A	**TTTK1143: PROGRAM DESIGN AND PROBLEM SOLVING** **INDIVIDUAL ASSIGNMENT: CLASSROOM APPS**

In general, all schools have classroom, teachers and students. And they have some relationships such as teachers teach certain subjects to specific classrooms. Classroom consists of a group of students. No students can be in more than one classroom at a time. Normally one teacher will be appointed to handle one classroom. And some other general situation.

Classrooms in a school

Based on the above statement of problem, basically there are three main classes (you can add more):

- Person class with subclass teacher and student
- Classroom
- Other suitable class

Based on these classes, identify all related attributes and methods so that, it fulfills the following **requirements**:

- Every class must have a class teacher, its location information and maximum number of students it can occupy.
- All students belong to one of the classes.
- Some of the teachers will be class teachers.
- All teachers must teach at least one subject to at least one classroom.
- Class teacher can be assigned to any of the class at any time.
- Students can be switched to other classroom.
- ….. other related requirements

Please record the latest information of Classrooms (including all other objects) in a **file**. Any time you run the program, allow the user to either continue with the previous information, or start fresh.

Your main method (a.k.a ClassroomApps) allows the user to:

- Create classroom, student, and teacher or, Read information from a file.
- Appoint teacher to be a classroom teacher and, end appointment as a classroom teacher.
- Change student classroom.
- List information of any selected classrooms
- List classroom teacher
- List selected teacher information
- List information of any selected student
- Other suitable functions.

DELIVERABLES AND SUBMISSION

- In your solution please ensure that you apply the concept of inheritance, overloading polymorphism (overriding and interface), file input-output and GUI.
- Deliverables:
    1. All java programs and data files
    2. Documentation that consists of: (1) UML class diagrams-handwritten, (2) Input and Output screen design, (3) input and output file format, (4) Guide to run the Apps (5) any other assumptions that you made.

GRADING CRITERIA

- Documentation
- Error free Java program (syntax error free, logical error free, runtime error free)
- Nice GUI
- Correctness of program according to the requirements.

-GOOD LUCK-