Very Busy Expressions

	Very Busy Expressions
Domain	Insieme delle espressioni { b-a, a-b }
Direction	Backward: $In[B]=f_b[Out[B]]$ $Out[B]= \cap In[Succ[B]]$
Transfer Function	$f_b(x)= Gen_b \cup (Out_b-Kill_b)$
Meet Operator	$\cap$
Boundary Condition	$In[exit] = \emptyset$
Initial Interior Points	$In[b]=u$
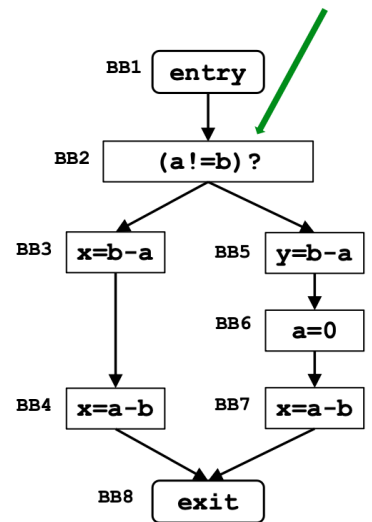
BB	ITERAZIONE 1	
	IN [B]	OUT [B]
BB1	b-a	b-a
BB2	b-a	(b-a,a-b) $\cap$ b-a = **b-a**
BB3	b-a U a-b = **(b-a,a-b)**	a-b
BB4	a-b	$\emptyset$
BB5	b-a	$\emptyset$
BB6	$\emptyset$ U ((a-b) \ (a-b,b-a))= $\emptyset$	In [BB7] = **a-b**
BB7	a-b	$\emptyset$
BB8	$\emptyset$	$\emptyset$

**Dominator Analysis**

	Dominator Analysis
Domain	Insieme dei Basic Block { A,...,G }
Direction	Forward: $Out[B]=f_B(In[B])$ $In[B]= \cap Out[pred[B]]$
Transfer Function	$f_B=Gen_B \cup In_B$
Meet Operator	$\cap$
Boundary Condition	Out[A]=A
Initial Interior Points	Out[b] = u
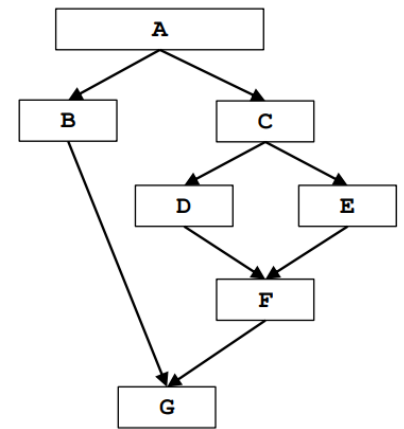
BB	ITERAZIONE 1	
	IN [B]	**OUT [B]**
A	Ø	A
B	A	B U In[B] = **B,A**
C	A	C U In[C] = **C,A**
D	**C,A**	D U In[D] = **D,C,A**
E	**C,A**	E U In[E] = **E,C,A**
F	Out[D] ∩ Out[E] = **C,A**	F U In[F] = **F,C,A**
G	Out[B] ∩ Out[F] = **A**	G U In[G] = **G,A**

Constant Propagation Analysis

	Constant Propagation Analysis
Domain	Insieme delle coppie <x,c>
Direction	Forward: Out[B]=f_B(In [B]) In[B]=∩ Out[pred [B]]
Transfer Function	f_B= Gen$_B$ U (In$_B$-Kill$_b$)
Meet Operator	∩
Boundary Condition	Out[entry]=Ø
Initial Interior Points	Out[B]=u
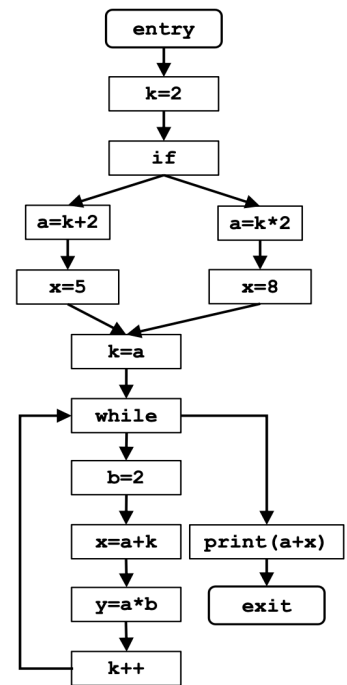
BB	ITERAZIONE 1		ITERAZIONE 2	
	IN [B]	OUT [B]	IN [B]	OUT [B]
ENTRY	Ø	Ø	Ø	Ø
k=2	Ø	[k,2]	Ø	[k,2]
IF	[k,2]	[k,2]	[k,2]	[k,2]
a=k+2	[k,2]	[k,2][a,4]	[k,2]	[k,2][a,4]
x=5	[k,2][a,4]	[k,2][a,4][x,5]	[k,2][a,4]	[k,2][a,4]
a=k*2	[k,2]	[k,2][a,4]	[k,2]	[k,2][a,4]
x=8	[k,2][a,4]	[k,2][a,4][x,8]	[k,2][a,4]	[k,2][a,4]
k=a	[k,2][a,4]	[a,4]	[k,2][a,4]	[a,4]
WHILE	[a,4]	[a,4]	[a,4]	[a,4]
b=2	[a,4]	[a,4][b,2]	[a,4]	[a,4][b,2]
x=a+k	[a,4][b,2]	[a,4][b,2]	[a,4][b,2]	[a,4][b,2]
y=a*b	[a,4][b,2]	[a,4][b,2][y,8]	[a,4][b,2]	[a,4][b,2][y,8]
k++	[a,4][b,2][y,8]	[a,4][b,2][y,8]	[a,4][b,2][y,8]	[a,4][b,2][y,8]
PRINT(a+x)	[a,4]	[a,4]	[a,4]	[a,4]
EXIT	[a,4]	[a,4]	[a,4]	[a,4]