

## Conventions in Python

function / variable

Snake Casing

one - two - three - four

get\_location\_for\_car()  
tax\_amount

Class

Pascal Casing

OneTwoThreeFour  
BankDetails  
MyPoint

# String Interpolation in Python

$$a = 10$$

f "Value of a is {a}", value of b is {b}:

$\mathcal{A} \rightarrow \text{space}$

$\rho$  if  $x$  Condition :

۴۷

1

9

else;

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8

1

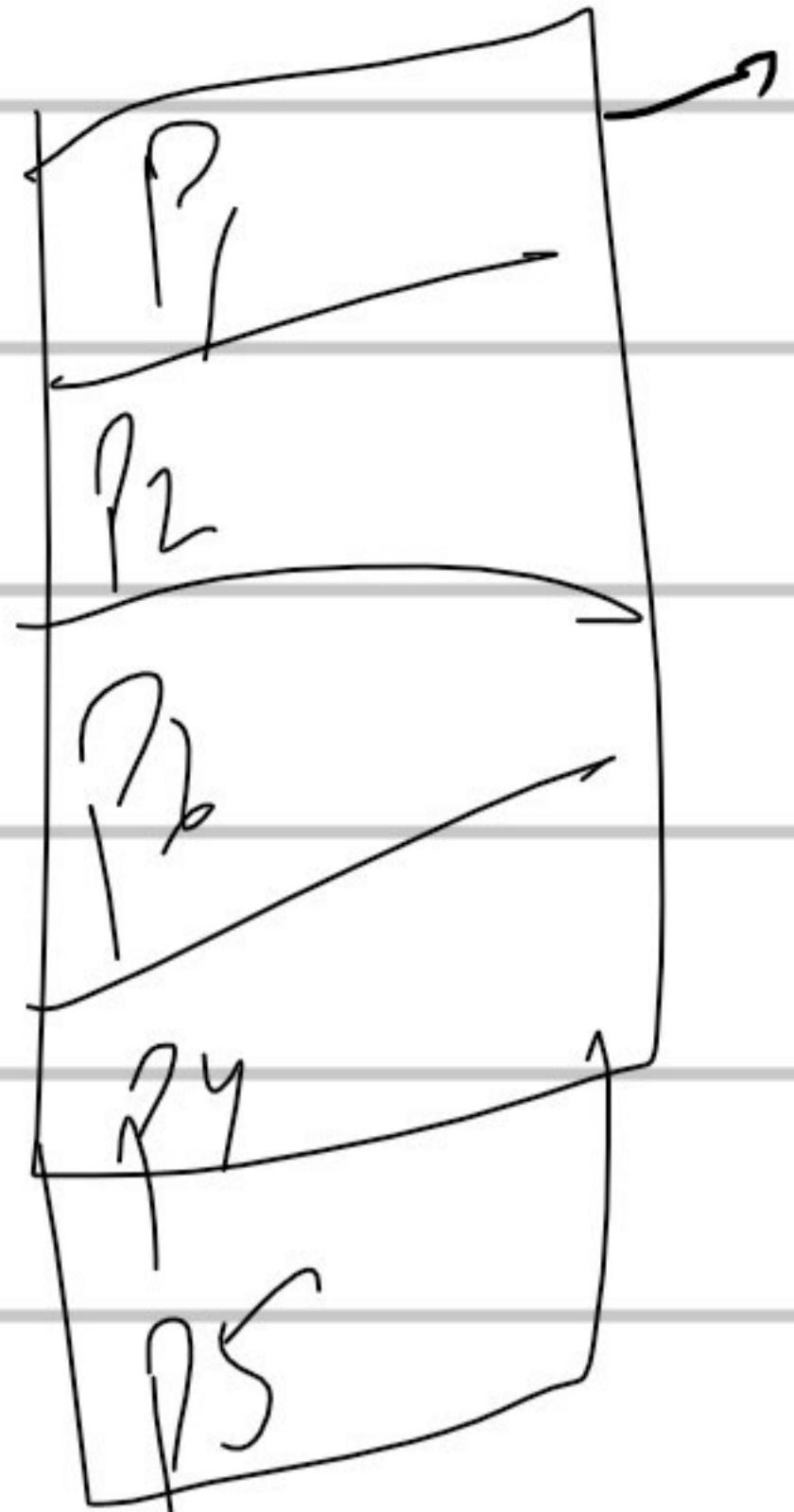
group of related statements  
which performs a specific task

