CIS2344 Algorithms Processes and Data

# Practical 11: pointers

## Activity 1 (Portfolio Task):

Implement classes **Student**, **Module** and **StudentSupportOffice** that provide the following functionality:

* Class Student:
  + Stores student id
  + Creates a human friendly representation of the class (i.e. toString())
  + Allows a total ordering of students (i.e. students are Comparable)
* Class Module:
  + Stores module id, a class list (an array of enrolled students with default capacity for 5 students), and the current size of the class list
  + Allows students to be enrolled if a student is not already in the class list (while maintaining the class list in ascending order based on student id)
  + Allows students to be unenrolled (the class list must not have gaps that “break” the sequence of enrolled students)
  + Creates a human friendly representation of the class (i.e. toString(), improve print outs by ignoring empty elements within the class list)
* Class StudentSupportOffice:
  + Creates three modules: "CIS2344", "CIS2360" and "CIM2130"
  + Creates five students: "U0000001", "U0000002", "U0000003", "U0000004", "U0000005"
  + Enrols/unenrolls students to modules as described below

Initially, students enrol to modules:

* Module "CIS2344" contains in its class list:
  + Student "U0000001"
  + Student "U0000004"
* Module "CIS2360" contains in its class list:
  + Student "U0000001"
  + Student "U0000003"
  + Student "U0000005"
* Module "CIM2130" contains in its class list:
  + Student "U0000003"
  + Student "U0000004"
  + Student "U0000005"

Subsequently, students change modules (enrol and unenroll). Finally, modules contain the following students:

* Module "CIS2344" contains in its class list:
  + Student "U0000001"
  + Student "U0000002"
  + Student "U0000003"
  + Student "U0000004"
  + Student "U0000005"
* Module "CIS2360" contains in its class list:
  + Student "U0000001"
  + Student "U0000002"
  + Student "U0000005"
* Module "CIM2130" contains in its class list:
  + Student "U0000001"
  + Student "U0000003"
  + Student "U0000004"

Discuss your progress with your Tutor during practical sessions.

**What to include in your Portfolio:**

* **Report:** Describe in your report which parts of **Activity 1** have been successfully implemented
* **IntelliJ Project:** Include your Java code for **Activity 1** in your IntelliJ project under package "Practical\_11"