Assignment 2: CLR(1) Parser’s Automaton Drawing

Submission Deadline: Wednesday, Dec 18 (In class)

In this assignment, you will draw the automaton for a Canonical LR(1) , also called CLR(1), parser for a reference grammar. You should define the production rules and alphabet of terminals for the grammar following the process described below. To learn how to construct the automaton of a CLR(1) parser, read Sections 4.7.1 to 4.7.3 of the reference textbook. Draw the automaton exactly in the way shown in the reference textbook. Note that your submission must be a handwritten version, a typed submission will get a 0 out of 10.

**Grammar Construction Process** (note that ε means empty):

A -> B A C

A -> D E

B -> the last digit of your student ID

C -> the second last digit of your student ID

D -> the third last digit of your student ID

E -> the fourth last digit of your student ID

Then, if your student ID is odd then add the following rules:

B -> ε

D -> ε

Otherwise, add the following rules:

C -> ε

E -> ε

**An example:** Suppose your student ID is 20130165. Then your grammar is as follows

A -> B A C

A -> D E

B -> 5

C -> 6

D -> 1

E -> 0

B -> ε

D -> ε

Alphabet of terminals is {5,6,1,0}

**Late Submission Policy:** Since you get two extra days beyond the regular two weeks’ time, no late submission will be accepted for this assignment.