COPE ON DEMAND

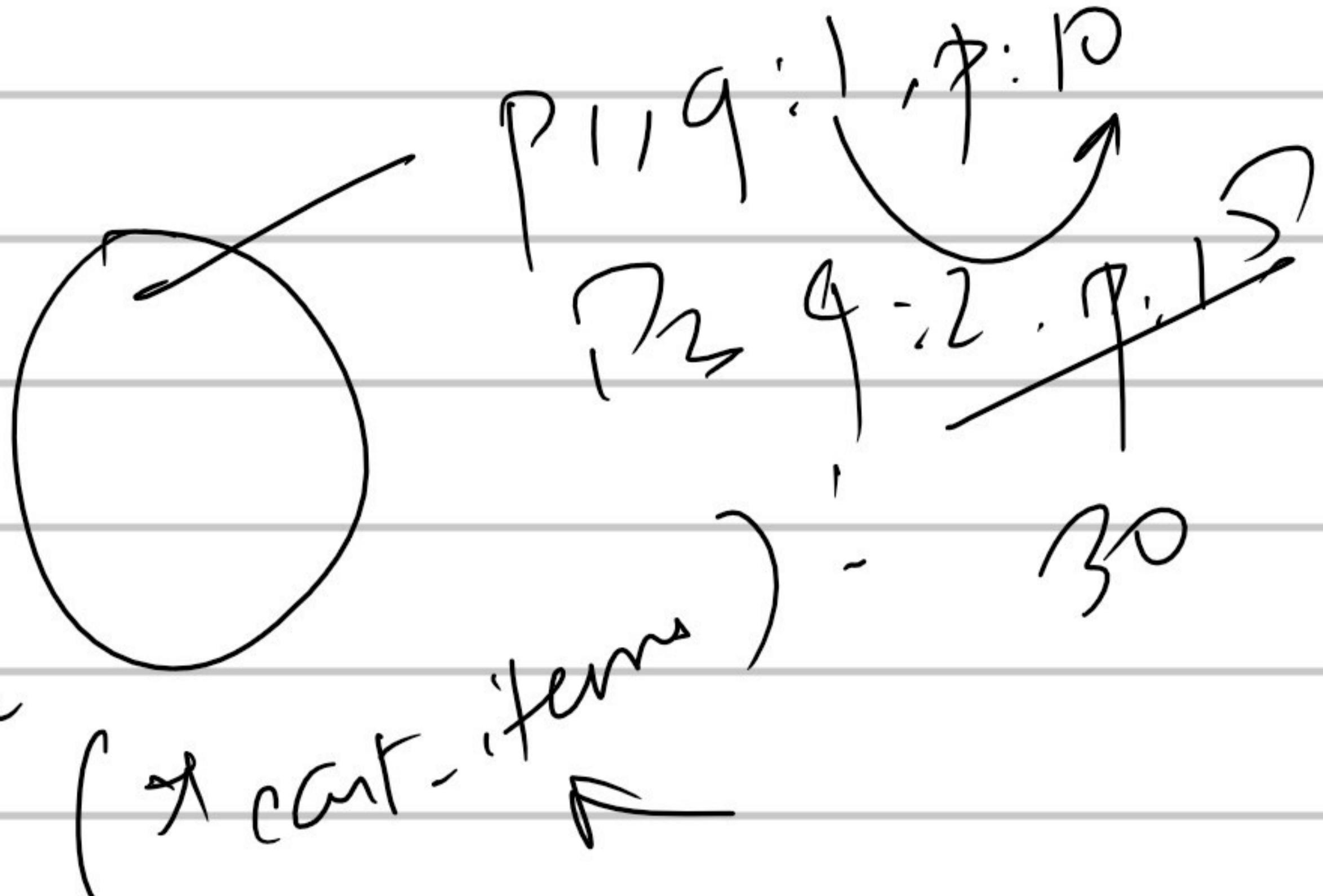
`def function-name (parameters):`

statement(s)

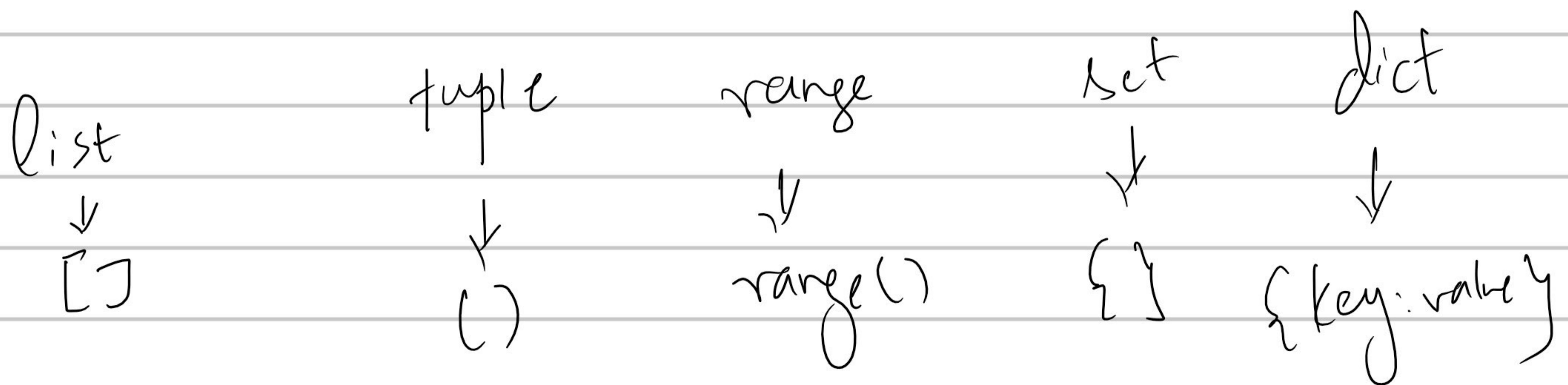
return `someValue`,



function calc<sub>cartesian</sub>( $\lambda$  cart-item)



