Universidad de Puerto Rico
Recinto Universitario de Mayagüez
Departamento de Ingeniería Eléctrica y Computadoras

ICOM 4036 – Programming Languages

Primavera 2008

Ejercicios de práctica
Examen Parcial I

1) Device Turing Machine to accomplish the following:

   a) Determine is a binary number is divisible by 3

   b) Recognize the language of binary strings with equal number of ones and zeros. The ones do not have to appear consecutively inside the string

   c) Add two positive binary numbers of the same length

   d) Compute the 2's complement of a binary number

2) Write finite state diagrams to recognize the following languages:

   a) Sequence of 0's and 1's containing the pattern "010111". Careful with overlapped patterns

   b) Identifiers that begin with letter or underscore followed by letters, digits or underscore, and ending with a dollar ($) sign.

   c) Integer constants that are divisible by 5

3) Design a state diagram to recognize all numeric literals in ANSI C

4) PLP Exercise 2.3

5) PLP Exercise 2.4

6) PLP Exercise 2.6

7) PLP Exercise 2.11

8) PLP Exercise 2.12

9) PLP Exercise 2.17

10) PLP Exercise 2.22

NOTE: Exam I will only cover the material up to and including lexical analysis and scanning. Some of the above exercises will not be relevant since they pertain to parsing.