

# String & Pattern

## steps

2

- Q1 Fig out how rows are there E. Start a for loop till no. of rows.

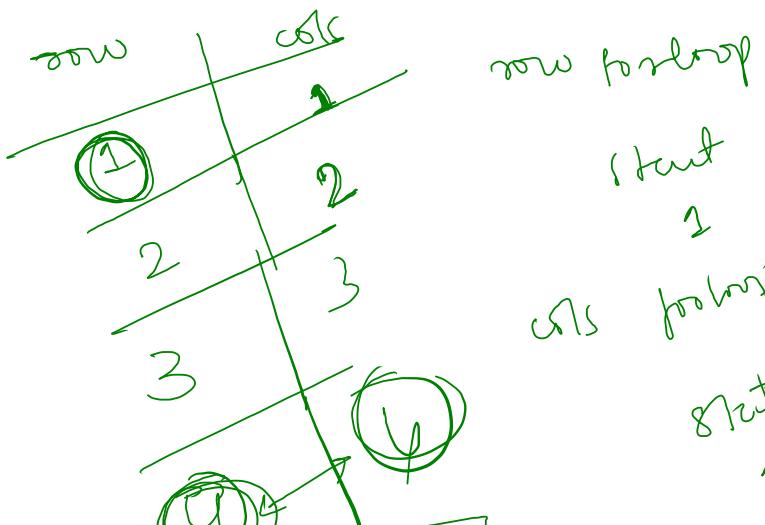
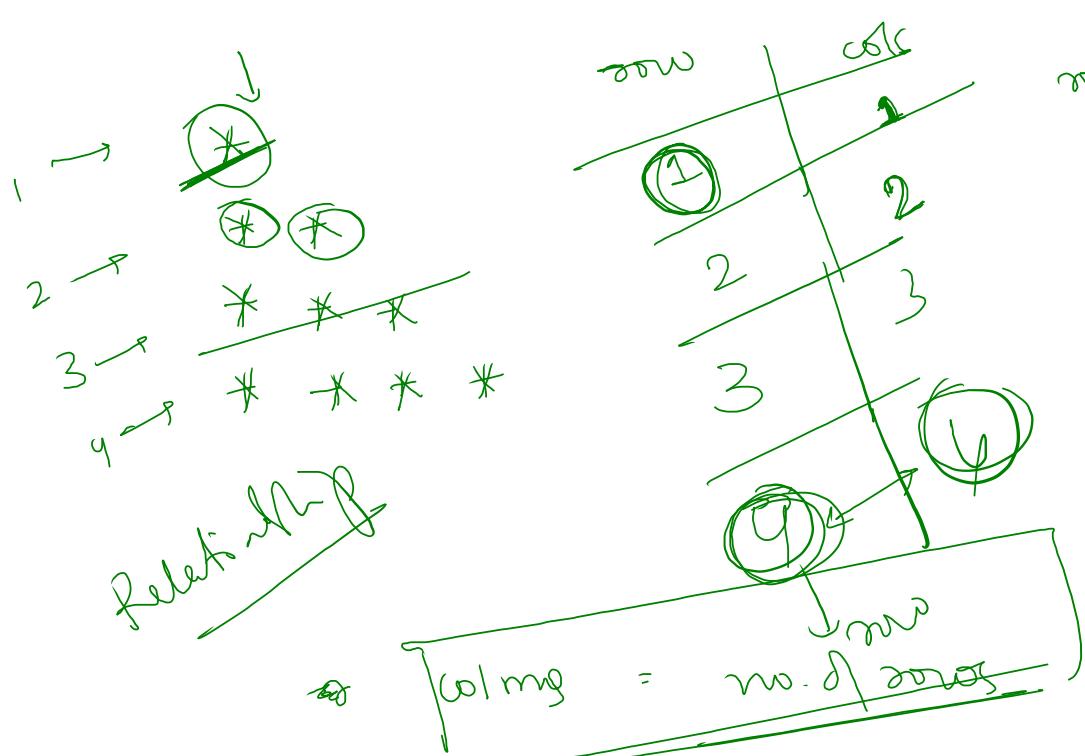
-  Fig out how many cols are there  
& Start a for loop even for  
the columns.

If no. of  $\omega$ 's are dynamic

then find out a solution

but the rows & cols)  
pattern. formula becomes

terminating for end of col? for loop



row for loop

start

1

cols for loop

start

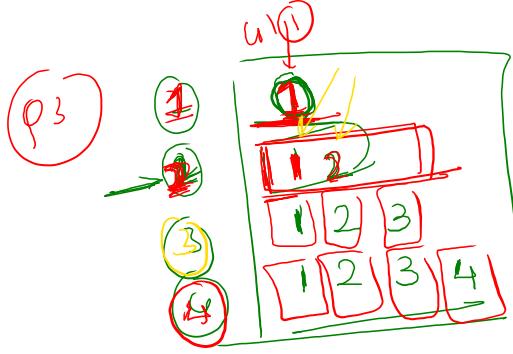
1

ends  
(4) indexed

and

?

