CS323 - Winter 97 - Homework #1

January 9, 1997

1 The Missionaries and Cannibals Problem

In this Problem Set we will deal with a *soft* version of the MCP we will call the Elementary-MCP.

Definition 1.1 *The* Elementary-K Missionaries and Cannibals Problem *is the following problem:*

> *K missionaries and K cannibals get to a river. There is a bridge over the river, and they want to cross over to the other bank. How shall they cross?*

Problem 1.2 *1. Enter the formalization of the Elementary-1-MCP, present on the web site, to the PVS. Check that you can prove the solvability of the problem using the proof present on the web site.*

2 Blocks World

Problem 2.1 *1. Formalize the Blocks World s.t. you have 3 blocks, A is on B, B is on the table, and C is on the table. Do that in two ways: One using a 'location' function, and the other using an 'on' predicate. Make sure that everything that should be clear, is, nothing is in two places at once, no block is on itself, and everything is always somewhere (there are more... every additional is a bonus).*

2. What are the signatures of your languages above?