# Compiler Construction

## Exercises for Assignment#1

1. What are the left associative and right associative operators? Give two other examples for each.

2. Define *term*, *expression*, and *factor*, using their built-in recursive structures. Construct an expression making use of all these three.

3. Construct parse trees for following using definitions of *term*, *expr*, and *factor*.

   (a) $(3 + 5 + 2)/(7 - 3 + 5)$

   (b) $(3 + 5/(2 + 5))$

4. Convert the expression $(3 + 5)/4 * 2$ into postfix notation. Write all the necessary steps for this.

5. Define followings terms:

   (a) Syntax Directed Definition

   (b) Simple Syntax Directed translation

   (c) Annotated Parse Tree

6. Construct annotated parse trees for each of the following: $3 * 2 - 8 + 5$

7. Construct a syntax-directed translation scheme that translates arithmetic expressions from infix notation into prefix notation in which an operator appears before its operands; e.g., $-xy$ is the prefix notation for $x - y$. Give annotated parse trees for the inputs $7 - 3 + 5$.

   *Submission deadline:* **12-10-2018** *(in the lecture class). It should be solved in loose papers of 4 size, and stapled. Write your name and roll no. at top.* **Note: There are marks associated with thse assignments**