Functional Programming

$$f(x) \rightarrow y$$

def square(x):
  $y \ni x**2$
  return y

$$\text{Square}(x) \rightarrow x**2$$

input   Output

$$f(x) \rightarrow x**2$$
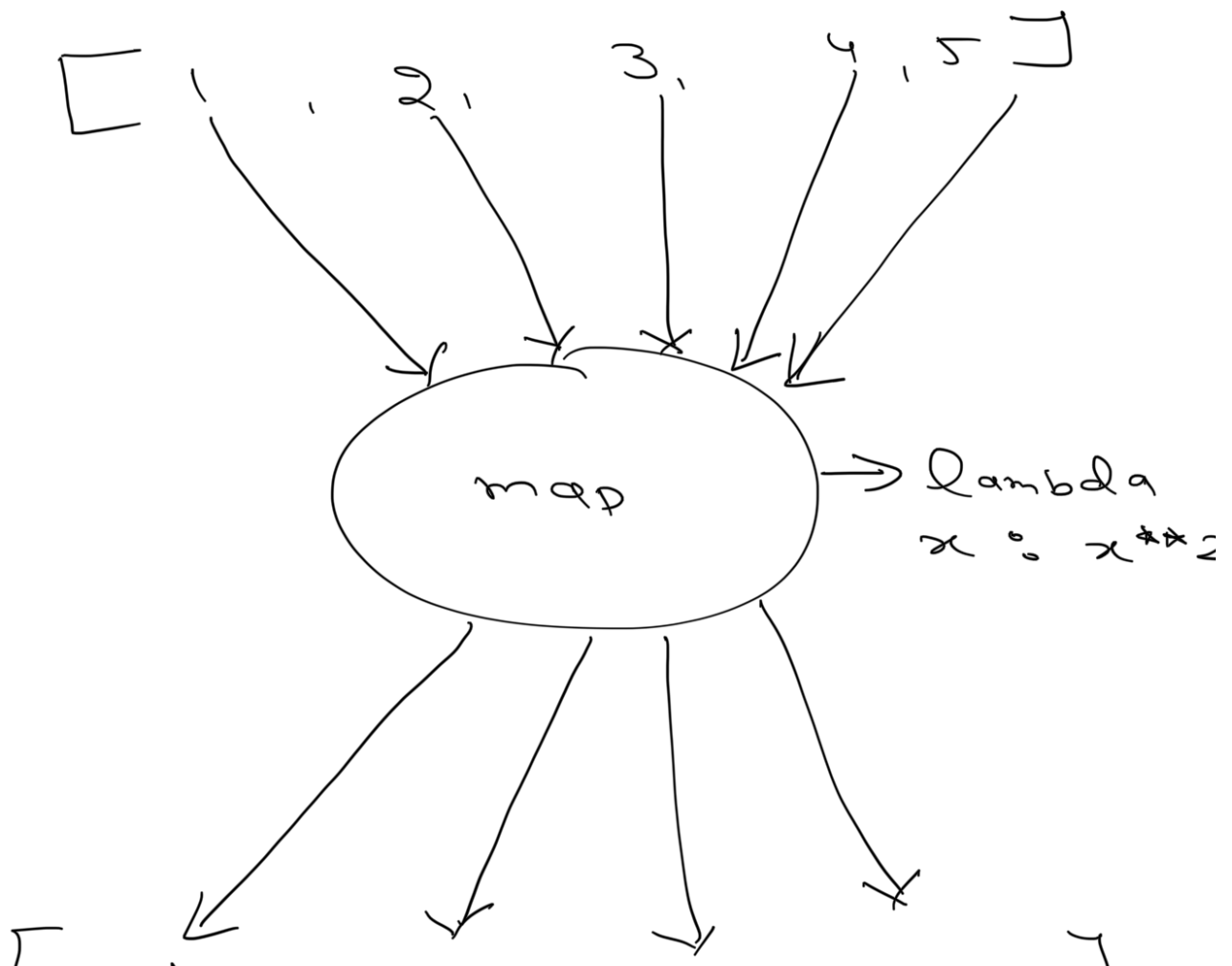

Lambda Function

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def Square (x)

