

University of Puerto Rico
Department of Electrical and Computer Engineering
ICOM 4036: Programming Languages
Spring 2005

Problem Set #1 (DUE Feb 17 In class)

1. Provide the state diagram for a Turing Machine recognizing the set of strings $a^n b^n c^n$ of equal number of a's, b's and c's, in that order.
2. Argue why it is undecidable to determine if a program changes the value of some variable or not. (HINT: Reduce to the Halting Problem)
3. PLP¹ 5.1
4. PLP 5.2
5. PLP 5.3
6. PLP 5.8. Use Easy I assembly as your low level programming language and assume numbers are 16 bits wide.

PLEASE WORK INDIVIDUALLY ON THIS PROBLEM SET

¹ PLP = Programming Language Pragmatics Textbook