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)
          }
```

41

Very Busy Expressions Analysis - applied

```scala
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
          }
```

48