Problem Set #1 (DUE Feb 17 In class)

1. Provide the state diagram for a Turing Machine recognizing the set of strings $a^nb^nc^n$ 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. PLP$^1$ 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