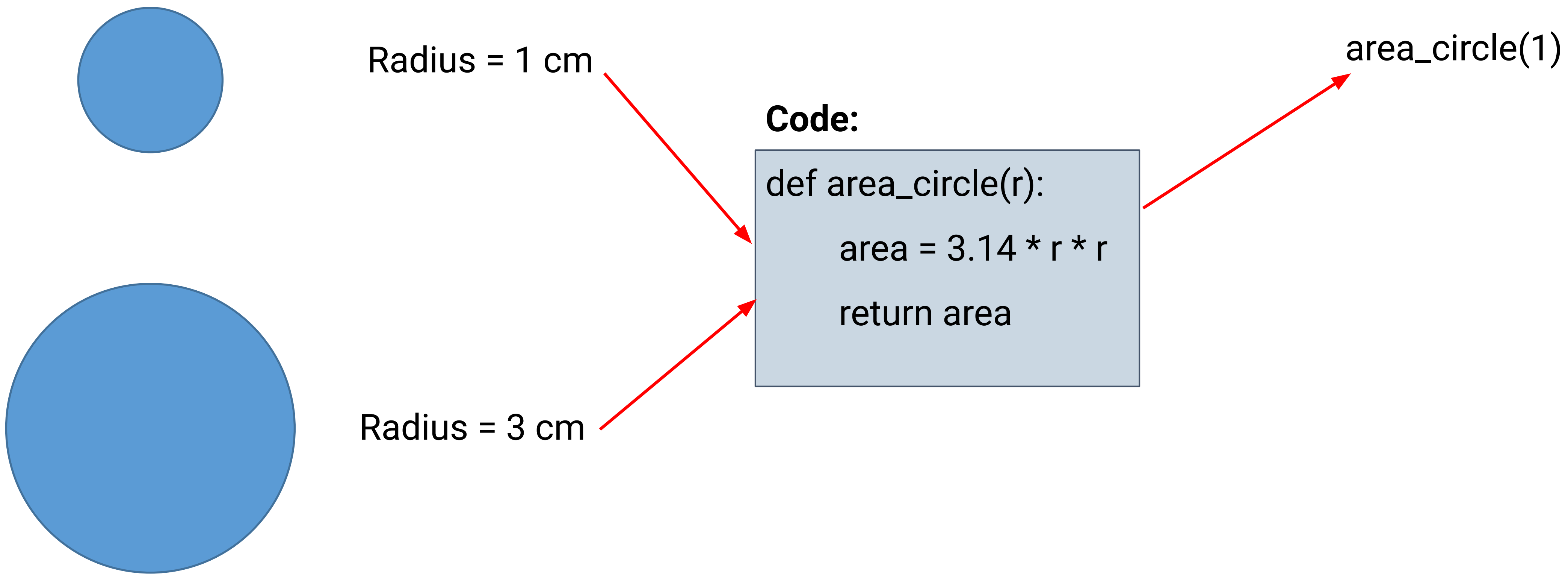
Radius = 1 cm

Radius = 3 cm

Code:

```
def area_circle(r):
        area = 3.14 * r * r
        return area
```

Functions: Code reusability



Radius = 1 cm

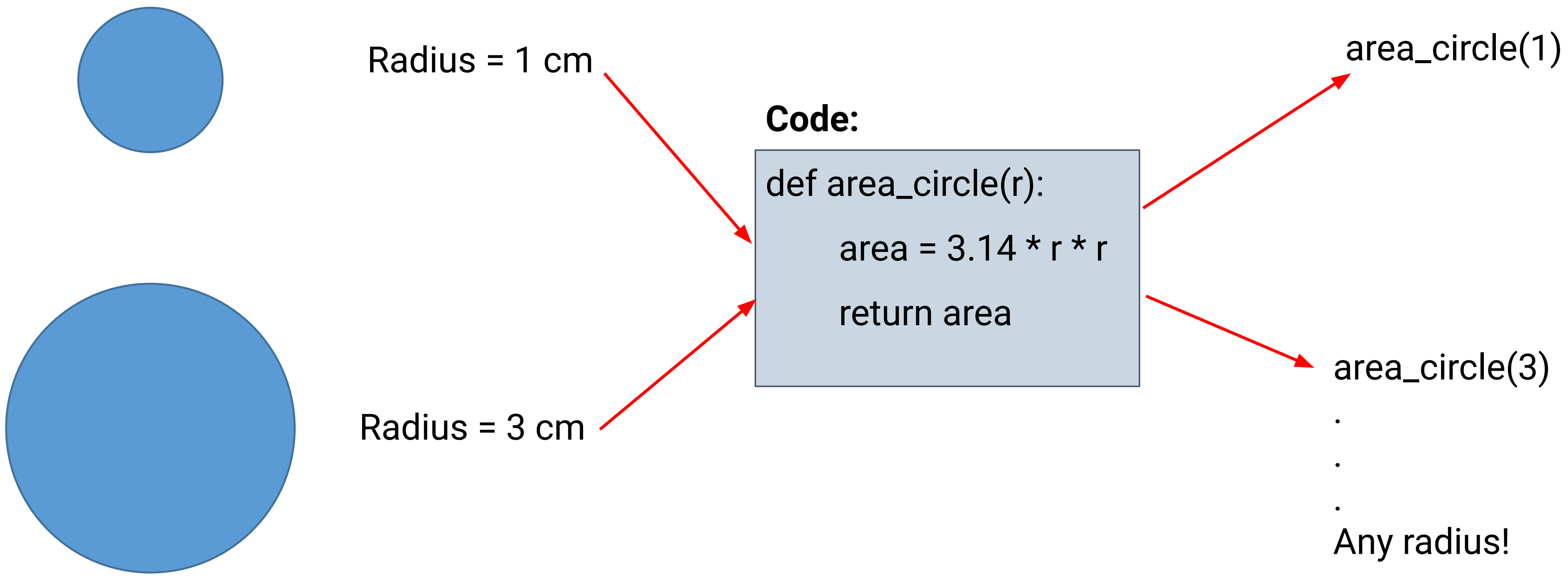
Code:

```
def area_circle(r):
        area = 3.14 * r * r
        return area
```

area_circle(1)

Radius = 3 cm

Functions: Code reusability



Radius = 1 cm

Radius = 3 cm

Code:

```
def area_circle(r):
        area = 3.14 * r * r
        return area
```

area_circle(1)

area_circle(3)
.
.
.
Any radius!

Functions can’t be used outside the file!

Module

Arithmetic.py

```
def addition():
       -----
       -----

def subtraction():
       ------
       ------

def multiplication():
       ------
       ------

def division()
       ------
       ------
```

