Project 2

CMSC 22620/32620, Spring 2007

Assigned: April 19, 2007
Due: April 26, 2007

1 Introduction

You are to write a simple *trace scheduler* for our tree language using the greedy algorithm outlined in class.

Trace scheduling is explained in Appel's textbook in Chapter 8, Algorithm 8.2. Notice, though, that we are using somewhat different tree languages. The input language (defined in module `BBTree`, file `bbtree.sml`) describes basic blocks; the output language (defined in module `TraceTree`, file `tracetree.sml`) describes traces. The type definitions in these modules encode most of the invariants that we can expect from the input and that we want to establish for the output.

The tarball for this project contains a template `traceschedule.sml` with numerous comments that should help you in designing your solution.

2 Instructions

2.1 Files

Download the file `project2.tgz` from the course web page. This is a compressed tarball containing the files that define the two tree languages as well as a skeleton of the code you are supposed to write.

2.2 Testing

For effective testing you probably want to write a separate "pretty printer" for traces along the lines of module `PrintBBTree` in file `prbbtree.sml`. You should also write a simple driver, i.e., a function that takes a basic block tree, converts it into a tracetree, and then pretty-prints both the input and the output.

Finally, you have to make up some sample input for your code. Sample input consists of data of type BBTree.cluster.

3 Handing it in

In addition to writing the driver, the pretty-printer, and the sample input, you should only have to make changes to file `traceschedule.sml` and `proj2.cm`. To hand in your solution, you only need to send file `traceschedule.sml` as an e-mail attachment to the instructor using the following e-mail address:

instructor	`blume (at) tti (hyphen) c (dot) org`

Alternatively, bundle up your files as a tarball and attach that to your e-mail. This way you can show your solution to the pretty-printer and to your testing harness as well.