

Advanced Computer Lab, Spring term 2017
Task 6

In this task you are required to implement the LL(1) parser for parsing a given LL(1) grammar. You will be implementing the generic algorithm discussed in the lecture 4. In this task you will first take the input grammar using the same format presented in Task5. Then you will need to use your implementation the first and follow to get the first and follow sets of the input grammar. Your first deliverable is to output the parse table as the given format in file **table.out**. In the table output file the null values refer to an error. Both the variables and terminals should be printed as shown in the output file.

The second deliverable is to take an given input string and output it's most left derivation using LL(1) parser, having both the parsing table and the push down automata (PDA) of your grammar. The input strings and their corresponding outputs are in the following files:

- a) **input1.in**
- b) **input1.out**
- c) **input2.in**
- d) **input2.out**
- e) **input3.in**
- f) **input3.out**
- g) **input4.in**
- h) **input4.out**

In the output the format of the derivation is according to the following example:

$$R[x] \rightarrow D$$

where:

- R is the variable on top of the stack.
- x : is the part of the input where the head is pointing.
- D : is the derivation produced using the parse table given R and x

Please Note that:

- Your deadline is one week after your lab session.
- **No late** submissions will be accepted.
- Cheating cases will be graded by 0.
- It is your responsibility to make sure that the files were uploaded successfully to the website.