Place-holders Python execution

$y = 0$

$$\text{def } f(x):$$

$$y = x$$

t_1

$$\text{def } g(x): \text{ — Place-holders}$$

$$y = x + 1$$

t_2

$f(2)$

t_3

$g(2)$

t_4

$Print(y)$

t_5

y ⬚ 0

f | $(x) \rightarrow y = x$

g | $(x) \rightarrow y = x + 1$
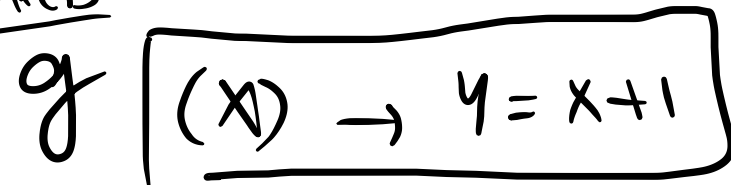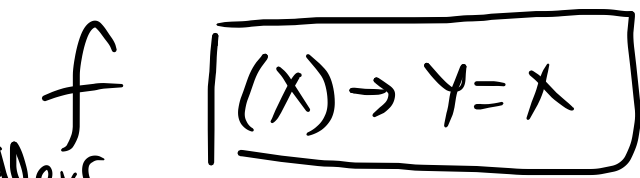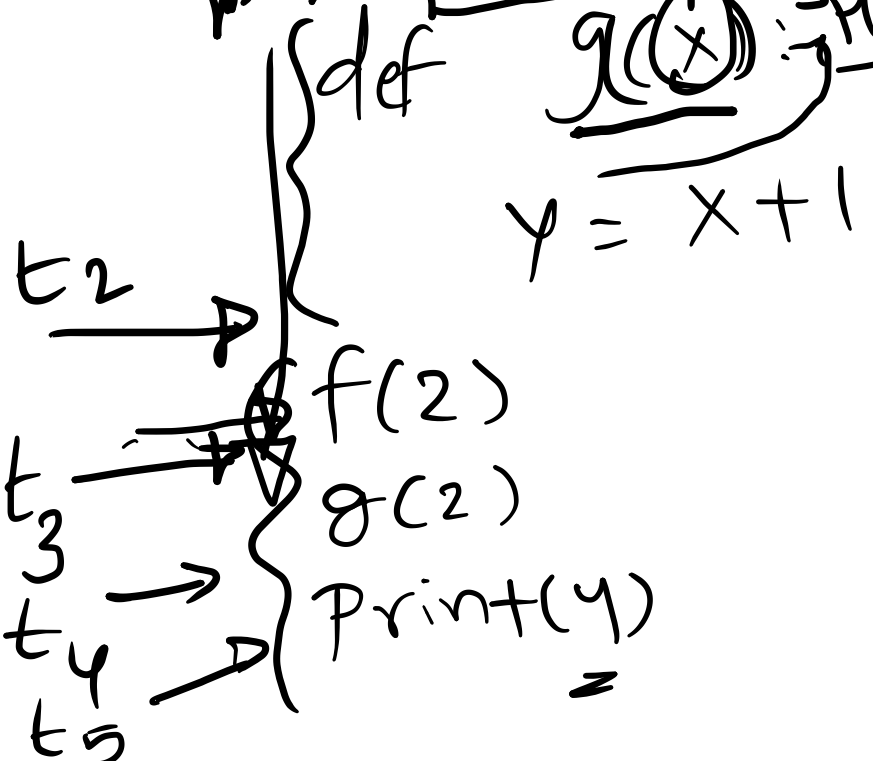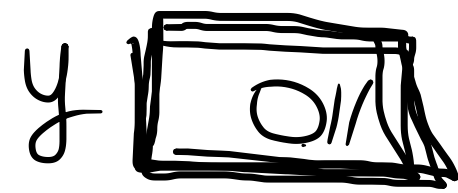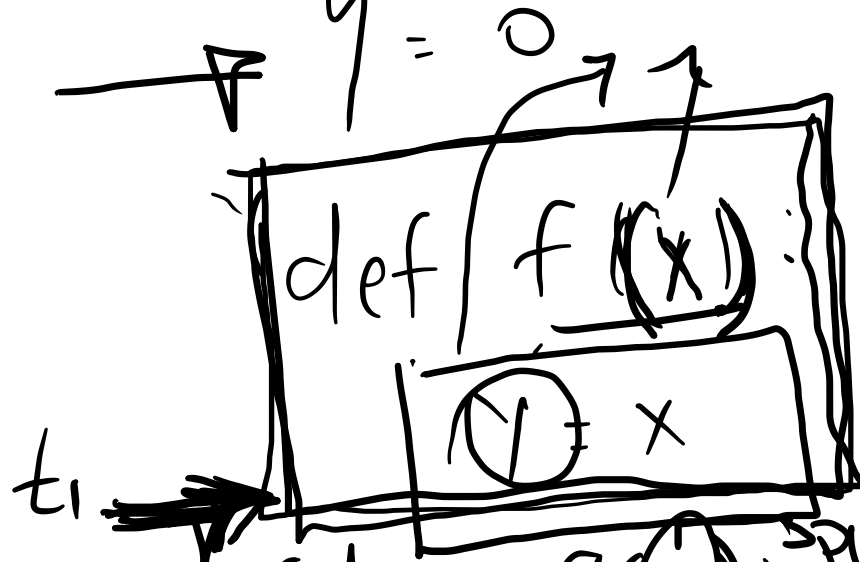
$Print(0)$