## Data Structures

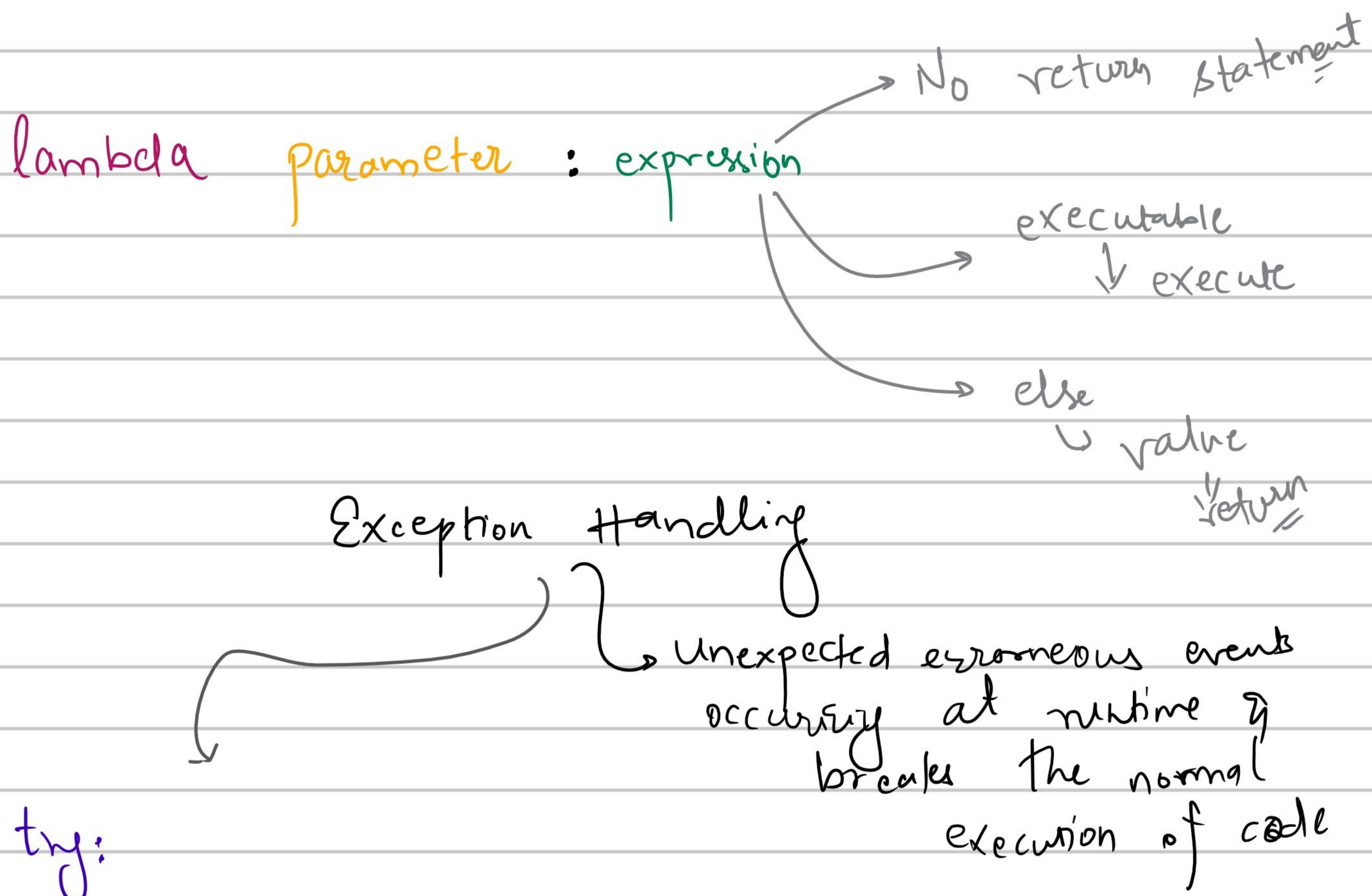


# Lambda Functions

↳ anonymous functions

↳ function w/o name

## Structure of a lambda function



except Error:

Package

eCommerce

# \* Regex \*

zartab@codewith.com ✓  
 zartab @ abc@xyz.com ✗  
 zartab-n@gmail.com ✓

Regex

## Regular Expressions

find | match  
 a pattern in a string

BASIC

ADVANCED

Symbol	What it represents?
*	Zero or more occurrences of the character that precedes this asterisk
.	A wild card that represents any character <i>(alphanumeric)</i>
\s	Represents whitespace
[pqr]	A single character which can be either a 'p' , 'q' or an 'r'
[a-d]	A single character that falls in the range 'a-d'
[^pq]	A single character that is neither 'p' nor 'q'
^pattern	^ is an anchor tag that represents the beginning of line
pattern\$	\$ is an anchor tag that represents the end of line

1

Understand the Requirement: What needs to be included or excluded

2

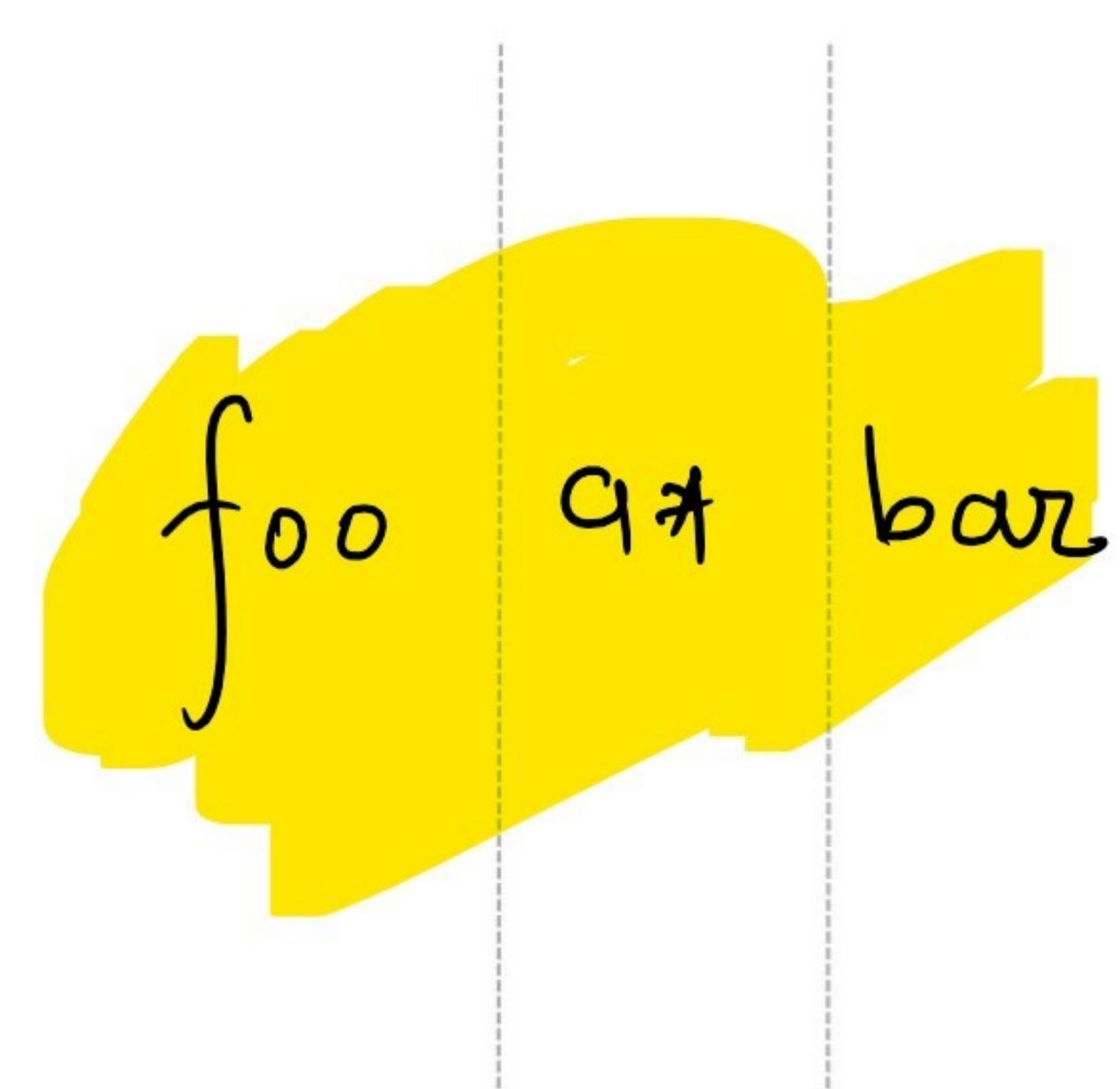
Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- fooaaaabar
- fooabar
- foobar
- fooaabbar
- fooxxbar
- foxbar

