

Very Busy Expressions

Domain: Set of all expressions

Direction: Backwards
Meet Operator: \cap
$$\begin{cases} \text{in}[b] = f_b(\text{out}[b]) \\ \text{out}[b] = \bigcap_{s \in \text{Succ}(b)} \text{in}[s] \end{cases}$$

Transfer Function: $f_b(x) = \text{Gen}[b] \cup (x \setminus \text{Kill}[b])$

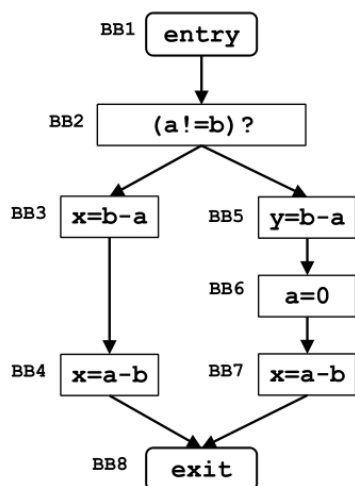
Boundary Conditions:
Initial Interior Points:
 $\text{in}[\text{exit}] = \emptyset$
 $\text{in}[b] = \emptyset$

For each instruction i of the form $\text{lhs} \leftarrow \text{expr}$

We have

$\text{Kill}[i] = \{\text{any expression } e \mid \exists \text{ operand } e_i \text{ of } e \text{ s.t. } e_i = \text{lhs}\}$

$\text{Gen}[i] = \{\text{expr}\}$



b	Iteration 1		Iteration 2
	IN[b]	OUT[b]	Unchanged
1		b-a	
2	b-a	b-a	
3	b-a, a-b	a-b	
4	a-b	\emptyset	
5	b-a, 0	0	
6	0	a-b	
7	a-b	\emptyset	
8	\emptyset		