**Algorithms and Data Structures (BSCS-3A & B)**

**Theory Assignement-2: (Write the algorithms of the following tasks and explain with example).**

**Lab Assignment-2: (Write the C language code for each task).**

**1. Palindrome checking by Stack of Array, Singly and Doubly Linked List.**

**2. Checking for Single type balanced braces by using stack. i.e. ((())).**

**3. Checking for multiple type of balanced braces by using stack. i.e. [{()}]**

**4. Write a C/C++ language code to convert the infix expression to postfix expression.**

**5.** **Write the C/C++ language code to evaluate the postfix expression.**

* + 1. **6. Pizza Hutt** accepting maximum **M orders**. Orders are served in **first come first served basis**. Order once placed cannot be cancelled. Write C++ program to simulate the system using circular queue by array. Also explain the reason why you opted the circular queue instead of simple FIFO queue.
    2. **7. Pizza Hutt** changes its policy and adds one more constraint in their policy. The changed policy is based on **customer age** and now the **elder customer** will be served earlier and for equal age **FIFO** will be applicable.

**8. Pizza Hutt** management decides to have two serving units with following constraints:

**a.** There will be only one row for waiting customers.

* + 1. **b.** Customer can come either on front of the row or at rear but not at middle.
    2. **c.** Customers can be served either by front counter or rear.