**Module: List**

List is a data structure that arrange its elements in a linear order. Common functions of List are insert an element into a list, delete an element from a list, search if an element is in a list, display all elements in a list and return the number of elements in a list. List can be implemented using array and pointer.

Learning outcome:

* To design and develop pointer-based List based on the given ADT
* To apply List for solving problem

Exercise 1: Singly-linked List

1. **Draw a UML class diagram (including the associations)** for a class, StaffList, that implements List data structure for objects of class Staff (as describe in the previous Tutorial Module). StaffList should include functions that perform insertion and deletion.
2. **Write** StaffList class using C++ programming language. Include error handling necessarily.
3. **Write and execute** a program that stores the following Staff in a StaffList object using

StaffListfunction.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Staff number** | **Faculty/Division** | **Age** |
| Min Ho | 143 | Medicine | 30 |
| Ji Woo | 437 | Agriculture | 42 |
| Fattah | 321 | Aeronautic | 26 |

1. **Display** the names and faculty/division of all elements in StaffList.