Course: **SE312 Theory of Computing (Section: B)**
Instructors: **Dr. Naushin Nower, Professor, IIT, DU**
    Toukir Ahammed, Lecturer, IIT, DU
Lab 10

1. Consider the following context-free grammar (CFG) for palindromes:

$$S \rightarrow \quad A1B$$

$$A \rightarrow \quad 0A \mid \epsilon$$

$$B \rightarrow \quad 0B \mid 1B \mid \epsilon$$

Write a program to take a string as input and show leftmost and rightmost derivations of the given string using the above CFG.

Example

Input: 00101

Output:

Leftmost: S => A1B => 0A1B => 00A1B => 001B => 0010B => 00101B => 00101

Rightmost: S => A1B => A10B => A101B => A101 => 0A101 => 00A101 => 00101