- foo aaaa bar
- foo a bar
- foo bar
- foo aa bar



1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

foobar

fooxbar

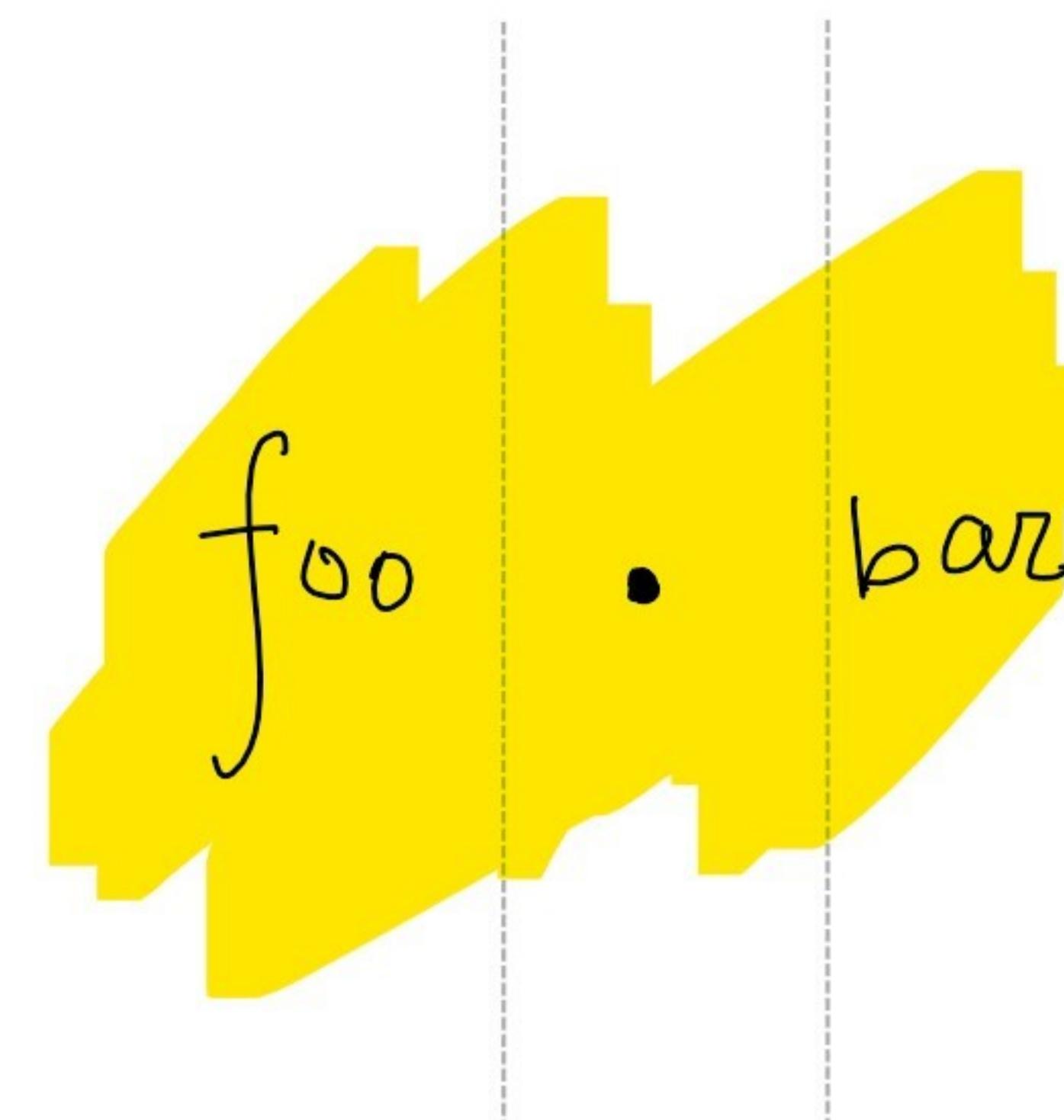
baryfoo

foobar

fooxybar

fooçbar

<input checked="" type="checkbox"/> foo	a	bar
<input checked="" type="checkbox"/> foo	x	bar
<input checked="" type="checkbox"/> foo	c	bar



