

1. Design the Stack Using Generic Class that can contain any type of data. Implement the insertion, deletion, peek function.
2. Design the Queue Using Generic Class that can contain any type of data. Implement the insertion, deletion methods.
3. Write a Generic Method that can perform the sorting of any type of data.
4. Write a generic method that computes the Second minimum and Second maximum elements of an array of type T and returns a pair containing the minimum and maximum value.
5. Write the following methods that *return a lambda expression* performing a specified action:

*isOdd()*: The lambda expression must return true if a number is odd or false if it is even.

*isPrime()*: The lambda expression must return true if a number is prime or false if it is composite.

*isPalindrome()*: The lambda expression must return true if a number is a palindrome or false if it is not.

6. Write a methods [double operation(double a, double b)]; ] that return a lambda expression implement a calculator perform Addition, Subtraction, Division, Multiplication operation.
7. The Ceasar cipher is a basic encryption technique used by Julius Ceasar to securely communicate with his generals. Each letter is replaced by another letter N position down the English alphabet. For example, for a rotation of 5, the letter 'c' would be replaced by an 'h'. In case of a 'z', the alphabet rotates and it is transformed into a 'd'. Write a methods that return a lambda expression implement a decoder for the Ceasar cipher where  $N = 5$ .
8. Write a program to create a thread using a lambda expression.