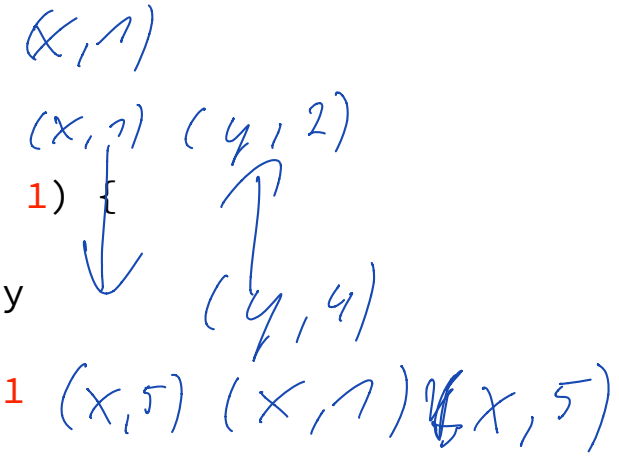
Reaching Definitions - Example

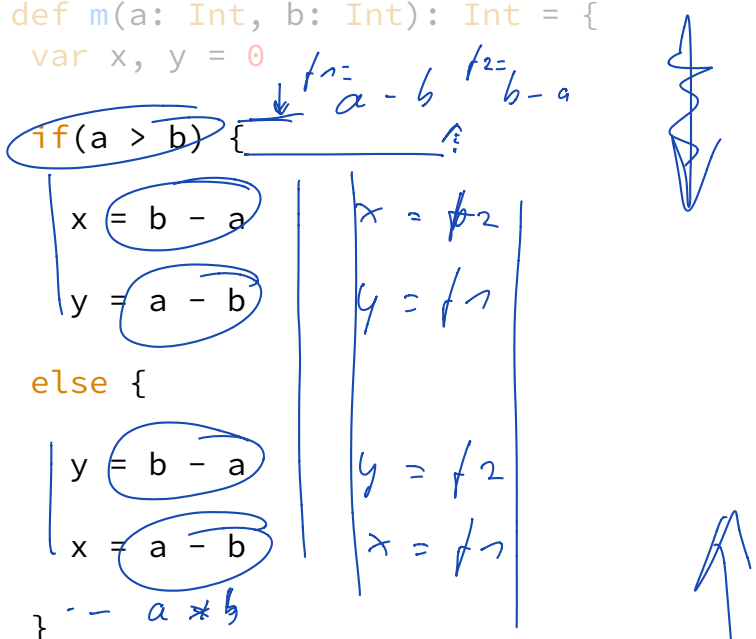
```
        def m(): Int = {
/*pc 1*/  var x = 5;
/*pc 2*/  val y = 1;
/*pc 3*/  while (x > 1) {
/*pc 4*/    y = x * y
/*pc 5*/    x = x - 1
          }
/*pc 6*/  x + y
        }
```



Very Busy Expressions Analysis - Example

```
        def m(a: Int, b: Int): Int = {
/*pc 0*/  var x, y = 0
/*pc 1*/  if(a > b) {
/*pc 2*/    x = b - a
/*pc 3*/    y = a - b
          else {
/*pc 4*/    y = b - a
/*pc 5*/    x = a - b
          }

/*pc 6*/  n(x, y)
        }
```

