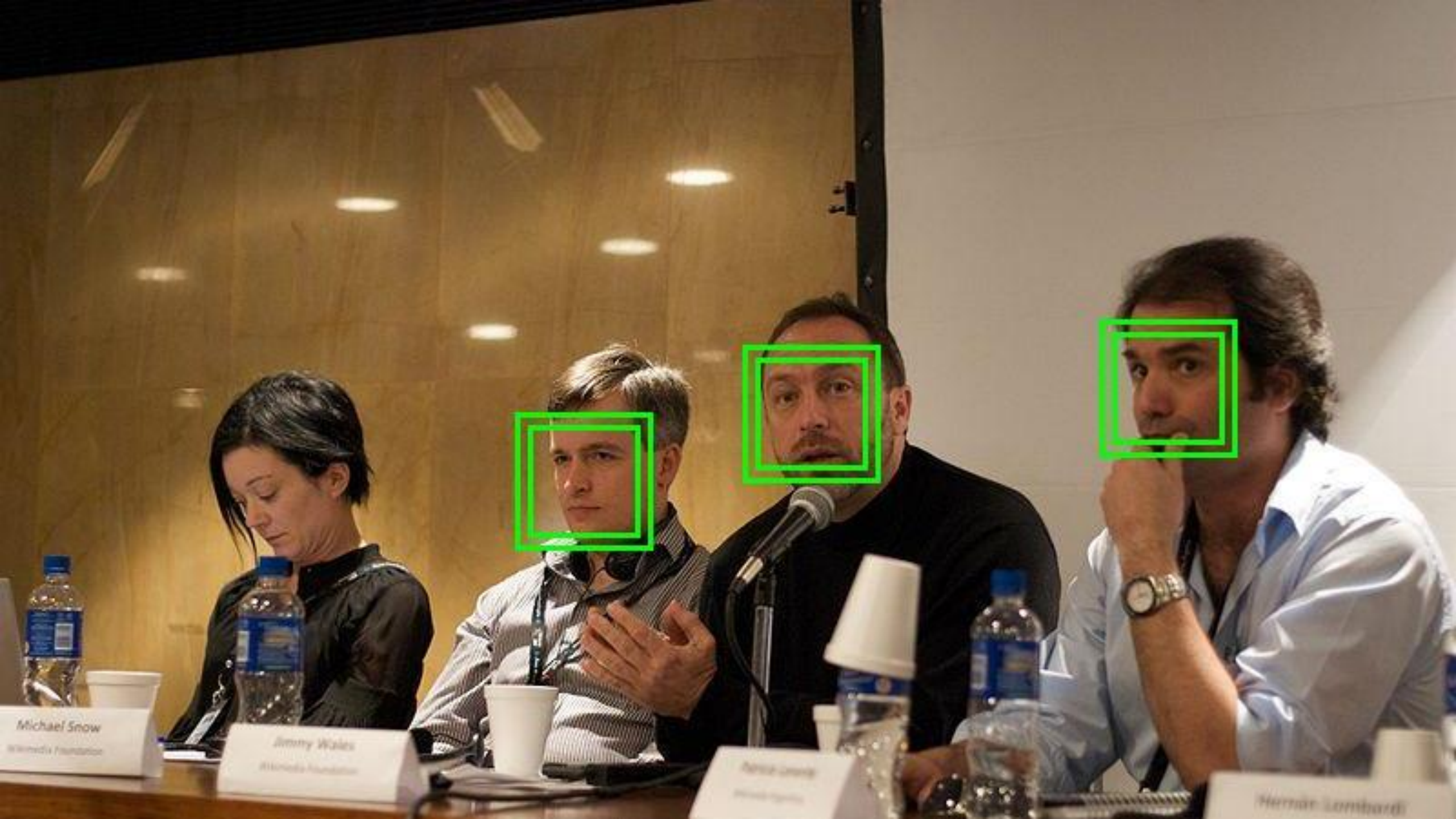
Component Labelling

Count how many?