Logical.py

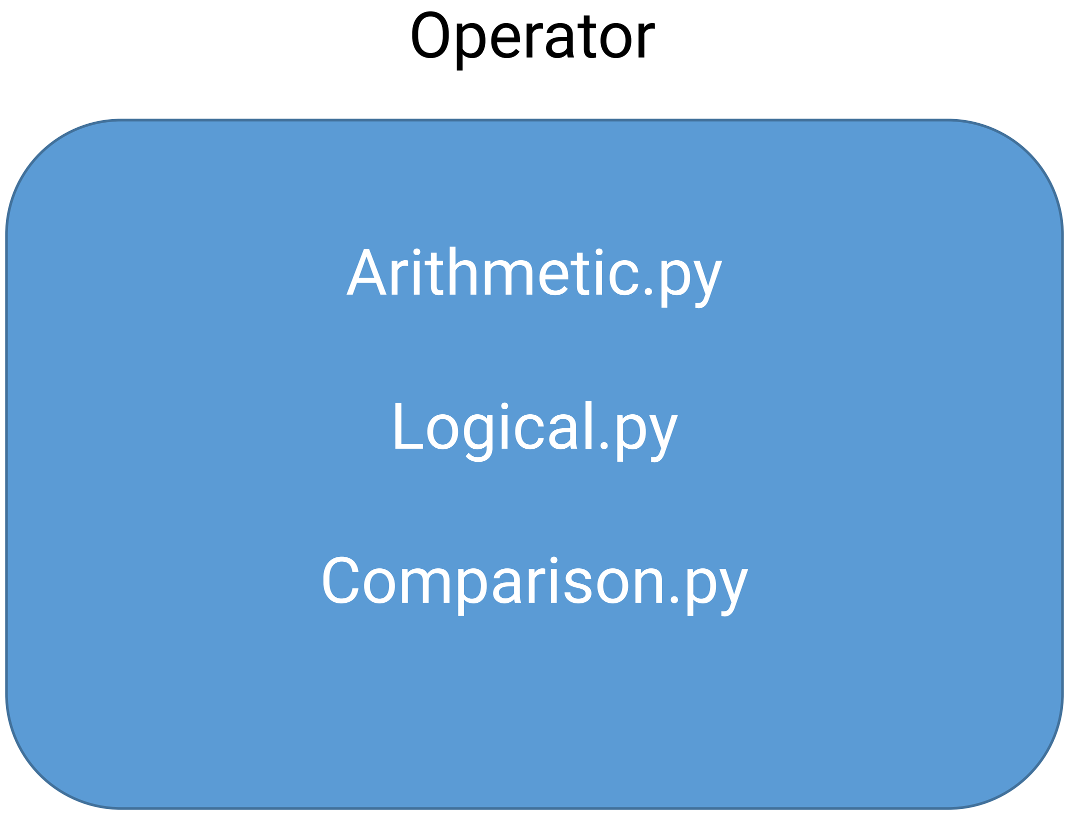
```
def and():
       -----
       -----

def or():
       ------
       ------

def not():
       ------
       ------
```

Building a Module in Python

Package



Operator

Arithmetic.py

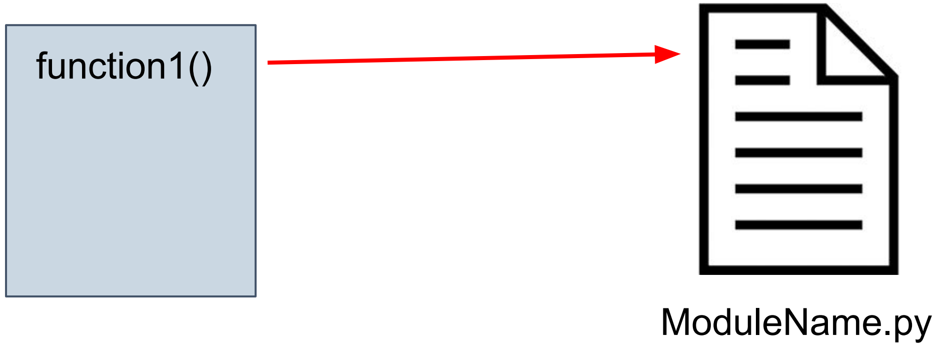
Logical.py

Comparison.py

Function, Module and Package

ModuleName.py

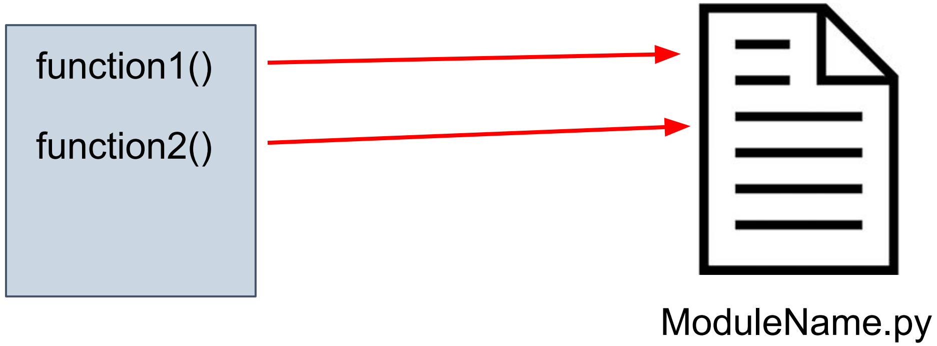
Function, Module and Package



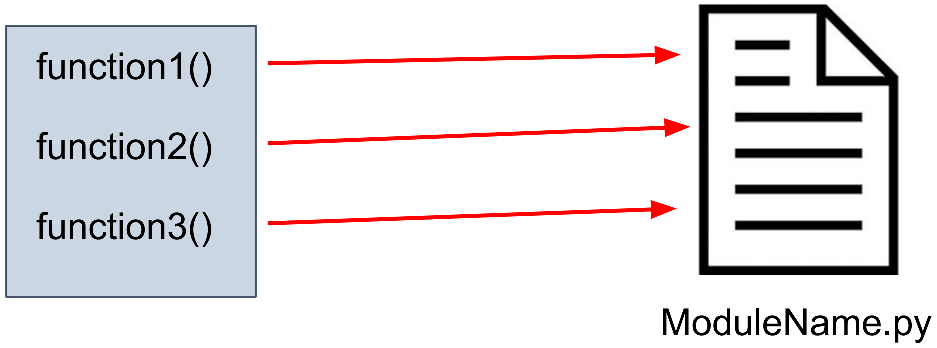
function1()

ModuleName.py

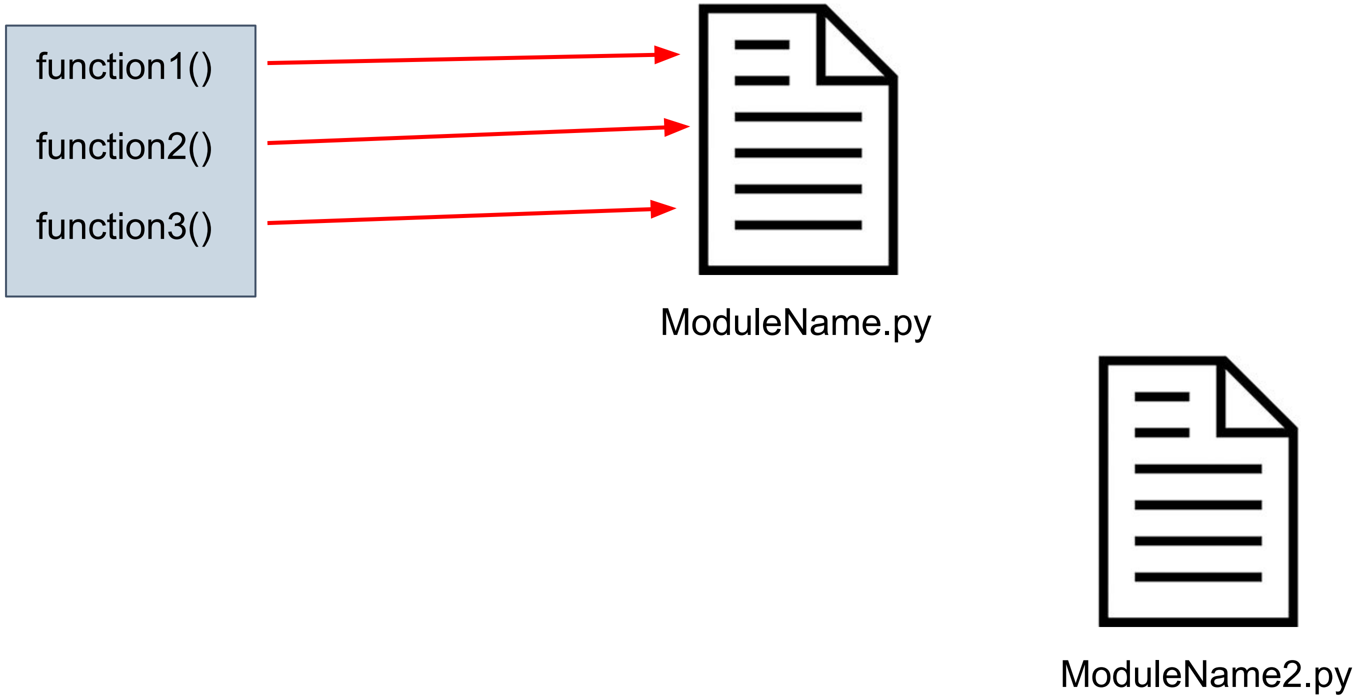
Function, Module and Package



Function, Module and Package



Function, Module and Package



function1()

