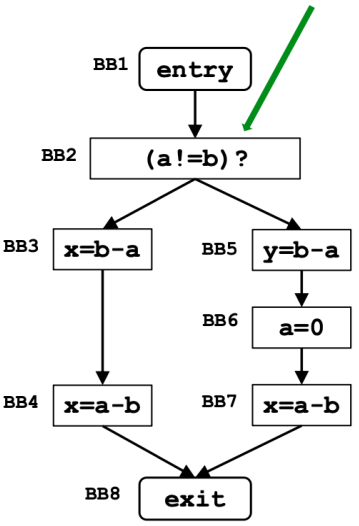
Very Busy Expressions

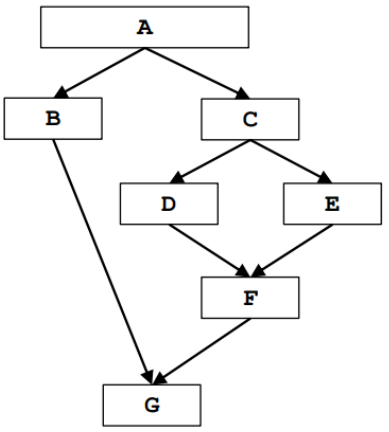
	Very Busy Expressions
Domain	Insieme delle espressioni { b-a, a-b }
Direction	Backward: In[B]=f_b[Out [B]] Out[B]= ∩ In [Succ [B]]
Transfer Function	$f_b(x)$= Gen_b U (Out_b-$Kill_b$)
Meet Operator	∩
Boundary Condition	In [exit] = Ø
Initial Interior Points	In [b]=u



BB	ITERAZIONE 1	
	IN [B]	**OUT [B]**
BB1	**b-a**	**b-a**
BB2	**b-a**	(b-a,a-b) ∩ b-a = **b-a**
BB3	b-a U a-b = **(b-a,a-b)**	**a-b**
BB4	**a-b**	**Ø**
BB5	**b-a**	**Ø**
BB6	Ø U ((a-b) \ (a-b,b-a))= **Ø**	In [BB7] = **a-b**
BB7	**a-b**	**Ø**
BB8	**Ø**	**Ø**

Dominator Analysis

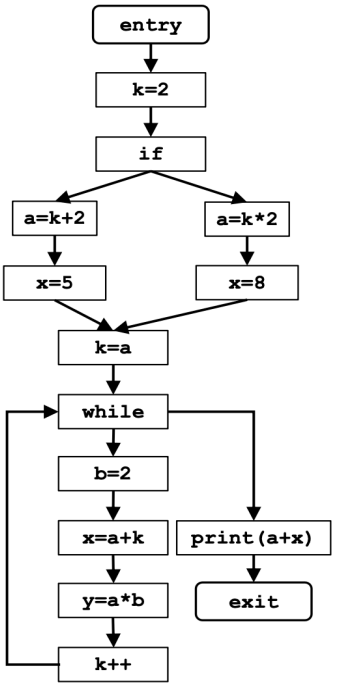
	Dominator Analysis
Domain	Insieme dei Basic Block { A,...,G }
Direction	Forward: Out[B]=f_B(In [B]) In[B]= ∩ Out[pred [B]]
Transfer Function	f_B=Gen_B U In_B
Meet Operator	∩
Boundary Condition	Out[A]=A
Initial Interior Points	Out[b] = u



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: $Out[B]=f_B(In\ [B])$ $In[B]=\cap\ Out[pred\ [B]]$
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]	[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]	[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][b,2][y,8]	[a,4][b,2][y,8]
b=2	[a,4]	[a,4][b,2]	[a,4][b,2][y,8]	[a,4][b,2][y,8]
x=a+k	[a,4][b,2]	[a,4][b,2]	[a,4][b,2][y,8]	[a,4][b,2][y,8]
y=a*b	[a,4][b,2]	[a,4][b,2][y,8]	[a,4][b,2][y,8]	[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][b,2][y,8]	[a,4][b,2][y,8]
EXIT	[a,4]	[a,4]	[a,4][b,2][y,8]	[a,4][b,2][y,8]