# Title:

ASSIGNMENT NO: 08

Roll No.

Name of the Student: Batch:

Date of Submission:

Demonstrating the implementation of Standard Template Library (STL) in C++

# Problem Statement:

A shop maintains the inventory of items. It stores information of items like

* Item\_Code
* Item\_Name
* Item\_Quantity
* Item\_Price per unit in a list of STL.

Whenever Customer wants to buy an item, sales person inputs the Item\_Code and /or Item\_Name. Then the system searches item in a list. If item is present then Item details get displayed to users otherwise an appropriate message is displayed as “Requested Item is not available”.

If item is available, then the system displays the item details and request for the quantity of items required to purchase.

If the requested quantity of items is available, the total billing information with cost of item is displayed; otherwise the message is displayed as “Required item’s Quantity is not in stock”. After purchasing an item, system updates the list.

Design a system using a class called Items with suitable data members and member functions. Implement menu driven C++ program for the inventory system using STL list.

# Data Members:

* Item\_Code
* Item\_Name
* Item\_Quantity
* Item\_Price

# Member Function to perform the operations as

* Create STL list and store Record of Items
* Search an Item in the file by Item\_Code or Item\_Name(Searching)
* Display Item Information
* Purchase an Item and Display Billing Information
* Update the file(Insert and delete)
* Arrange the Items by Item\_Code or Item\_Name(Sorting)

# Objectives:

1. To learn the concepts of STL in C++ that can be used to implement data structures and algorithms
2. To learn the use and working of vectors, list and queue container of STL
3. To learn insert, delete, and return data items in list container.

# Theory:

Introduction to STL

List, Stack and queue containers

List container algorithms / functions with syntax and example

# Algorithm / Class Diagram / Implementation/ Procedure:

1. START
2. Create Item class and its object
3. Store the items information into the list using object of item class
4. Insert the item information (Item\_Code, Item\_Name, Quantity and price) in a list using push\_front() and / or push\_back() function..
5. Input Item\_Code or Item\_Name from user to search Item record.
6. If Match found then display the complete record of Item (Item\_Code, Item\_Name, Quantity and Cost).
7. Else Display Message that Record not found.
8. Input no of quantity to purchase and display billing information else display message “Stock insufficient”
9. Update records after successful purchase operation
10. Display the sorted list of items.
11. Delete the item information (Item\_Code, Item\_Name, Quantity and Cost) in a list using pop\_front() and pop\_back() function if zero item quantities present in staock.
12. STOP

# Platform:

**Input:**

* 64-bit Open source Linux or its derivatives.
* Open Source C++ Programming tool like G++

Students can write program input after execution of implemented program solution

# Output:

Students can write program output after execution of implemented program solution

# Conclusion:

Thus, understood the use of Standard Template Library features and implemented the Item Inventory Management System using List container.

# FAQs:

1. What is STL?
2. What is container? Explain different types of containers
3. Explain stack and queue?
4. Which are different member functions of stack container?
5. Which are different member functions of queue container?