function2()

function3()

ModuleName.py

ModuleName2.py

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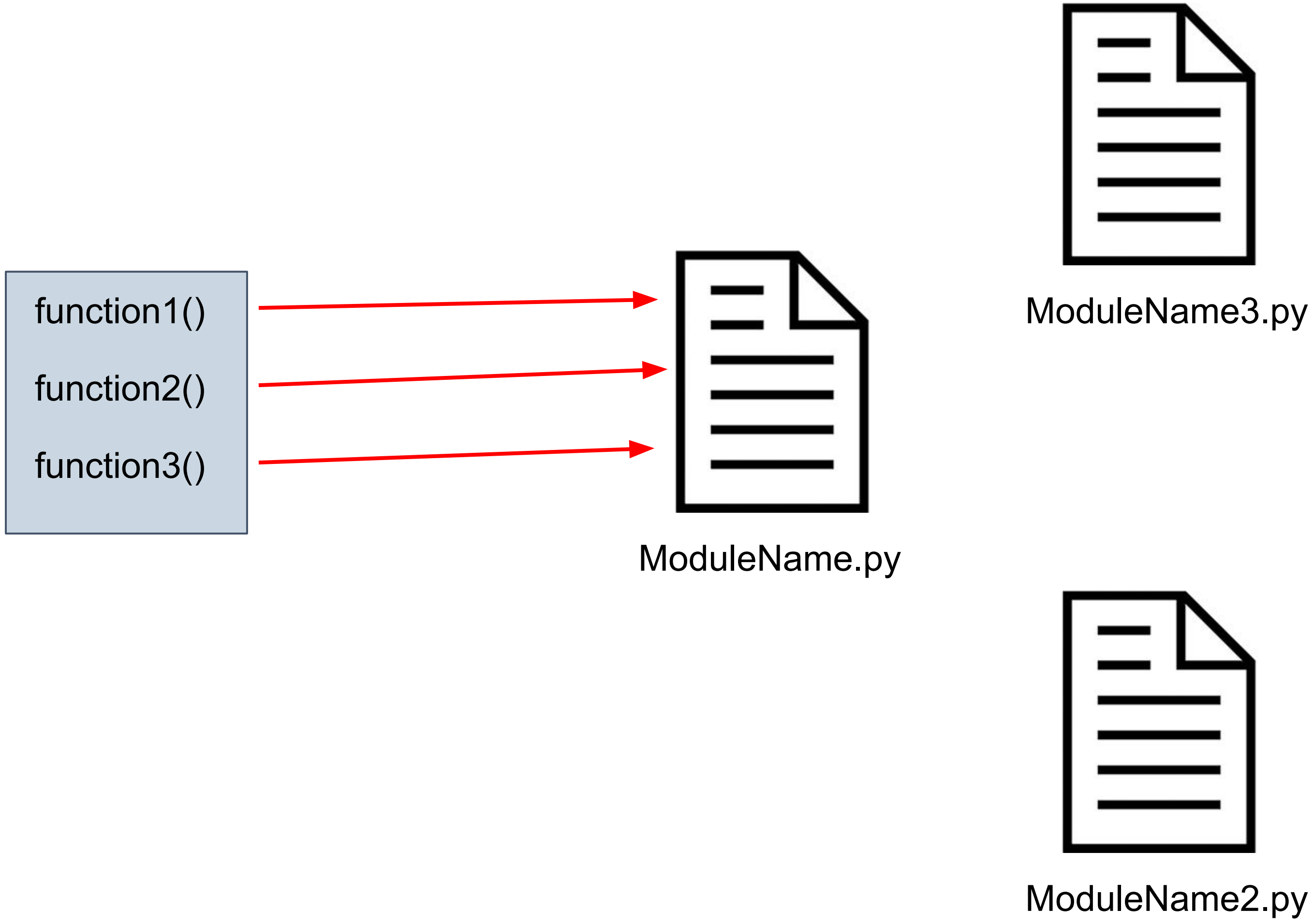
Function, Module and Package



function1()

function2()

function3()

