Assignment #6
CS347
Date: 9th March 2017
Total 25 Points

1. Consider the flowing grammar

$E \longrightarrow E_1 + T$

$E \longrightarrow E_1 - T$

$E \longrightarrow T$

$T \longrightarrow (E)$

$T \longrightarrow id$

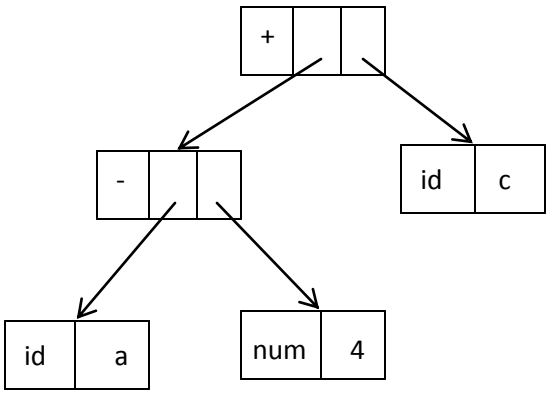
$T \longrightarrow num$

Given an expression as per the above grammar as an input, write a LEX/YACC program to construct the abstract syntax tree in the memory and display the tree in the form of preorder traversal. (10 points)

Example:

Input: Expression ***"a – 4 + c"***
Output: Preorder traversal **"a 4 – c +"**

Note: The abstract syntax tree in the memory would be



2. Consider the set of input symbols {a, b, c}, and write a LEX/YACC program to perform the following tasks. (5+5+5 points)

   (i) Accept the set of all strings in L where $L=\{a^n b^{2n} c^m \mid n, m > 0 \}$

   (ii) Accept the set of all strings which do not consist of two adjacent same input symbols.
   For example: Strings like "abaac", "abbc", "ccaba", "aabcc" , "aa" "aabbcc" and etc. are not accepted.

   (iii) Accept the set of all strings in L where $L=\{c^k a^n b^m \mid k, n, m > 0$ and $n != m \}$

Note: Show the acceptance (for the strings that can be parsed) and the error message (for which strings can't be parsed). If not possible to implement, please explain with proper reason.

Submission Deadline-in one lab session

Submission Steps:

- Open 172.16.1.3/~halder
- Click on "Submission System"
- Login: <your roll no.>
- Password: <blank>
- Once Login first time, you must change your password
- Create a directory with name "assignment06" in your computer system
- Put your assignment files in the directory
- ZIP the directory to create "assignment06.zip"
- Upload the zip by clicking on Upload button.