Faculty : Mr. Tarek Mizan

Lab Instructor: Nazmul Alam Diptu

Email : nazmul.diptu@northsouth.edu

Class Timing: ST 1:00 PM – 2:30 PM (LIB-611)
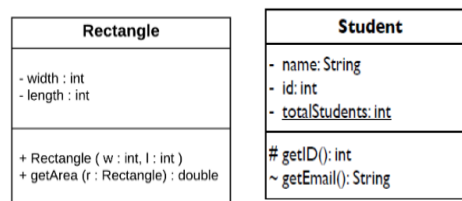
Topic: Objects & Classes

Objective

1. To use UML graphical notation to describe classes and objects
2. To demonstrate how to define classes and objects
3. To access objects via object reference variables

A UML class diagram is a picture of

- the classes in an OOP system
- their fields and methods
- connections between the classes that interact or inherit from each other

Course.java

```java
public class Course {

    private String courseName;
    private String[] students;
    private int numberOfStudents;

    public Course(String courseName) {
        this.courseName = courseName;
        students = new String[3];
        numberOfStudents = 0;
    }
}
```

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Topic: Loops, Jump

Tasks:

1.
   - The program I demonstrated using the Course class, was having a fixed size of array. Now, revise the program so that it automatically increases the array size by creating a new larger array and copying the contents of the current array to it.
   - Implement the dropStudent() method.
   - Add a new method named clear() that removes all students from the course.

Now write a test program that creates a course, adds three students, removes one, and displays the students in the course.

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Quiz 02 Time : 30 min

Tasks:

⚠️ **Project Name should be your nsu_id_full_name and project should be placed under insight folder in C drive**: Failling to follow the instruction and any form of academic dishonesty would count as invilid submission.

1. Given a file called input.txt contains a list of texts separated by line. Each line contains two words. Write a method isAnagram(String word1,String word2) which reads words from each line and returns true if words are anagram and false otherwise. From the main method save all vaild anagram text in output.txt file seperated by a line. Now create a Junit test for this method and perform the necessary tests.

ℹ️ **An anagram** is a word or phrase formed by rearranging the letters of a different word or phrase, typically using all the original letters exactly once. For example,cat into ate, listen into silent.