ModuleName.py

ModuleName3.py

ModuleName2.py

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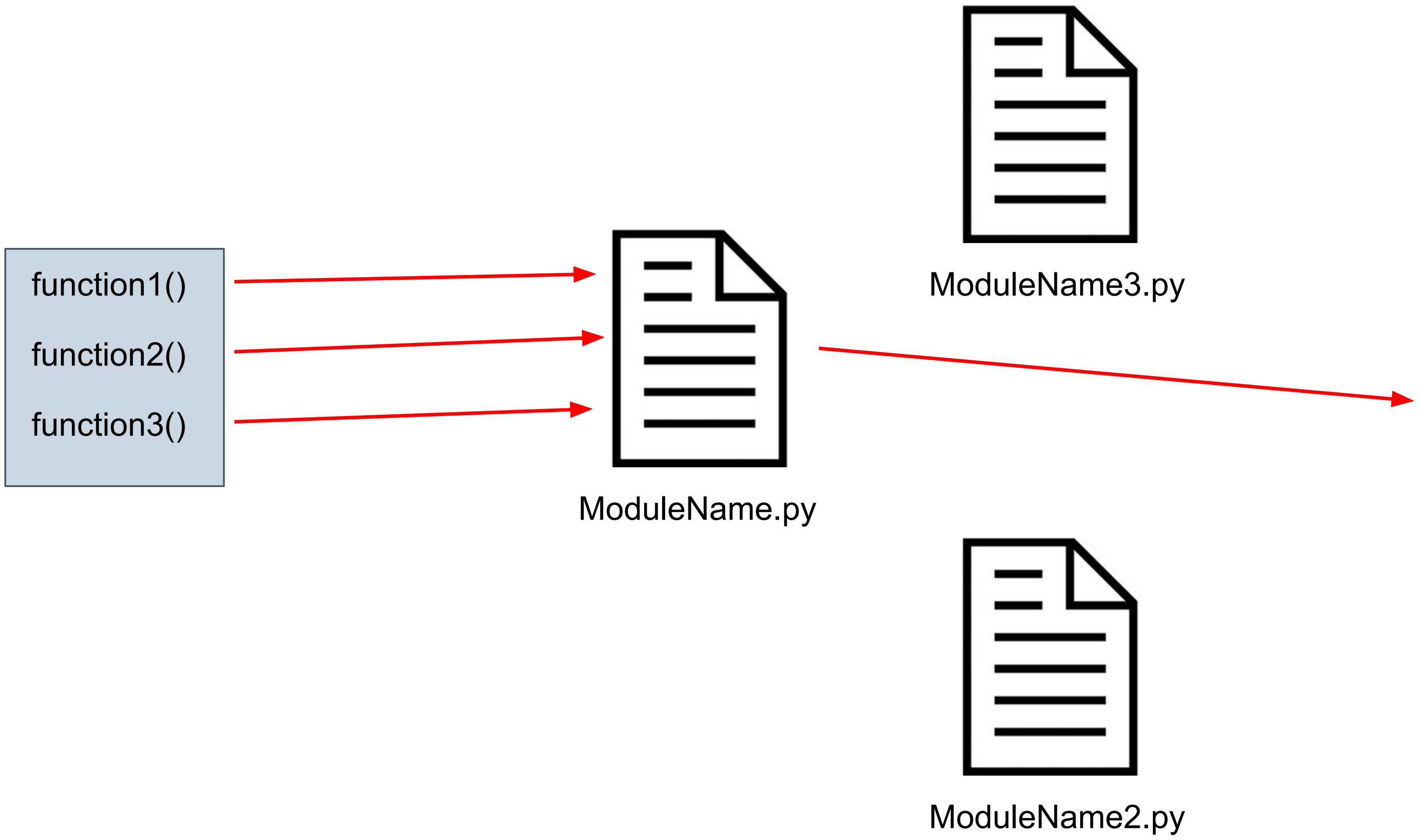
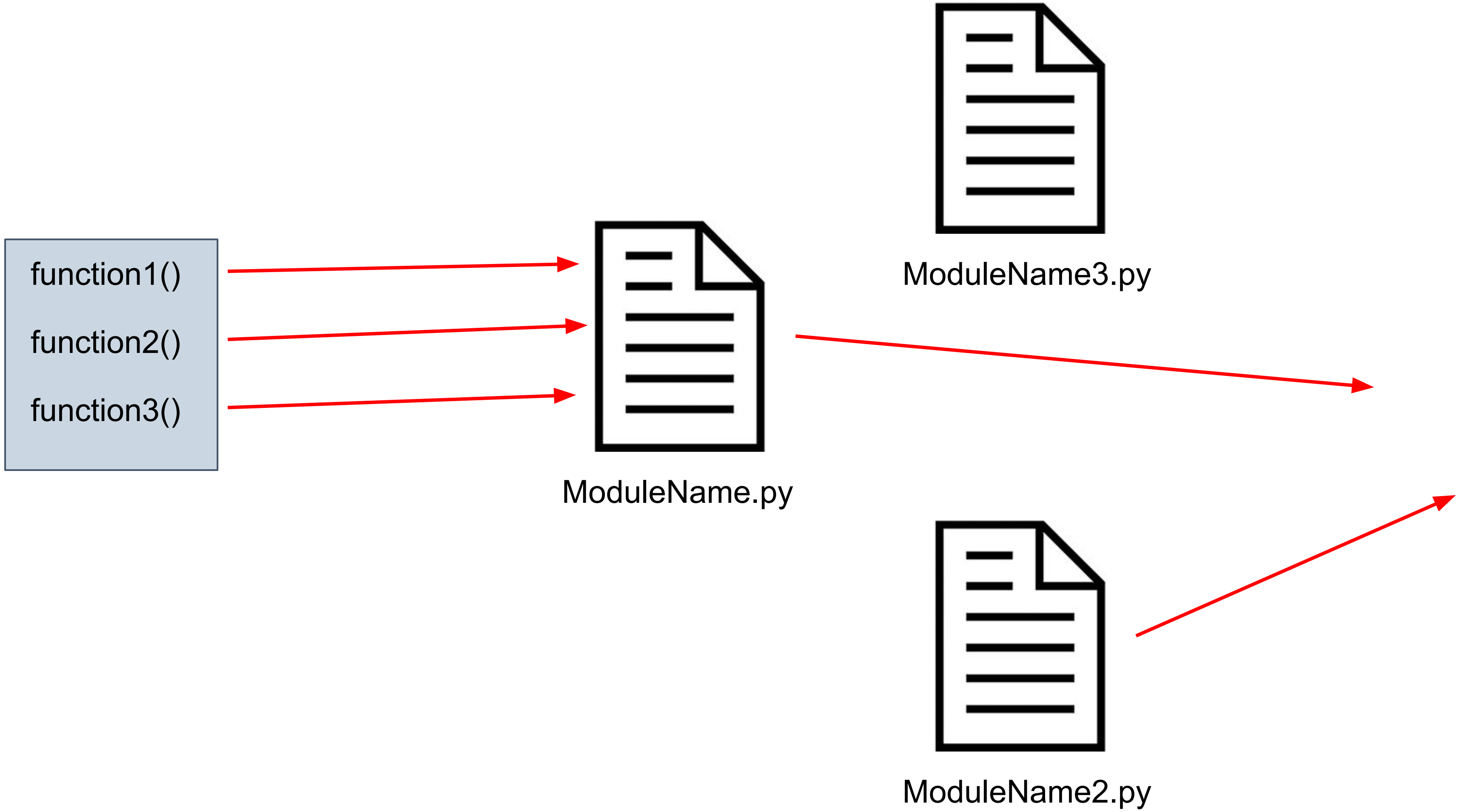
Function, Module and Package