At t_1, variables named x & y local to f doesn't exist.
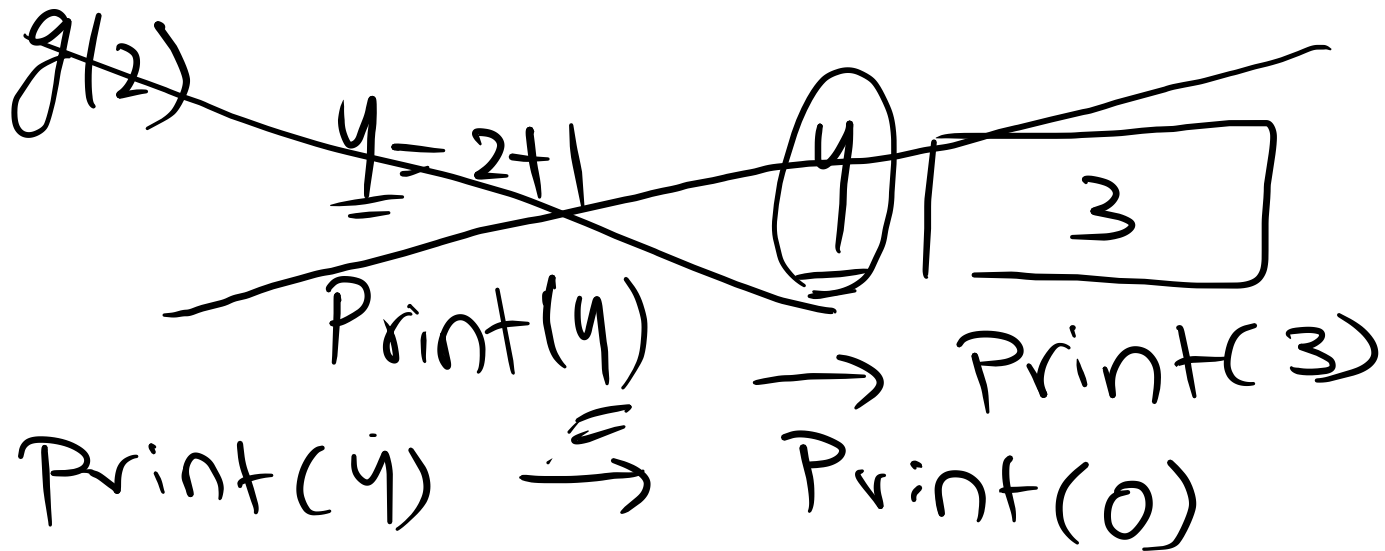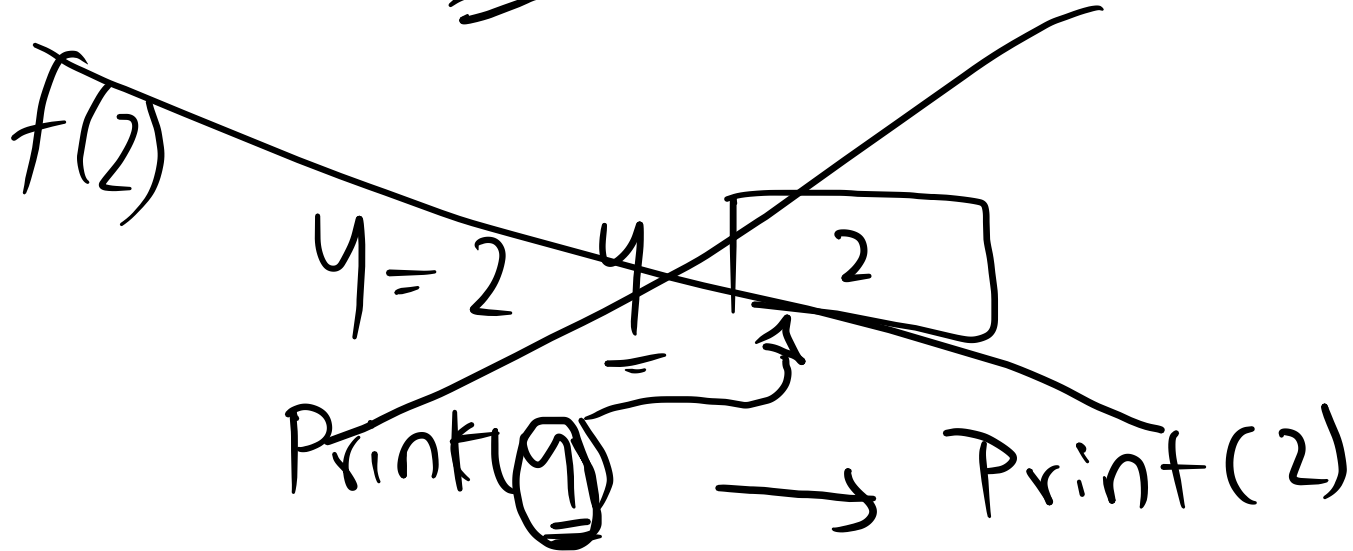
$$P(x) = x^2 + x + 1$$

