Ahsanullah University of Science and Technology
Department of CSE
Fall 2024
Course Name: Formal Language and Compilers Lab Course No: CSE 4130
Assignment 5

Write a C/C++ program that implements a Context-Free Grammar (CFG) to define the syntax of simple arithmetic expressions using the following rules:

<Exp> → <Term> + <Term> | <Term> - <Term> | <Term> **<Term>** → <Factor> * <Factor> | <Factor> / <Factor> | <Factor> **<Factor>** → (<Exp>) | ID | NUM **ID** → a|b|c|d|e **NUM** → 0|1|2|...|9	**Non-terminal symbols:** <Exp>, <Term>, <Factor> **Terminal symbols:** +, -, *, /, (,), a, b, c, d,e, 0, 1, 2, 3, ..., 9 **Start symbol:** <Exp>

Sample Input and Output:
Your program should read several input strings and show for each whether it is accepted or rejected.

An example is given below:

Input	**Output**	**Explanation**
3 * (a - 2)	Accepted	<Term> → <Factor> * <Factor> First <Factor> → NUM Second <Factor> → (<Exp>)
a +	Rejected	No <Term> after +
9 - d	Accepted	
3 4	Rejected	