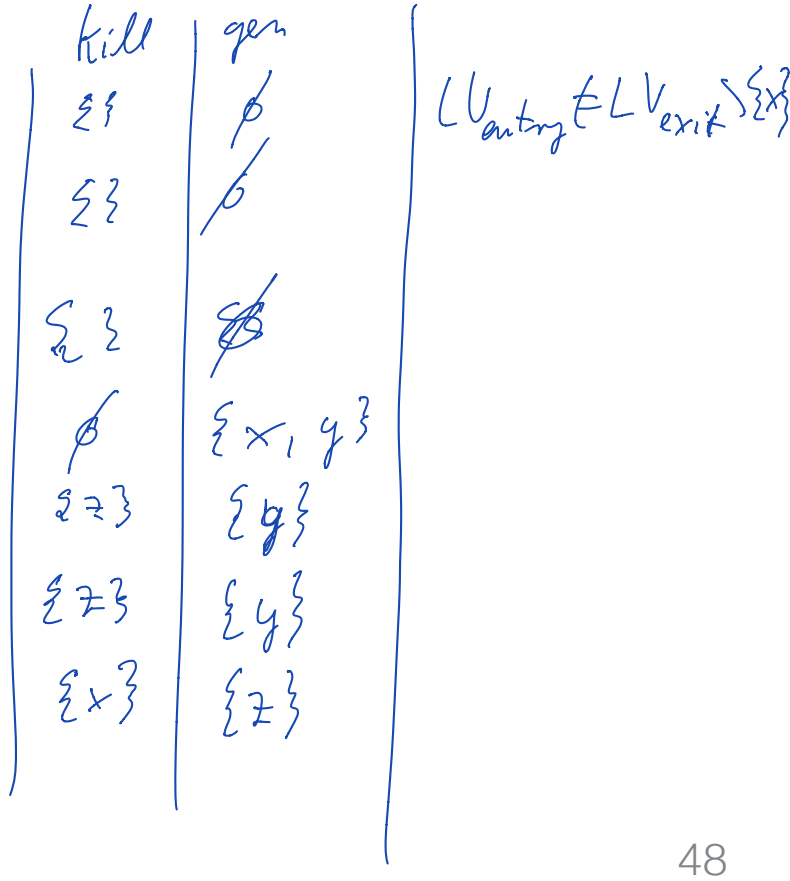


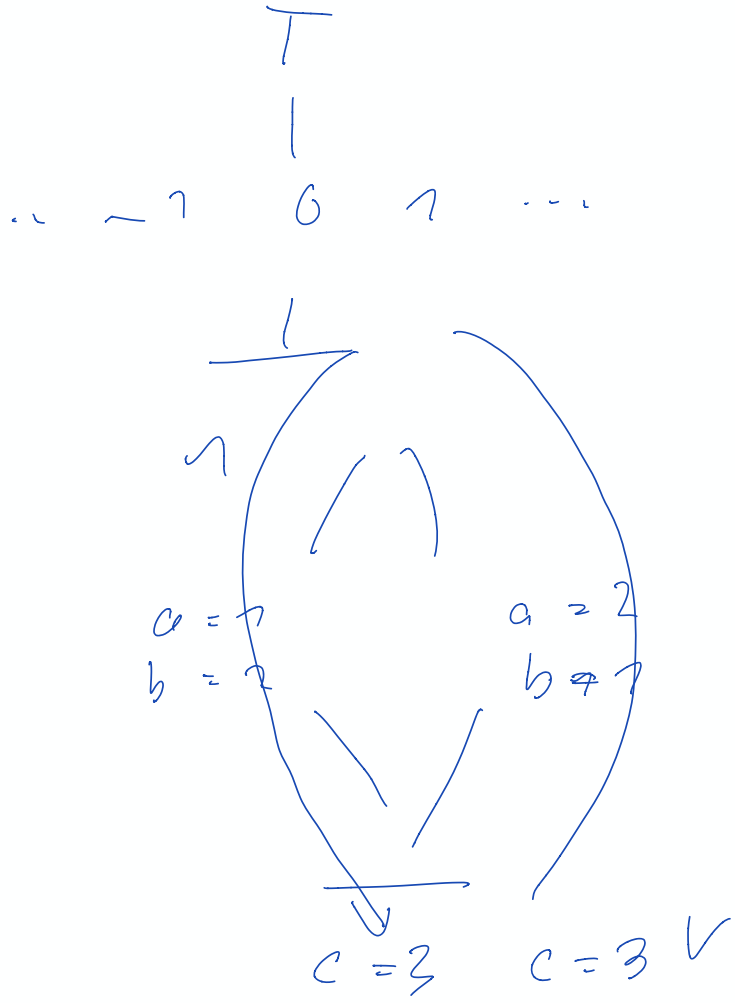
Very Busy Expressions Analysis - applied

```
def m(b1 : Boolean,b2 : Boolean, a: Int, b : Int ): Int = {
 if(b1){
  m()
  a/b
 } else {
  if(b2) {
    val c = a + b
    a/b * c
  } else {
    val c = a * b
    a/b - c
  }
 }
}
```

Live Variable Analysis - example

```
        def m(): Int = {
/*pc 1*/  var x = 2
/*pc 2*/  var y = 4
/*pc 3*/  x = 1
/*pc 4*/  val z = if( y > x ) {
/*pc 5*/    y
          } else {
/*pc 6*/    y * y
          }
/*pc 7*/  x = z + 1
        }
```




T
1
a = 1
b = 2
a = 2
b = 1
c = 2
c = 3