. - Single wildcard . Can represent only ONE character [any] in single position

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

foobar

barfoo

fooabcbar

fooxcbar

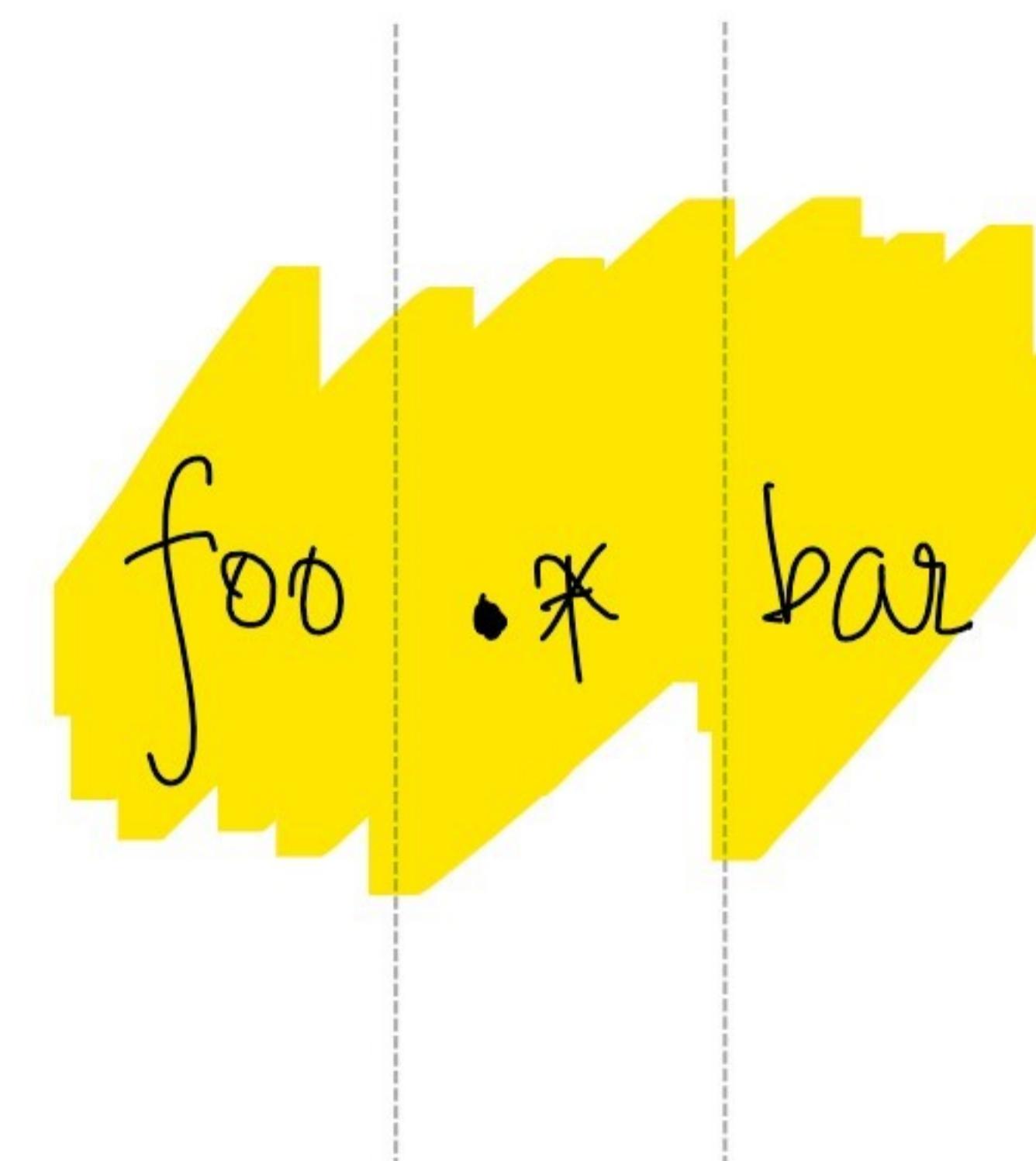
barcbyfoo

foozbar

barafoo

barabfoo

<input checked="" type="checkbox"/> foo	/	bar
<input checked="" type="checkbox"/> foo	abc\	bar
<input checked="" type="checkbox"/> foo	xc \	bar
<input checked="" type="checkbox"/> foo	z \	bar



.\* - Zero or more occurrences of wildcard, which means zero or more occurrences of any character

**1**

Understand the Requirement: What needs to be included or excluded

**2**

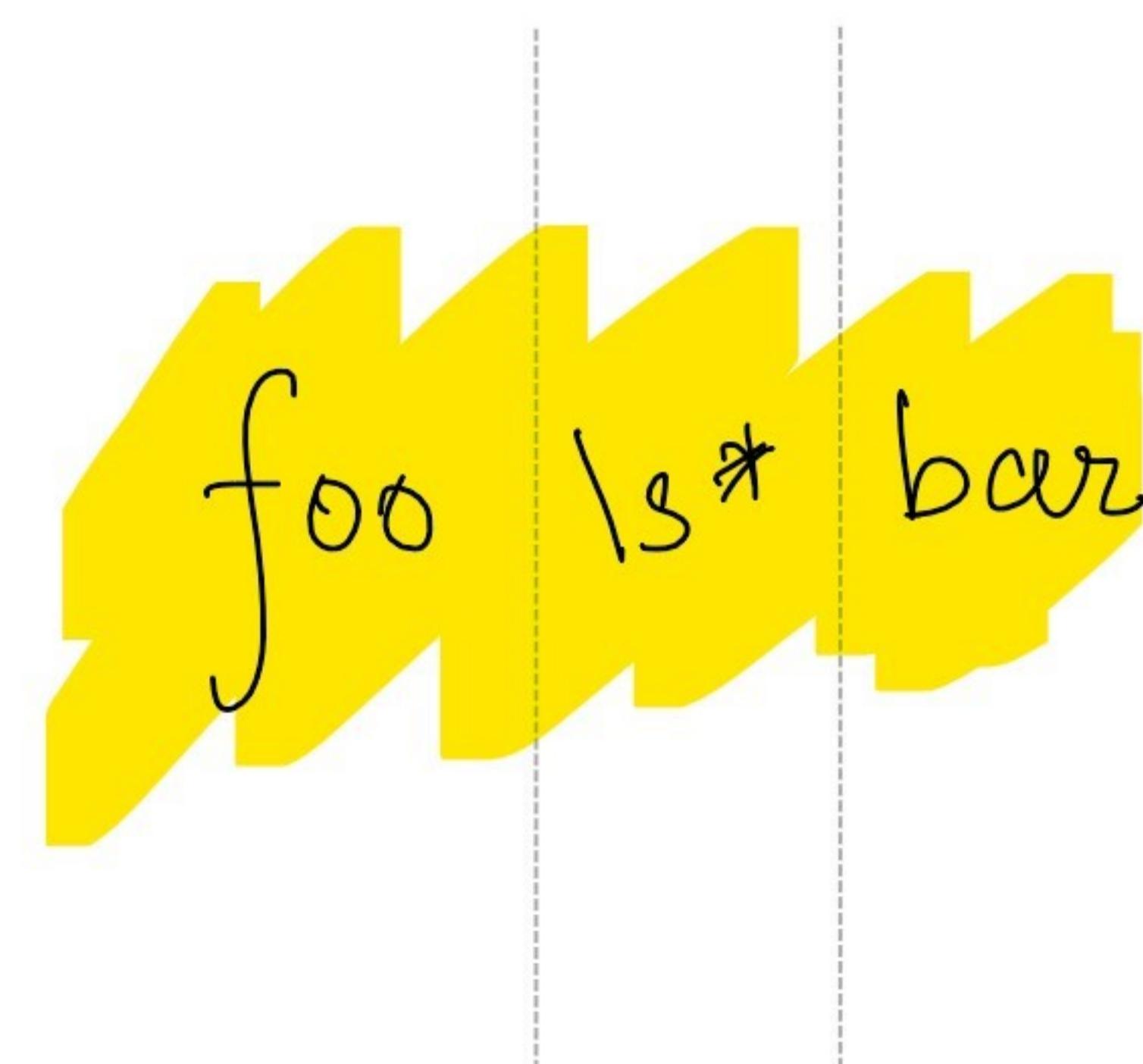
Identify the pattern in inclusion or exclusion list