$$P(2) = 2^2 + 2 + 1 = 7$$

$$P(3) = 3^2 + 3 + 1$$

$$Z(x) = x^3 + x^2 + 2$$

$$Z(4) = 4^3 + 4^2 + 2$$

$y \mid \boxed{0}$

$=$

$f(2)$

$y = 2$ $\quad y \mid \boxed{2}$

y
$=$

Print(y) $\quad \longrightarrow \quad$ Print(2)

$g(2)$

$y = 2+1 \quad \textcircled{y} \mid \boxed{3}$
$=$

Print(y) $\quad \longrightarrow \quad$ Print(3)

Print(y) $\stackrel{=}{\longrightarrow}$ Print(0)
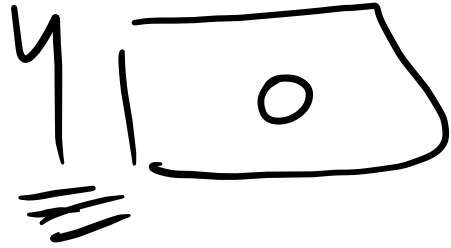
$$P(x) = x^2 + x + 1$$

$$\cancel{Q(x) = x^2 + 2x + 2} \quad X$$

$$Q(y) = y^2 + 2y + 2$$

$c_1 = \underline{\text{make\_counter}(5)}$

$c_2 = \underline{\text{make\_counter}(25)}$

Print $(c_1())$ # 5

Print $(c_2())$ #25

Print $(c_1())$ # 6

Start [~~35~~ 26]

c_2 [tick( )]

