**SSN College of Engineering, Kalavakkam**

**Department of Computer Science and Engineering**

**III Semester - CSE**

# UCS 1312 Data Structures Lab Laboratory

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| **Academic Year: 2021-2022** | **Batch: 2020-2024** |
| **Assignment Date: 13.11.2021** | |

**Exercise 7: Expression Tree & its applications**

**[CO2,K3]**

Create a node that consists of a character, address to the left and right children. Convert the StackADT into AddrStackADT to store the address of node. Create Expression Tree ADT with the member S of type AddrStackADT. It has the following operations.

void construct(ExpTree \*t, char \*postfixexp)

void inorder(ExpTree \*t)

void preorder(ExpTree \*t)

void postorder(ExpTree \*t)

1. Demonstrate the ADT with the following test case

Input: 45\*6+

Output: Address of node + in S

**+**

/ \

\* 6

/ \

4 5

Inorder: 4\*5+6

Preorder: +\*456

Postorder: 45\*6+

2. Write an application to use the Expression ADT

* To evaluate the expression

Test the application with the following test case

Input: 45\*6+

Output: Address of node + in S

**+**

/ \

\* 6

/ \

4 5

Value: 26