**3**

Final Regular Expression

fooxxxbar  
 foo bar  
 foobar  
 fooxbar  
 fooyyybar  
 foo bar  
 foo bar  
 foobar  
 fooyyybar

foo <3 spaces> bar  
 foo <1 spaces> bar  
 foo <6 spaces> bar  
 foo <0 spaces> bar



\s represents whitespace. \s\* represents zero or more occurrence of whitespace

**1**

Understand the Requirement: What needs to be included or excluded

**2**

Identify the pattern in inclusion or exclusion list

**3**

Final Regular Expression

foo  
 moo  
 coo  
 doo  
 poo  
 loo  
 boo  
 hoo

f oo  
 c oo  
 l oo

[fcl] oo

[abc] - Character class. One of the character inside the square brackets - a,b or c

1

Understand the Requirement: What needs to be included or excluded

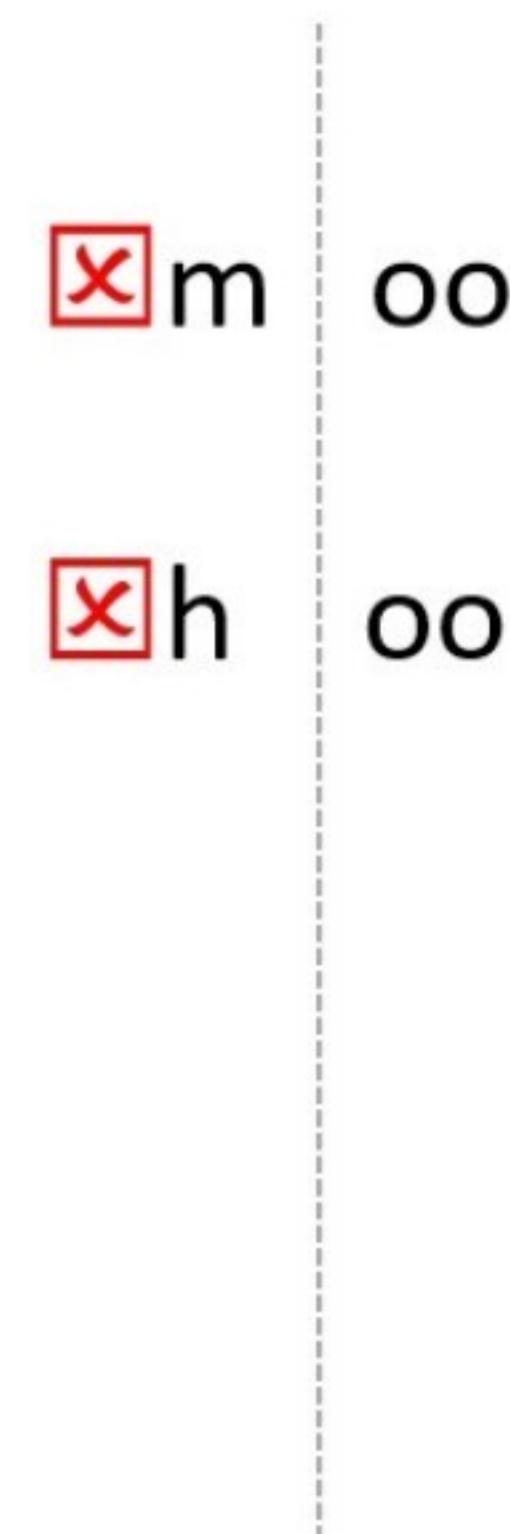
2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- foo
- moo
- coo
- doo
- poo
- loo
- boo
- hoo



[^abc] - Any character EXCEPT any of the one inside the square brackets, in a single