Function, Module and Package



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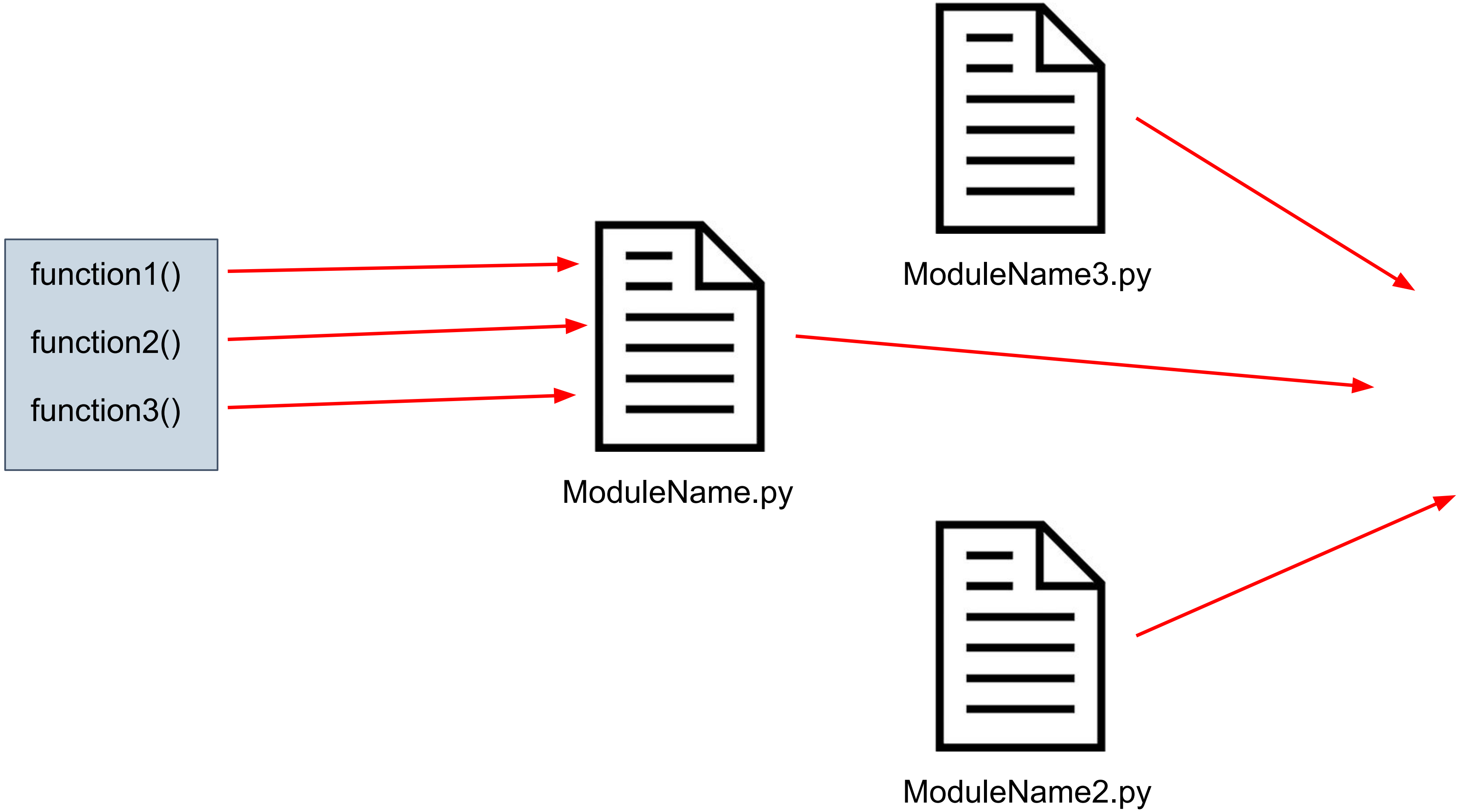
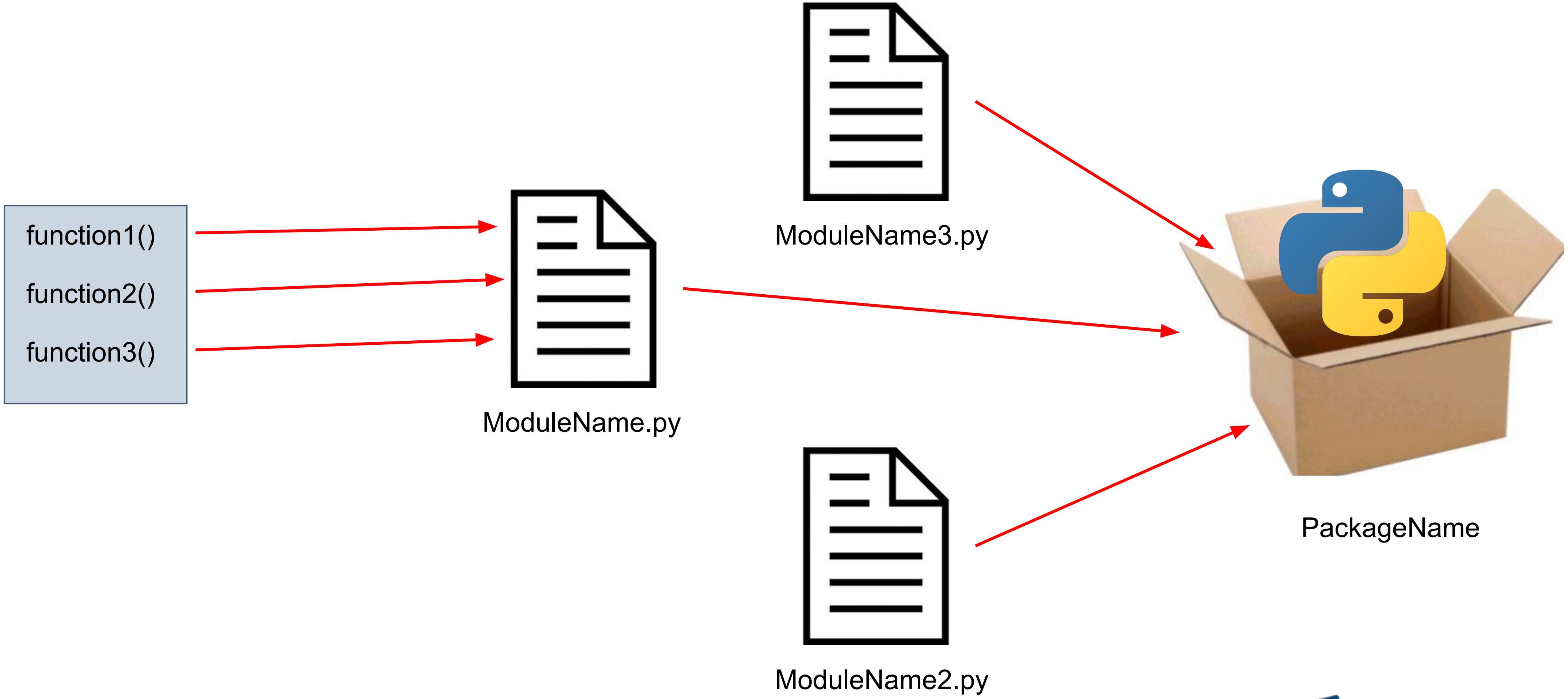
Function, Module and Package



Function, Module and Package



function1()

function2()

function3()

ModuleName.py

ModuleName3.py

ModuleName2.py

PackageName

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Types of Packages in Python

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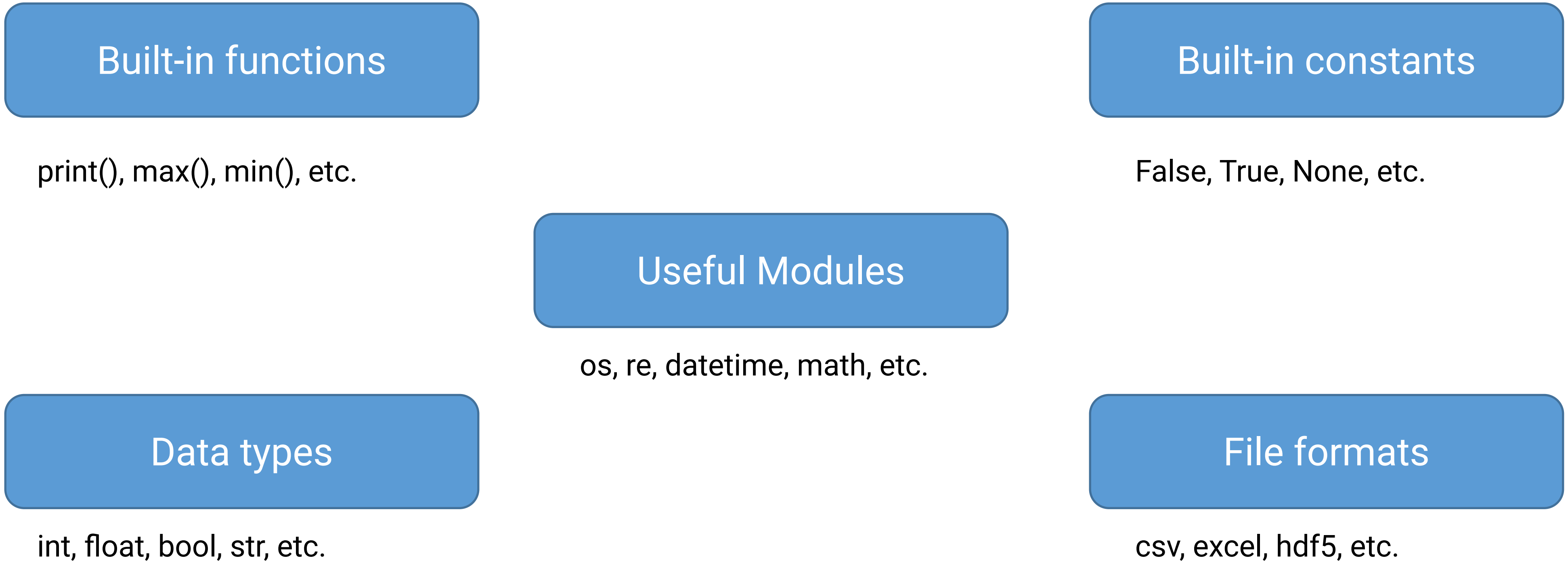
Python Standard Library



Built-in functions

print(), max(), min(), etc.

