

Assignment Sheet-1 on Data Structure using Python Language
Data Science Class : PG Sem-1 : 2022

1. Write a program in Python to implement Merge Sort method to sort 'n' elements in ascending order. The program should display step by step partially sorted array. It will also display how many comparisons taken to sort 'n' elements in ascending order. The input list must be worst case such as a $= [100, 90, 80, 70, 60, 50, 40, 30, 20, 10]$.
2. Write a program in Python to implement Stack operation in a list. Use push() operation which will allow to add element in a stack and use pop() operation to take out element from a stack. Try to write a menu driven program to create a list or to remove element from a list.
3. Write a program in Python to convert an infix expression to postfix expression and also it will calculate the value of the expression. Choose infix expression $y = 5 * 2 + 9 / 3 * 3 - 3^2$.
4. Write a program in Python to create a simple Queue where the data to be entered at the rear position and data to be taken out from front position only. Write a menu driven program which will allow an user to create a queue and also allow to take out element from the queue.