

In Class Exercise – Data Flow Analysis

Wed, Nov 4, 2015

1. Draw the control-flow graph for the following program. Don't put statements in basic blocks; put every statement in its own node.

```
y = x + 3;  
z = y + w;  
w = 42;  
while (z < a) {  
    z = z + y;  
    a = a - 1;  
    x = x + 1;  
    if (z > 5) {  
        y = x + 3;  
    }  
}
```

2. Write down gen and kill sets for *available expressions* for each assignment statement in the above program.
3. Compute the set of available expressions at the *out* of each statement in the control-flow graph.