Built-in constants

False, True, None, etc.

Useful Modules

os, re, datetime, math, etc.

Data types

int, float, bool, str, etc.

File formats

csv, excel, hdf5, etc.

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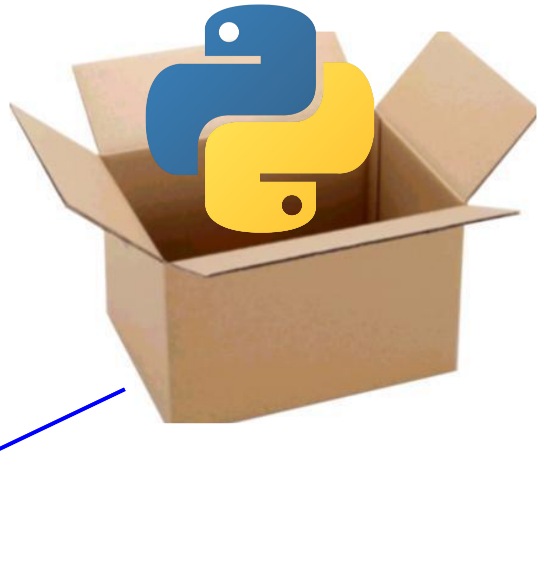
Types of Packages in Python



Python Standard Library

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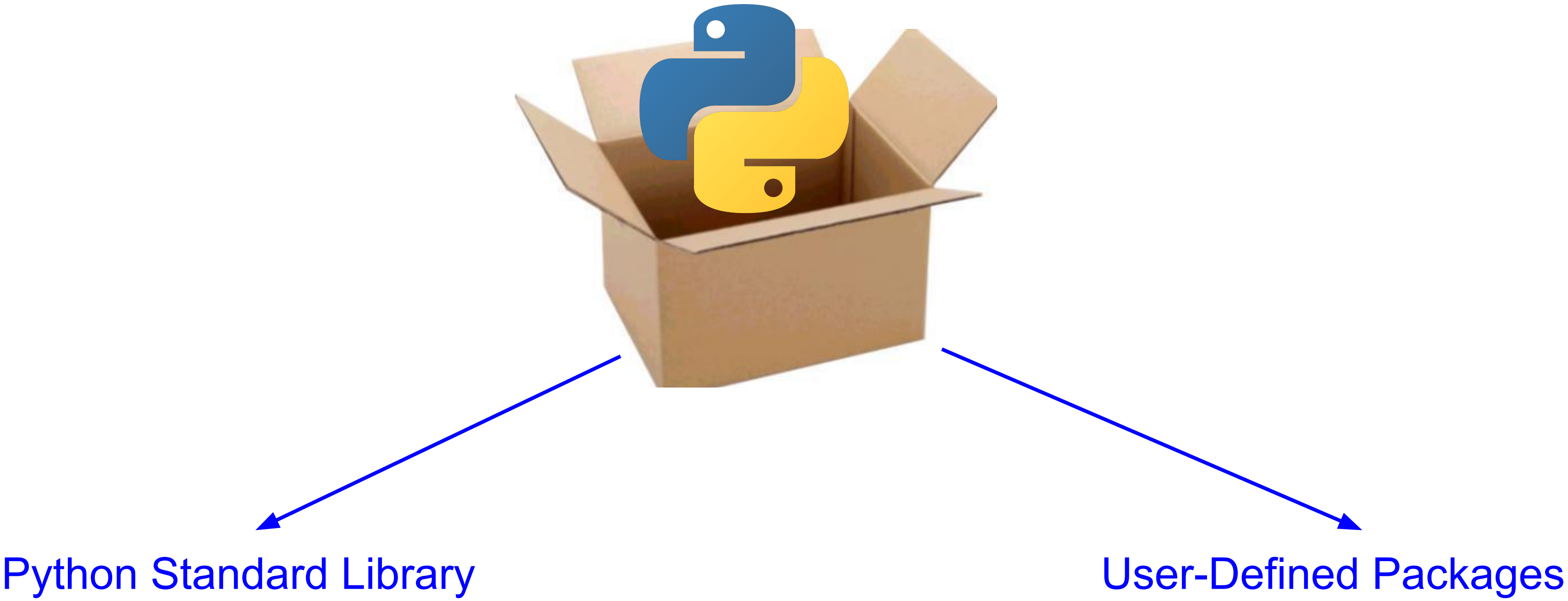
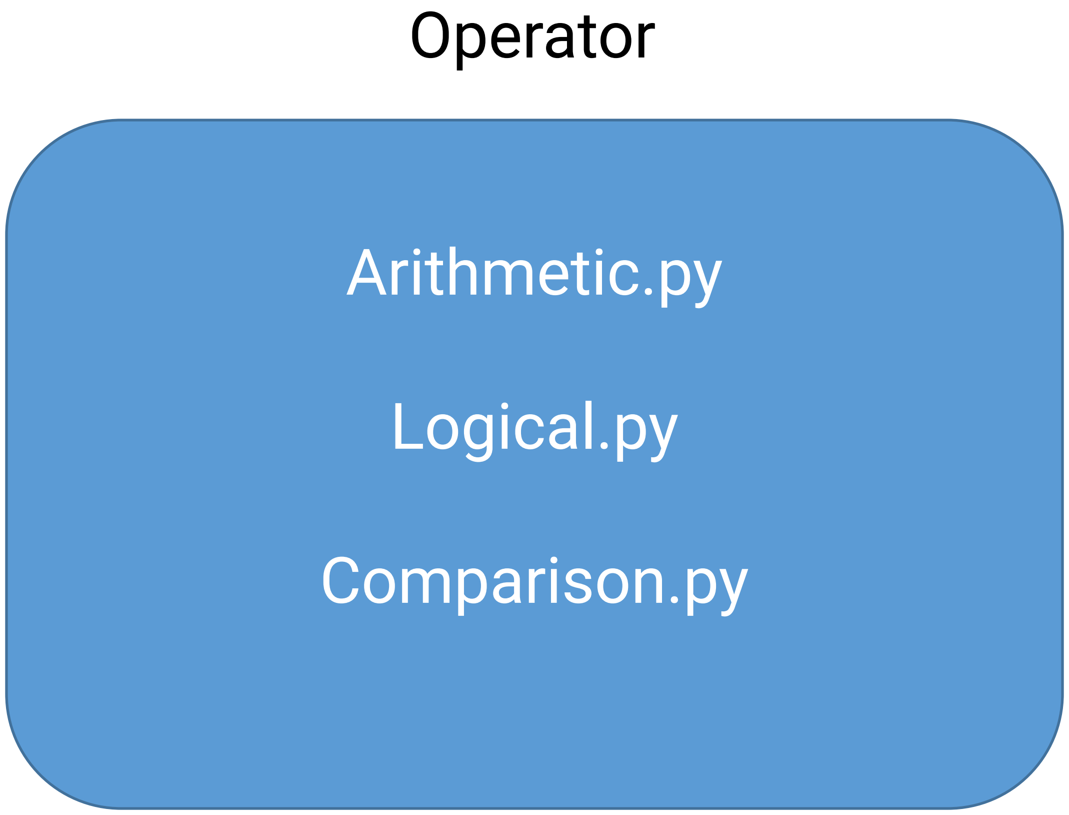
Types of Packages in Python