$r = start$

$sta = sta + 1$

return r

Start [~~6~~ ~~5~~ 7]

c_1

[tick( )]

$r = start$

$start = start + 1$

return r
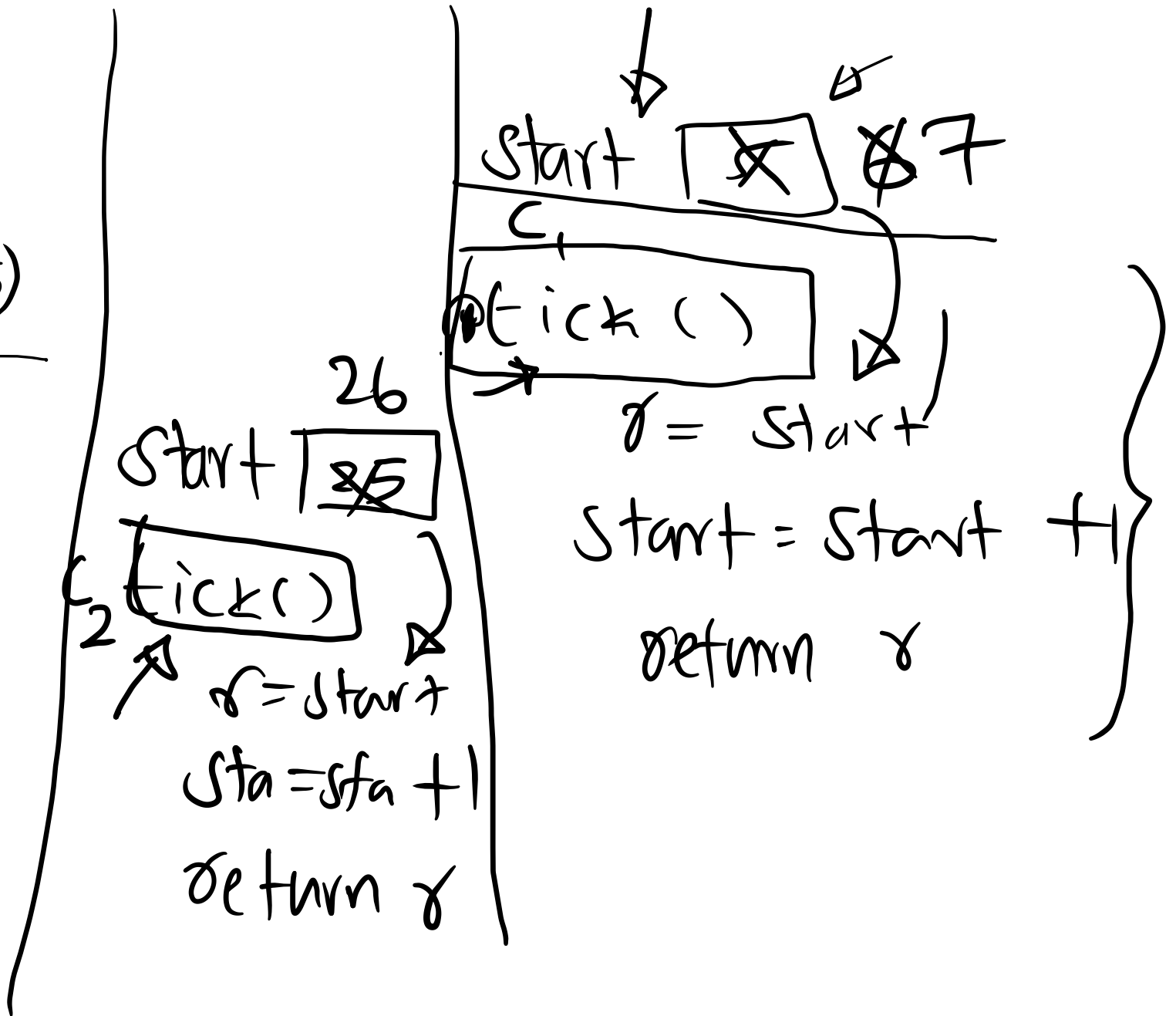
make_counter (5) ( )

function

tick fun.

int.