Compilers CS445 – Project

Deadline: 25-11-2018

(20 marks)

a- Develop Java or C++ programs to do the following tasks:
1- Building an NFA from a given regular expression.
2- Converting a giving NFA into a DFA.
3- Building a DFA from a given regular expression directly without going through an NFA.   (8 marks)

b- For the following grammar write a Java or C++ program that uses the LR(1) method to decide whether a given string can be derived in the grammar. If the sentence is derivable, your program should output the derivation of the sentence. (7 marks)

$S' \rightarrow S$
1) $S \rightarrow L=R$
2) $S \rightarrow R$
3) $L \rightarrow *R$
4) $L \rightarrow id$
5) $R \rightarrow L$

c- Write an implementation for 5 type system rules included in the type checking slides.   (5 marks)

Marking notes:

1- if any part of the code is plagiarized, the student mark is zero/20.
2- For original uncompleted parts of the project the student gets a mark proportional to the achieved parts according to the instructor evaluation.