

SAM

QUIZ-1

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1) Kill and Gen functions

	kill	Gen
1	\emptyset	\emptyset
2	\emptyset	$a+1$
3	$c+b$	\emptyset
4	$\{a+1\}$	$\{b*2\}$
5	\emptyset	\emptyset
6	\emptyset	\emptyset

Equations

$$AEnty(1) = \emptyset$$

$$AEnty(2) = AEnt(1) \cap AEnt(5)$$

$$AEnty(3) = AEnt(3)$$

$$AEnty(4) = AEnt(3)$$

$$AEnty(5) = AEnt(4)$$

$$AEnty(6) = AEnt(5)$$

$$AEnt(1) = AEnty(1)$$

$$AEnt(2) = AEnty(2) \cup \{a+1\}$$

$$AEnt(3) = AEnty(3) / \{c, b\}$$

$$AEnt(4) = AEnty(4) \cup \{b*2, \{a+1\}\}$$

$$A\epsilon_{\text{exit}}(5) = A\epsilon_{\text{entry}}(5)$$

$$A\epsilon_{\text{exit}}(1) = A\epsilon_{\text{entry}}(1)$$

Longest Solution

L	$A\epsilon_{\text{entry}}(L)$	$A\epsilon_{\text{exit}}(L)$
1	\emptyset	\emptyset
2	\emptyset	$\{a+1\}$
3	$\{a+1\}$	$\{a+1\}$
4	$\{a+1\}$	$\{b \times 2\}$
5	$\{b \times 2\}$	$\{b \times 2\}$
6	$\{b \times 2\}$	$\{b \times 2\}$

2) Kill and Gen functions

L	$kill_{RD}(L)$	$Gen_{RD}(L)$
1	$\{(a, ?), (a, 1), (a, 4)\}$	$\{(a, 1)\}$
2	$\{(b, ?), (b, 2)\}$	$\{(b, 2)\}$
3	$\{(c, ?), (c, 3)\}$	$\{(c, 3)\}$
4	$\{(a, ?), (a, 1), (a, 4)\}$	$\{(a, 4)\}$
5	\emptyset	\emptyset
6	\emptyset	\emptyset

Equations

$$RD_{entry}(1) = \{(a, ?), (b, ?), (c, ?)\}$$

$$RD_{entry}(2) = RD_{exit}(1) \cup RD_{exit}(5)$$

$$RD_{entry}(3) = RD_{exit}(2)$$

$$RD_{entry}(4) = RD_{exit}(3)$$

$$RD_{entry}(5) = RD_{exit}(4)$$

$$RD_{entry}(6) = RD_{exit}(5)$$

$$RD_{exit}(1) = RD_{entry}(1) \setminus \{(a, ?), (a, 1), (a, 4)\} \cup \{(a, 1)\}$$

$$RD_{exit}(2) = RD_{entry}(2) \setminus \{(b, ?), (b, 2)\} \cup \{(b, 2)\}$$

$$RD_{exit}(3) = RD_{entry}(3) \setminus \{(c, ?), (c, 3)\} \cup \{(c, 3)\}$$

$$RD_{exit}(4) = RD_{entry}(4) \setminus \{(a, ?), (a, 1), (a, 4)\} \cup \{(a, 4)\}$$

$$RD_{exit}(5) = RD_{entry}(5)$$

$$RD_{exit}(6) = RD_{entry}(6)$$

Shortcut Solution

L	$RD_{ent}(L)$	$RD_{ent}(L)$
1	$\{(a,2)(b,2)(c,2)\}$	$\{(a,1),(b,2),(c,2)\}$
2	$\{(a,1)(b,2)(c,2)(a,4)(c,3)(b,2)\}$	$\{(a,1)(c,2)(a,4)(c,3)(b,2)\}$
3	$\{(a,1)(c,2)(a,4)(c,3)(b,2)\}$	$\{(a,1)(a,4)(c,3)(b,2)\}$
4	$\{(a,1)(a,4)(b,2)(c,3)\}$	$\{(a,4)(c,3)(b,2)\}$
5	$\{(a,4)(c,3)(b,2)\}$	$\{(a,4)(c,3), (b,2)\}$
6	$\{(a,4)(c,3)(b,2)\}$	$\{(a,4)(c,3), (b,2)\}$

3)

L	$Kill_{LV}(L)$	$Gen_{LV}(L)$
1	x	z
2	xy	\emptyset
3	x	\emptyset
4	\emptyset	x,y
5	z	y
6	z	y
7	x	z

$$LV_{ent}(1) = LV_{ent}(1) \cup \{x\} \cup \{z\}$$

$$LV_{ent}(2) = LV_{ent}(2) \cup \{y\}$$

$$LV_{ent}(3) = LV_{ent}(3) \cup \{x\}$$

$$LV_{ent}(4) = LV_{ent}(4) \cup \{x,y\}$$

$$LV_{ent}(5) = LV_{ent}(5) \cup \{z\} \cup \{y\}$$

$$LVent_1(6) = LVent_1(6) \mid \{\{z\} \cup \{y\}\}$$

$$LVent_1(7) = \{LVent_1(7) \mid \{x\} \cup \{z\}\}$$

$$LVent_1(1) = LVent_1(2)$$

$$LVent_1(2) = LVent_1(3)$$

$$LVent_1(3) = LVent_1(4)$$

$$LVent_1(4) = LVent_1(5) \cup LVent_1(6)$$

$$LVent_1(5) = LVent_1(7)$$

$$LVent_1(6) = LVent_1(7)$$

$$LVent_1(7) = \emptyset$$

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L	$LVent_1(L)$	$LVent_1(L)$
1	$\{z\}$	\emptyset
2	\emptyset	$\{y\}$
3	$\{y\}$	$\{x, y\}$
4	$\{x, y\}$	$\{y\}$
5	$\{y\}$	$\{z\}$
6	$\{y\}$	$\{z\}$
7	$\{z\}$	\emptyset