

Compiler Construction CSCI-GA.2130-001 Fall 2011 hw8

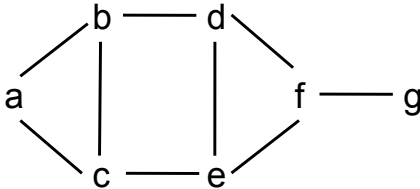
Assigned We 11/30/2011, due Fr 12/9/2011 at 1pm.

Reading Assignments

- For lecture on 12/7/2011: Dragon-book 7.5-7.6 (20 pages)
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Homework Assignments

1. Register allocation (8 points).
Consider the following interference graph:



Assuming that there are only two registers `%rax` and `%rdi` available, and assuming that the spill locations on the stack are at `[%rbp-8]`, `[%rbp-16]`, etc., show a possible register assignment.

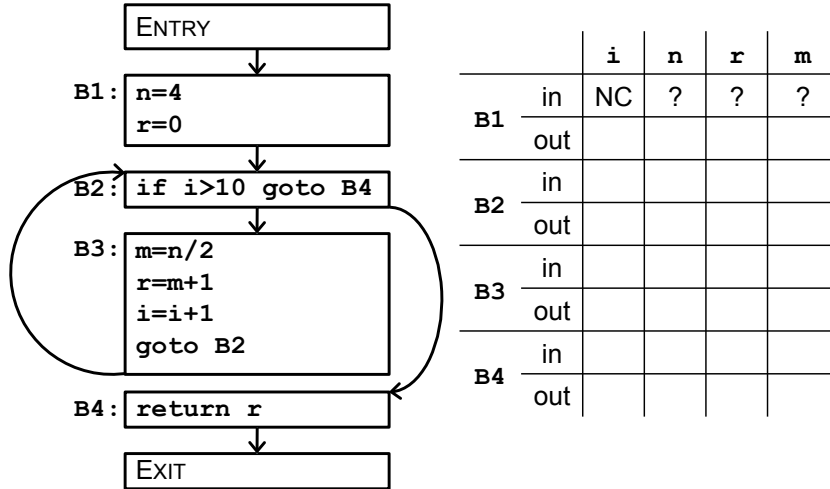
2. Flow graphs (8 points).
Consider the following TACK IR code:

```
    ifFalse a goto L2
    if b == 0 goto L1
    goto L2
L1: y = 1
    goto L3
L2: y = 2
L3: z = y
```

Show the flow graph for this code.

3. Data-flow analysis (8 points).

Consider the following flow graph with TACK IR:



To the right of the flow graph, there is an incomplete table with data-flow information for constant folding. Fill in the rest of the table.

<http://cs.nyu.edu/courses/fall11/CSCI-GA.2130-001/hw8.pdf>

Total points: 24.