Python Standard Library

User-Defined Packages

Package



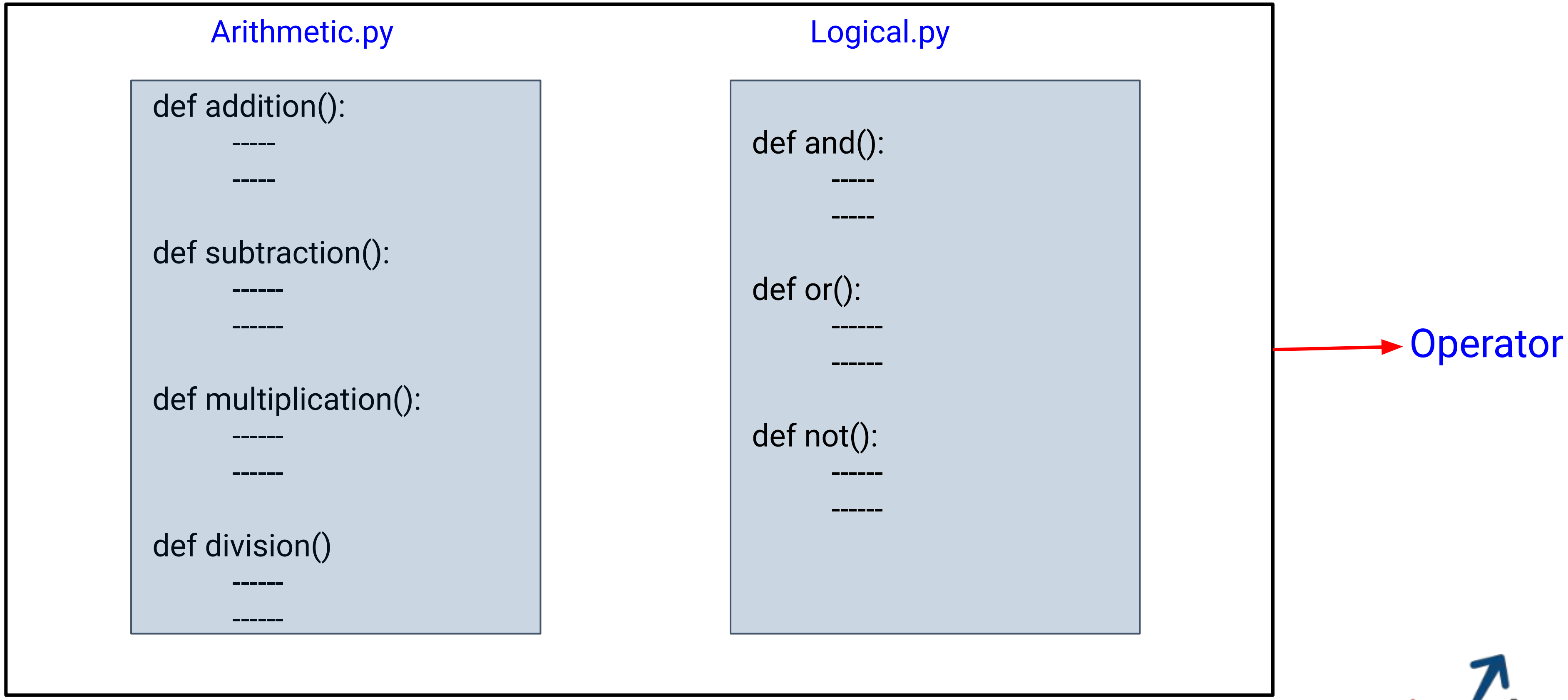
Operator

Arithmetic.py

Logical.py

Comparison.py

Package



Arithmetic.py

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def subtraction():
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def multiplication():
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def division()
        ------
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```

Logical.py

```
def and():
        -----
        -----

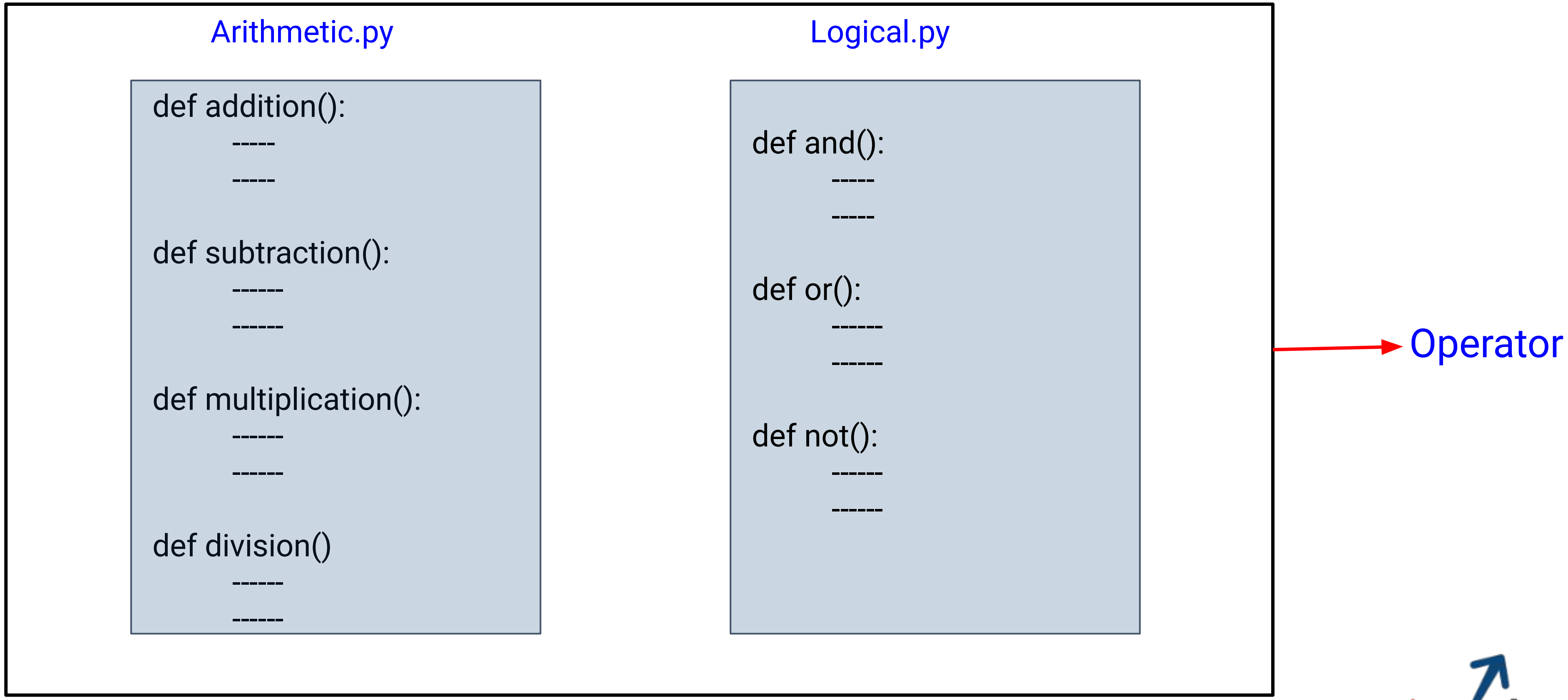
def or():
        ------
        ------

def not():
        ------
        ------
```

