

BCSE II – Data Structure and Algorithms Lab

Assignment – 4

Problems 1, 2 and 3 will have to implement stack. Use linked list to implement the stack.

1. Write a program to use a stack to read an integer and print its prime divisors in ascending order.
2. Write a program to examine whether the pairs of parenthesis "(", ")", "[", "]", "{", "}" in an expression string are correct in order.

For example: for input expression "(){(())}", output will be **Balanced**, while for input expression "()(())}", output will be **Unbalanced**.

3. Implement a Polish Notation calculator that will read a Polish Notation expression from a file (specified as a command line argument) and display the result of performing the computation.
4. Write a function making suitable queue ADT calls to solve each of the following problems:
 - (a) Given a string, check if it is of the form $w\#w$, where w is a string with alphanumeric characters only.
 - (b) Given a string, check if it is of the form ww , where w is a string with alphanumeric characters only.
 - (c) Given a string, check if it is of the form $w\#w'$, where w is a string with alphanumeric characters only, and where w' stands for the reverse of the string w .