1

Understand the Requirement: What needs to be included or excluded

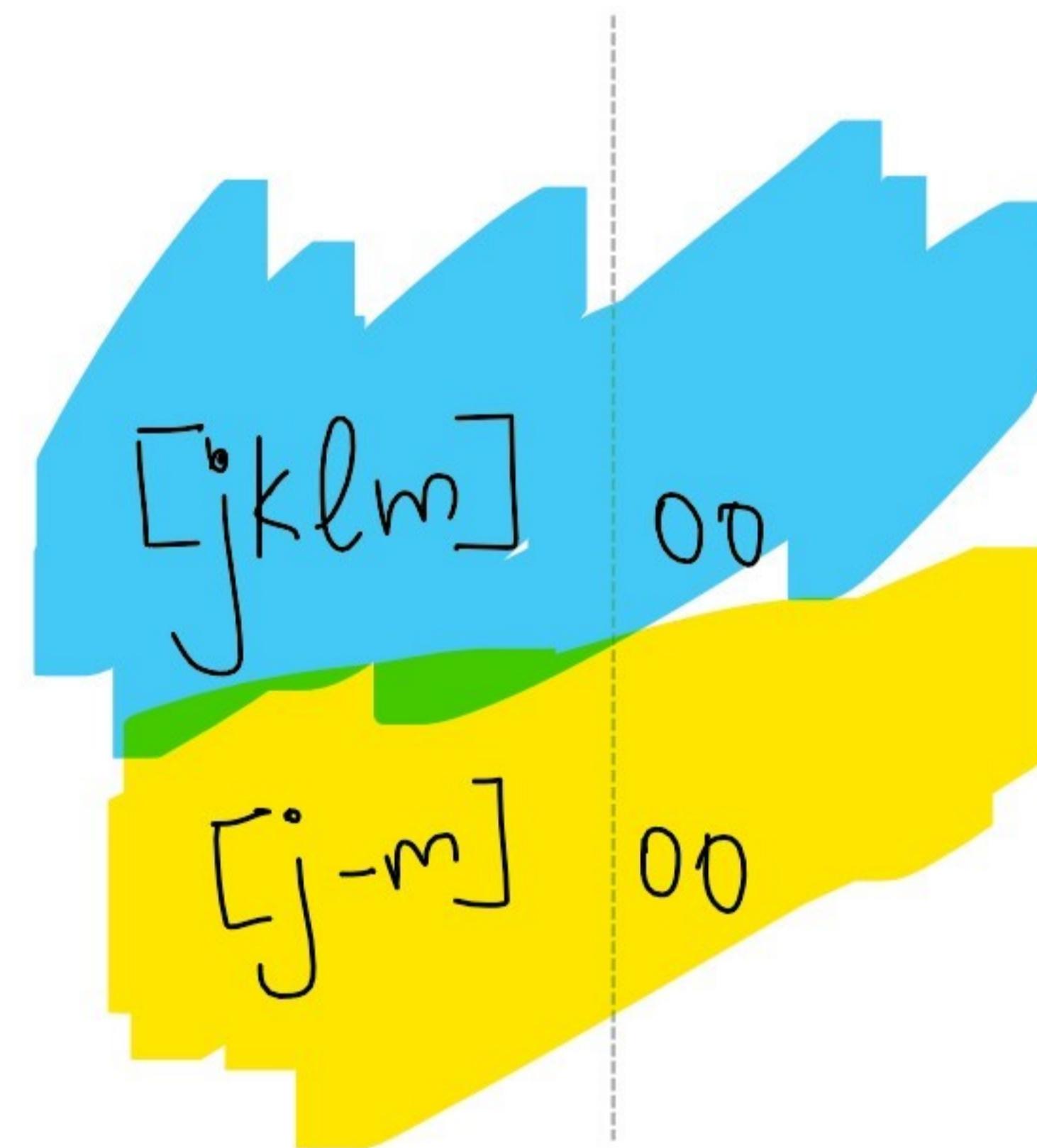
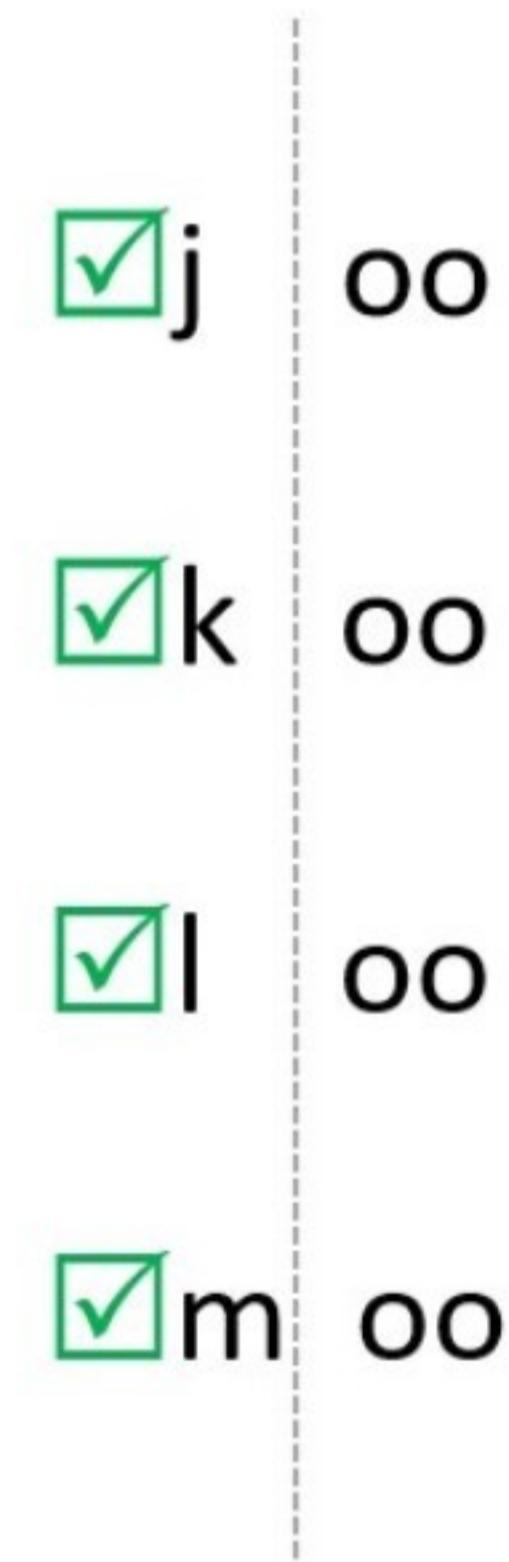
2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- joo
- moo
- koo
- loo
- poo
- zoo
- moo
- hoo



[a-c] - One of the character falling in the range given in square brackets

**1**

Understand the Requirement: What needs to be included or excluded

**2**

Identify the pattern in inclusion or exclusion list

**3**

Final Regular Expression

- joo
- moo
- koo
- loo
- poo
- moooo
- zoo
- hoo

<input checked="" type="checkbox"/> j	oo
<input checked="" type="checkbox"/> k	oo
<input checked="" type="checkbox"/> l	oo
<input checked="" type="checkbox"/> m	oo
<input checked="" type="checkbox"/> z	oo