  return $x**2$ output

name

$$\boxed{Square} = lambda \ \boxed{x} : x^{**2}$$

Map

1) Takes a function and an iterable

2) Applies function to each member of iterable

$[\ 1 \ , \ 2 , \ 3 , \ 4 , 5 \ ]$

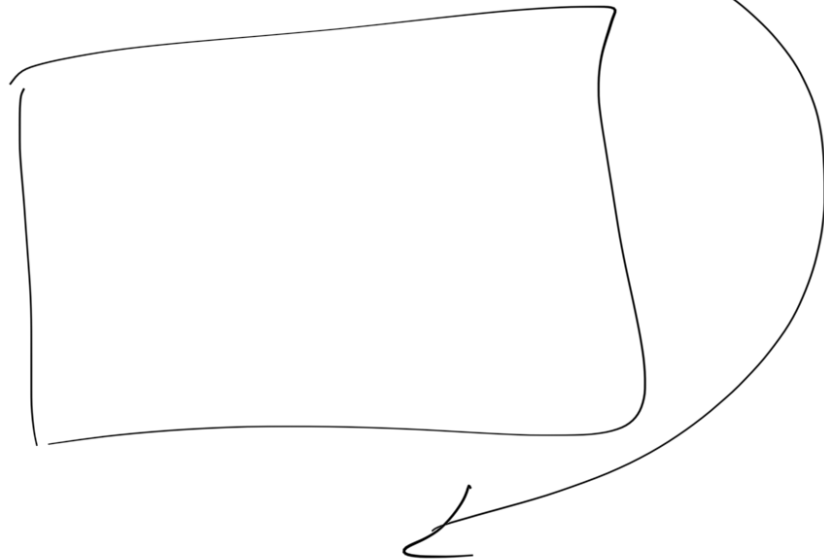map $\rightarrow$ lambda $x : x^{**2}$

$[\ \cdot \cdot \cdot \ ]$

$[1, 4, 9, 16, 25]$

→ input Size : N

→ Output : N

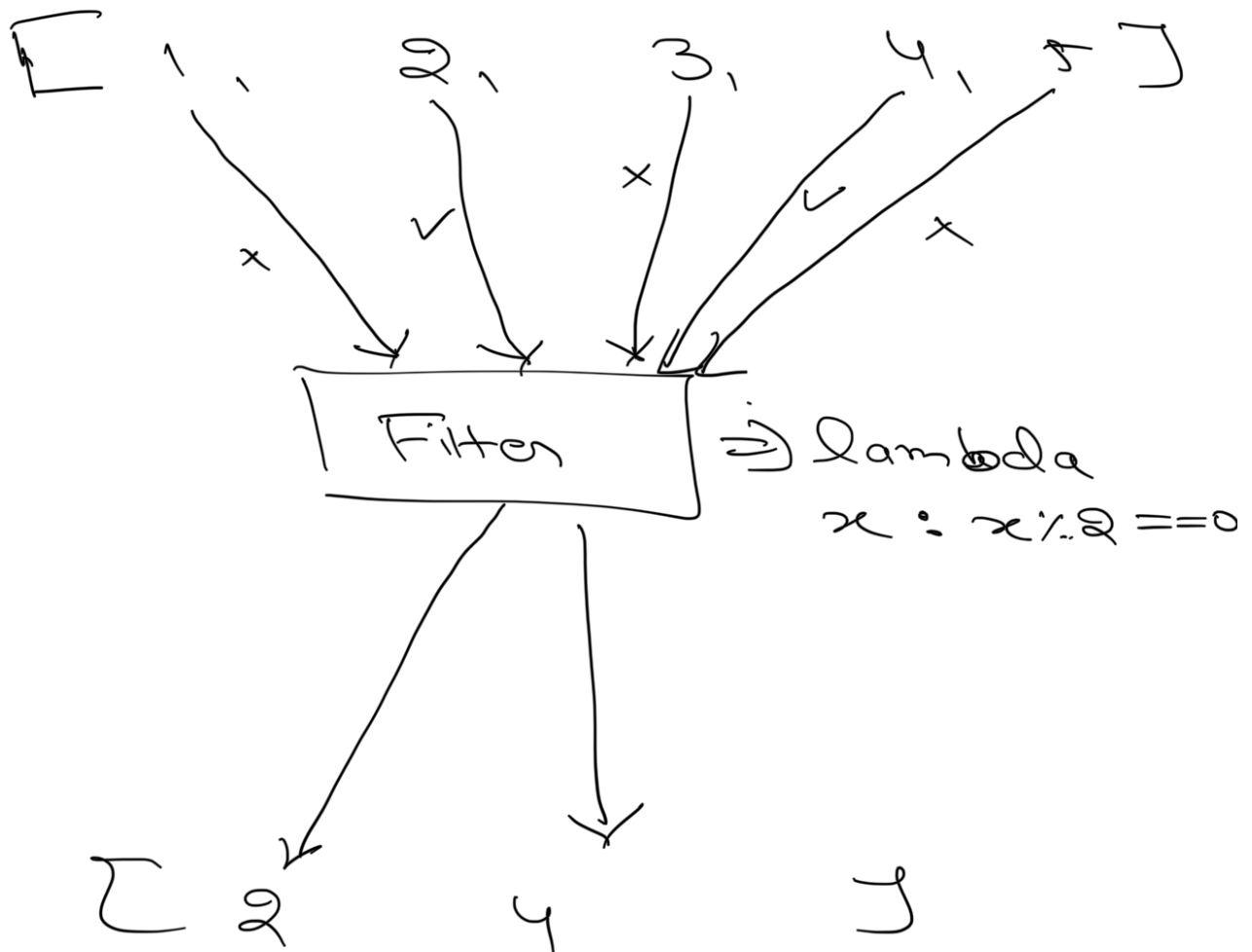is it mandatory to pass lambda functions only to MAP ?

def some_funct :

$$map(some\_func, iterable)$$

--- × Filter ×---

⇒ Takes a function which returns True or False

⇒ Takes an iterable

⇒ Returns members of iterable which satisfy the function

$$[\ 1,\ \ 2,\ \ \ 3,\ \ \ 4,\ \ 4\ ]$$

× ✓ × ✓ ×

| Filter | ⇒ lambda
          $x : x \% 2 == 0$

$$[\ 2\ \ \ 4\ \ \ \ \ \ ]$$

2) Input Size $\Rightarrow$ N

1) Output $\Rightarrow$ $\le$ N