

7-1)

color : (V, I)

x (V \rightarrow C) \rightarrow (V \rightarrow C)

x M \uparrow
num

let V_0 = variable in the program (uncover-locals)

I, M = build-interferences φ

V = $V_0 \cup \{ \text{all the registers} \}$

σ_0 = \emptyset [r0 \mapsto 0] ... [r3 \mapsto 3] ... [r15 \mapsto 15]

σ = color (V, I) σ_0 M

N = maximum value in σ

Σ = \emptyset

for $i = 0 \dots 12$

$r = \text{rbx} \dots \text{r15}$ in

$\Sigma[i] = r$

for $i = 13 \dots N$ in

$\Sigma[i] = \%rbp (8 \times (i - 12))$

odd or even
 \downarrow
1+

7-2

① generalize

assign-homes

call it with

Σ

what?

(var → mem)

(var → arg)

② add another rule to patch

movq x, x → []

③ main

BEGIN → pushq rbp

movq rsp, rbp

pushq r12; pushq r13; ... push callee-saved registers

subq ss, rsp

jmp body

END → addq ss, rsp

popq r13; r12

popq callee-saved registers

popq rbp