[j-m-z] oo

**1**

Understand the Requirement: What needs to be included or excluded

**2**

Identify the pattern in inclusion or exclusion list

**3**

Final Regular Expression

- joo
- moo
- Koo
- Loo
- poo
- moooo
- zoo
- hoo

<input checked="" type="checkbox"/> j	oo
<input checked="" type="checkbox"/> K	oo
<input checked="" type="checkbox"/> L	oo
<input checked="" type="checkbox"/> m	oo
<input checked="" type="checkbox"/> z	oo

[j-m]-oo

**[a-cACx]** - One of the character falling in the range given in square brackets OR any of the other choices given in square brackets - a,b, c,A,B,C,x

✓  $x \cdot x \cdot y \cdot y$

✓  $x \cdot x \cdot y \cdot y \cdot y \cdot y$

✓  $x \cdot y \cdot y$

✗  $x \cdot y$

✗  $x \cdot x \cdot y \cdot y$

✗  $y \cdot y \cdot x \cdot x$

$x \cdot x \cdot x$

•

$y \cdot y$

$x \cdot x$

•

$y \cdot y \cdot y \cdot y$

$x$

•

$y \cdot y$

$x^*$   $\backslash \cdot y^*$

$x_1 [ \cdot ] y^*$



1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

x#y

x # y

x:y

x : y

x.y

x . y

x&y

x . y

x%y

x . y

x [#:·] y

If a ‘.’ is inside square brackets, it need not to be escaped

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

x#y

x #, y

x:y

x :, y

x^y

x ^, y

x&y

x , y

x%y

x , y

x [#:^\"] y

If a ‘^ - ’ is inside square brackets, it need to be escaped with backslash

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

x#y

x\y

x^y

x&y

x%y

x # y

x \ y

x ^ y

x [ # \| ^ ] y

If a '\ ' is inside square brackets, it need to be escaped with another backslash

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

foo bar baz  
 bar foo baz  
 baz foo bar  
 bar baz foo  
 foo baz bar  
 baz bar foo

foo bar baz

foo baz bar

^ f o o \* b a z

^ is a placeholder that signifies beginning of line. Inside [] a ^ means negation, but outside brackets it acts as an anchor

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

foo bar baz  
 bar foo baz  
 baz foo bar  
 bar baz foo  
 foo baz bar  
 baz bar foo

baz foo bar

foo baz bar

\* b a z \$

\$ is a placeholder which signifies end of line

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- foo
- bar foo
- baz foo
- bar baz foo
- foo baz bar
- baz bar foo

foo

^ foo \$

^ signifies start of the line ; \$ is a placeholder which signifies end of line

Advanced

Symbol	What it represents?
+	One or more occurrences of the character that precedes + symbol
?	Zero or one occurrence of the character that precedes + symbol
pat1   pat2	Match either the pattern pat1 or pattern pat2
( )	Divides the pattern into groups
{m}	Exactly 'm' occurrences of whatever precedes
{m,n}	At least m and at most n occurrences of whatever precedes

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- 834
- 519
- 4874
- 5
- 89
- 45687
- 25
- 645

^ [0-9][0-9][0-9] \$  
 ^ [0-9][0-9][0-9] \$  
 ^ [0-9][0-9][0-9] \$

^ [0-9]{3} \$  
^ \d{3} \$

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- lion
- tiger
- leopard
- fox
- kangaroo
- cat
- mouse
- cuckoo
- deer

<input checked="" type="checkbox"/> ^	[a-z]{4}	\$
<input checked="" type="checkbox"/> ^	[a-z]{5}	\$
<input checked="" type="checkbox"/> ^	[a-z]{5}	\$
<input checked="" type="checkbox"/> ^	[a-z]{6}	\$
<input checked="" type="checkbox"/> ^	[a-z]{4}	\$

$\wedge [a-z]^{4,6} \$$

$a\{m,n\}$  represents atleast 'm' and atmost 'n' repetitions of whatever immediately precedes this

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- ha
- hahahahaha
- hahaha
- hahahaha
- haha
- hahahahaha
- hahahahahahaha
- hahahahahahahaha

- ha{5}
- ha{4}
- ha{6}
- ha{8}
- ha{9}

$(ha)^{4,9}$

paranthesis is used for grouping and treating as a single entity  
 $\{m,\}$  represents atleast m repetitions of whatever precedes

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- fooaaaabar
- fooabar
- foobar
- fooxxxbar
- foobar

<input checked="" type="checkbox"/> foo	aaaa	bar
<input checked="" type="checkbox"/> foo	a	bar
<input checked="" type="checkbox"/> foo	aa	bar

foo at bar

a+ One or more occurrences of 'a'

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- https://website
- http://website
- httpss://website
- httpx://website
- httpxx://website

http s ://website  
 http ://website

http s? //website

a? Zero or One occurrence of 'a'

1

Understand the Requirement: What needs to be included or excluded

2

Identify the pattern in inclusion or exclusion list

3

Final Regular Expression

- redwood
- logwood
- sapwood
- rosewood
- plywood
- teakwood

log  
 ply

wood  
 wood

(ply|log) wood

(a|b) represents either a or b, where a and b can be multi character strings

## Email Pattern

1. It should have one @ symbol in between
2. Before @ it can be any number of a-z,A-Z, \_,.
3. After @ there should be minimum one number of a-z,A-Z,0-9,-
4. After @ and previous combination there should be minimum one period(.) sign
5. It should end with either com,org or net

## Indian Mobile Number Pattern

1. It should have 10 numbers
2. Starting number should be either 7,8, or 9

# Object Orientation

```
numbers = [1, 2, 3, 4, 5]
```

```
print(type(numbers))
```

```
numbers.append(6);  
numbers.fly(); x
```

<class 'list'>

↳ blueprint of what all  
things a variable which belongs  
to the list can do.

because fly() is not defined  
inside class list.

point

- draw()
- move()
- get\_distance()

cart •

- add()
- remove()
- get\_price(product)

Class → template/blueprint which defines the features an object will hold.

Object → instance of class

Class → Human

Object → John, Mary, Elizabeth, Tom

class Point:

def draw(self):  
    print("Draw")

reference to the  
current object

variables will be  
assigned to  
self

not a keyword

it is compulsory to write  
a self referring object to be  
the first parameter of  
function





