Operator

Importing a library (package) in Python

- **How do we import a function from a package? Eg - addition**



Arithmetic.py

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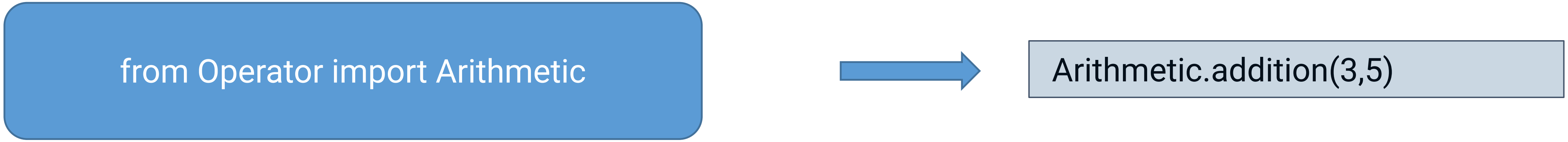
Operator

Importing a library (package) in Python

How do we import a function? Eg - addition



from Operator import Arithmetic

Arithmetic.addition(3,5)

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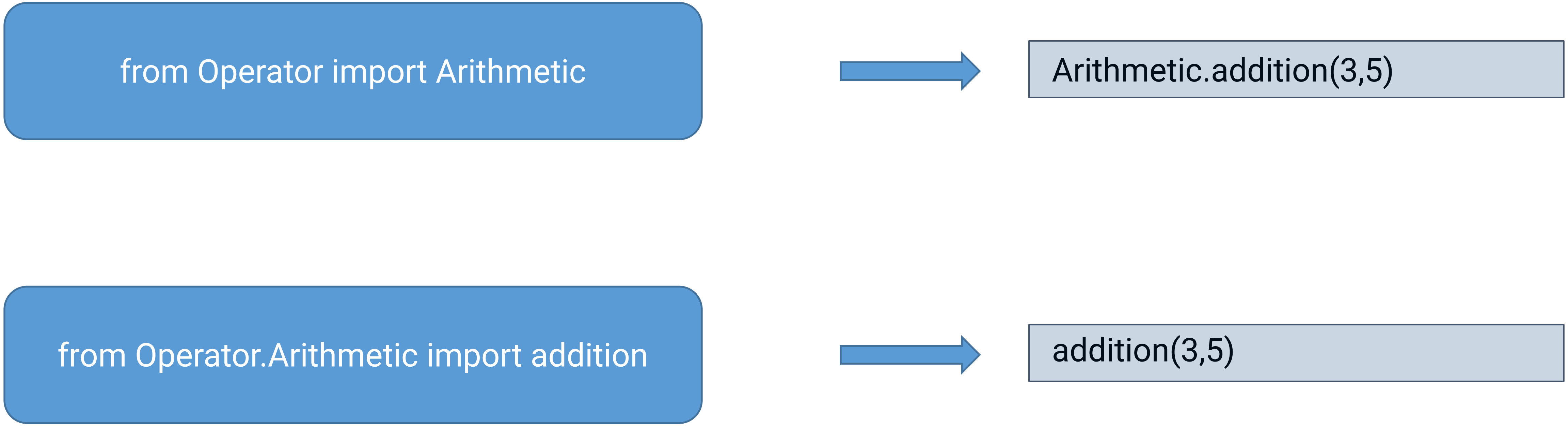
Importing a library (package) in Python

How do we import a function? Eg - addition



from Operator import Arithmetic → Arithmetic.addition(3,5)

from Operator.Arithmetic import addition → addition(3,5)

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Building a Package in Python

Important Libraries for Data Science

NumPy

SciPy.org

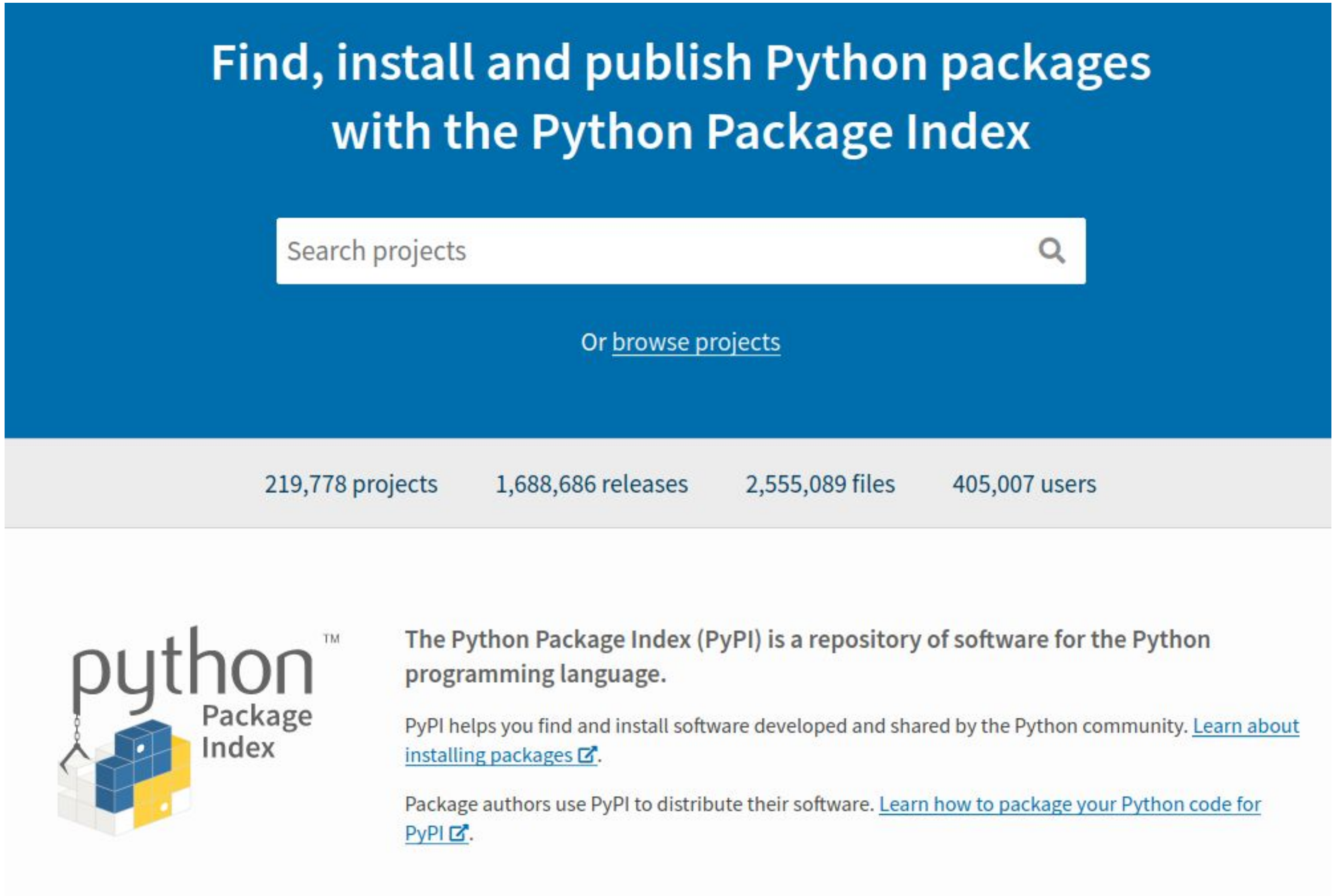
pandas

matplotlib

seaborn

scikit learn

Installing a library (package) in Python



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Thank You

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