

Homework 5

posted Mar. 9, due Mar. 22 at the beginning of the class (no late turn-ins will be accepted).

Please put a cover page over the homework. The grade will be written on the second page.

1. (20 pts) Exercise 7.2
2. (20 pts) Short-circuit evaluation of boolean expressions

When an IF condition or a While loop condition is a Boolean expression, e.g. `a && b`, often the truth value of that expression can be determined without evaluating all components of the expression. For example, if `a` is false, then we know `a && b` must be false without even knowing the truth value of `b`. The branch operation can take place as soon as the branch condition can be determined. This is called short-circuit evaluation of Boolean expression.

Please convert the following While loop into intermediate code using the idea of short-circuit boolean evaluation.

```
while ( (a < d) || (e < f) ) t = t + 1;
```

Introduce labels and temporaries as needed.