rows



row = 4

start for  $\textcircled{1} \rightarrow \underline{\textcircled{4+1}}$

cols (dynamic)

find out ~~Relationship~~ b/w rows

columns fr ~~loop~~  
for  $\textcircled{1} \rightarrow \textcircled{2}$  rows

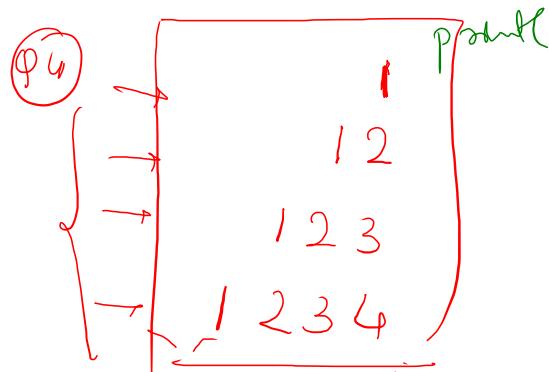
total rows :  $\textcircled{4} - 1 = 3$

$$\begin{array}{c|cc} & c & \\ \textcircled{1} & 1 & 1 \\ 2 & 2 & 2 \\ 3 & 3 & \\ 4 & 4 & \end{array}$$

$\textcircled{4} - 2 \Rightarrow 2$

$\textcircled{4} - 3 \Rightarrow 1$

$\textcircled{4} - 4 \Rightarrow 0$

$$\begin{array}{c|cc} & 0 & 1 \\ \textcircled{1} & 1 & \textcircled{3} \\ 2 & 2 & 2 \\ 3 & 3 & \\ 4 & 4 & \end{array}$$


for spaces

extra for loop for  
spaces



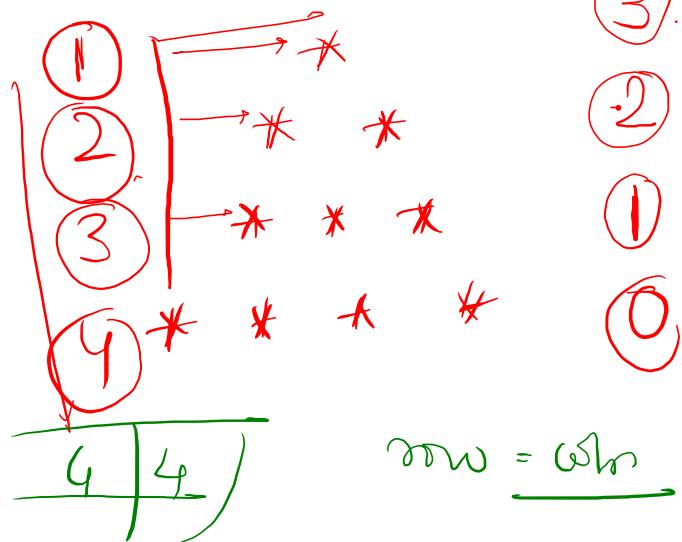
④ space required  
 $\text{totalrows} - \text{current} = \text{space for } = 1 \rightarrow \text{total\_current} + 1$

new loop for 1 to 5+1

old loop for (1 → ?)

$\text{for } i \rightarrow 4$   
 $\text{for } i \rightarrow ?$

$\text{for } i \rightarrow c$	$\text{for } i \rightarrow ?$
1   1	?
2   2	for $i=1 \rightarrow$
3   3	
4   4	
5   4	



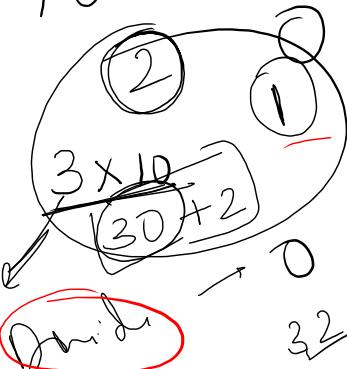
2

32



$$\cancel{3+2+1} \quad 12/10$$

$$+ 3' + 2 \\ \hline 31$$



$$12\cancel{48} \quad 1/3/10$$

$$- 9 \quad \underline{- 12}$$

$$3/1$$

$$12/10$$

$$\cancel{1/10} \quad \rightarrow \text{dienlv}$$

$$\checkmark \xrightarrow{\text{Fermat}} 123/10$$

$$\checkmark \text{Drei}$$

$$12/10$$

$$\checkmark \text{Fermat} \quad 128/10$$

$$12/10$$

$$32 \cancel{* 10} + 1 \quad \cancel{320} + 1 \quad \checkmark \text{Drei} \quad \checkmark \text{Fermat} \quad 10/10$$

$$\downarrow \text{lockt!} \quad \times 10 + 321$$

~~4/4/4~~

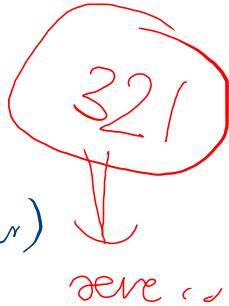
$$5 + 4 + 9 = 544$$
$$5 \times 10 + 4 = 544$$
$$5 \times 10 + 4 = 544$$

## Reversing a Number

Ex) 123

Step 1 → Remainder  $\underline{123} \text{ mod } 10$  = 3 = ~~3~~0m (Remainder)  
 → Divide the num by 10  $123/10$  = 12 (Quotient)  
 → reverse \*10 =  $3 \times 10 = \underline{30} \times 10.$

## | Palindrome |



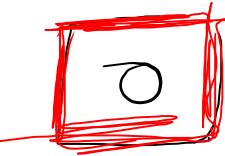
Remainders of remaining num  $12 \text{ mod } 10 = \underline{2}$

Divide the number by 10  $12/10 = \underline{1}$

→ reverse + remainder =  $30 + 2 = 32$

reverse  $\times 10 = 320$

Remainder 1 of 10 → 1

Divide by 10 1/10 → 

result = result + rem ← 320 + 1

321

## Strings in Python

a = "Hello" point & show ["Hello \t"]

Raw string (%)

~~#~~ Strings are Immutable