Practical 4 (Weeks 5&6)

Task 4.1: Change the code "task3_1.cpp" to OO-style by create a class, named "OneDArray", with an array of int and numberUsed as data members and the existing function as a method. Add more data members or methods if needed. Simplify the main function as a class driver (the shorter the better).

Task 4.2: Create a class called **Student.** The class includes four data items: *studentId*, *studenName*, *courseNo* and *enrolmentstatus*. Define a constructor to get the values of the data members and a member function named *void display()* to display the values of the data members. Write a class driver to test your class.

Task 4.3: Use OO paradigm to redo Task 3.4 of Practical 3. Create a class with at least a data member for storing seats availability. The data member must be a two-dimensional array. Your class must also contain a constructor and at least two member functions: one for seat booking and the other for displaying seat availability status.

Task 4.4: Download the code *TicTacToe.h*, *TicTacToeImp.cpp* and *TicTacToeApp.cpp* from vUWS. The program allows users to play TicTacToe in a computer by inputting the coordinates of their moves. It is runnable but one of the functions, *gameStatus()*, has not been implemented thus the program is unaware even if a player has won or the game has been in a draw. Add your code to complete this function so that the program can check if a player has won or the game has been in a draw. Note that the function takes a *status* as return, which is an *enum* data type defined in the file *TicTacToe.h*. In other word, if a player wins, return WIN; if the game is in a draw, return DRAW; otherwise, return CONTINUE.

Task 4.5: Based on the original code of TicTacToe in **Task 4.4** (without the implementation of *gameStatus(),* change the code so that it can enlarge the TicTacToe board to any size of square board. All member functions, except *gameStatus(),* must work properly with any setting of board size. The board size can be set as a global constant, say

```
const int BOARDSIZE = 10;
```