Michael Snow
Jimmy Wales

if $f(x,y) = 'i'$

then

⋮

Case ①

$L(T) = \phi$ & $L(L) = \phi$

$L(P) =$ 'New Label'

Case ②

$L(T) \neq \phi$; $L(L) = \phi$

$L(P) = L(T)$

Case ③

$L(T) = \phi$; $L(L) \neq \phi$

$L(P) = L(L)$

Case ④

$L(T) \neq \phi$; $L(L) \neq \phi$

Sub case ⓐ

$L(T) = L(L)$

$L(P) = L(T)$

Sub case ⓑ

$L(T) \neq L(L)$

$L(P) = L(L)$

→ $L(L) = L(T)$

Pass (2)

only if:

Case (4) Subcase (b) is true.

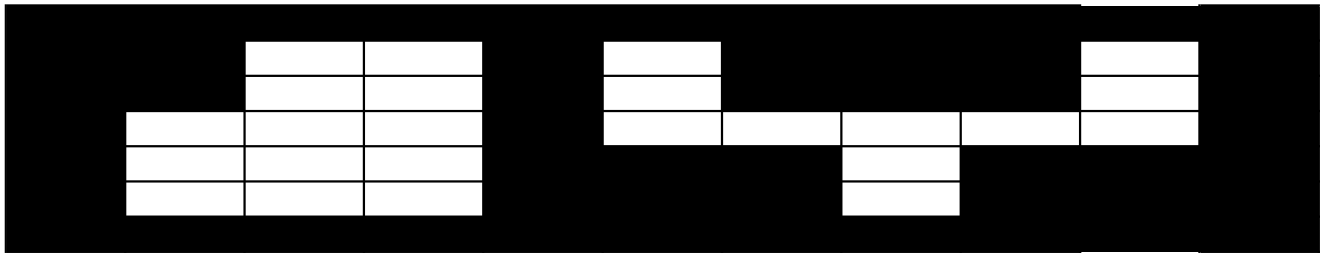
$$L(T) = L(L) = L(T)$$

$$1 = 4 = 1 \quad \checkmark$$

$$2 = 3 = 2 \quad \checkmark$$

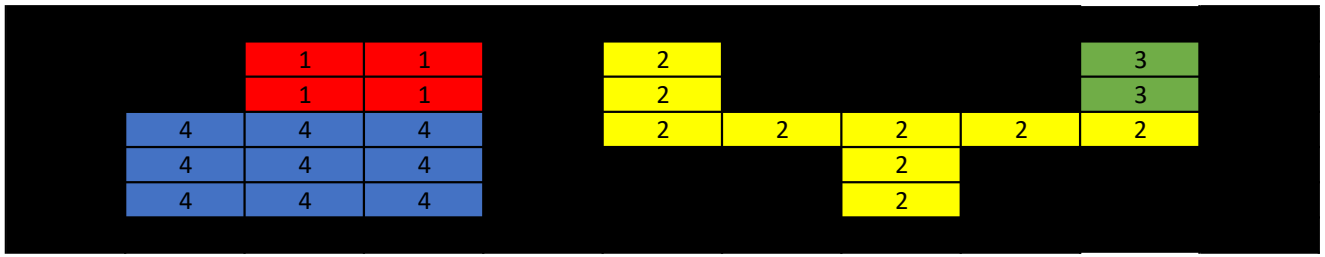
$$\vdots$$

Count Labels



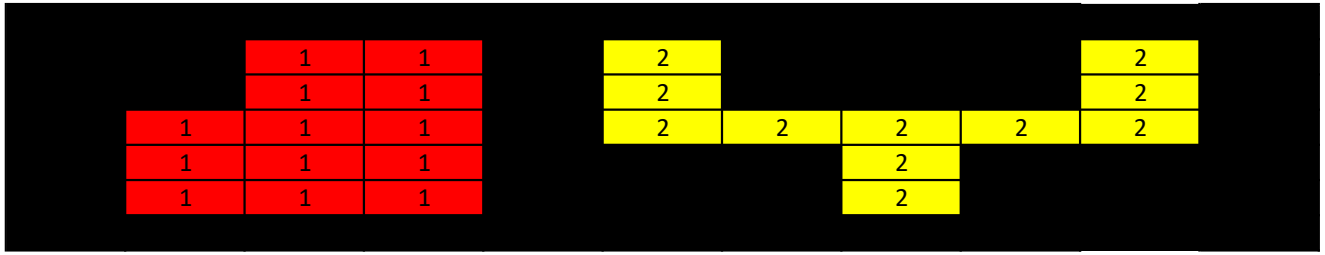
Input Image

Pass#01



1	4	Same
2	3	Same

Pass#02



Output Image