1. **OBJECTIVE**

This assignment is to test your understanding of the key concepts in the Data Structures and Algorithms module and to evaluate your ability in the selection, design and implementation of appropriate data structures and algorithms in a C++ application.

1. **INTRODUCTION**

In alignment with Singapore government’s push for digitalisation in the service industry, an established restaurant chain is commissioning the development of a food ordering system for its restaurants. The system aims to provide a convenient and efficient way for customers to know about and search for food selections available, place food orders, and track the status of their orders. The restaurants will also make use of the system to keep track and process the orders efficiently, customer profiles and enhancing customer experience through a loyalty points system. Useful reports can also be generated by the system to help the restaurant chain to further improve its food offerings and services.

You are to form a team of TWO (2) and implement a food ordering system using C++.

The basic forum should allow the user to:

* Register for and log into an account
* Browse all food selections offered
* Create new order
* Cancel order (only when not prepared yet)

A text driven user interface is adequate for the system for now. However, it must be user friendly.

**Note 1:** You are **NOT** to make use of the Standard Template Libraries (STL) from the C++ standard library for the implementation of your data structures and operations.

1. **BASIC REQUIREMENTS**

The application must:

* Make use of at least two **data structures**
* Demonstrate the **application of algorithms** learnt (e.g. searching)

The data structures and algorithms chosen should be appropriate for your application.

The suitability of your chosen data structures and algorithms, the complexity and user friendliness of the application will determine how well you score in this section.

1. **DELIVERABLES**
   1. A **report** in Microsoft Word document format that clearly indicates:
2. Team members’ names, student IDs and group name
3. A brief description of the application
4. Roles and contributions of each member in the group
5. **Instructions** on how to run your application
6. Class Diagram
7. Description of data structures and algorithms implemented
8. Detailed explanation of why the data structures and algorithms are selected.
9. All relevant appendices (diagrams, screenshots, user guides, etc.) wherever appropriate
10. References for any non-DSA materials used in the report and/or application