Logo

Description automatically generated

**22/SU-COP-2805C-72035 Java Programming**

**Exercise 10.9**

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# Document Version Control

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# Document Purpose

The purpose of this document is to define the Course() class.

# Technical Specifications

## Purpose of Technical Implementation

The purpose of this implementation is to provide the user with the ability to create and modify specified courses.

## Technical Implementation Components

The class creates a default array that has a default size of 100. If the number of students for the course exceeds this number, the class will update the size to be double the original.

*public* void *addStudent*(String student){

*if*(this.*numberOfStudents* >= this.*students*.*length*){

            String temp[] = *new* String[this.*students*.*length* \* 2];

            System.*arraycopy*(this.*students*, 0, temp, 0, this.*students*.*length*);

            this.*students* = temp;

        }

        this.*students*[this.*numberOfStudents*++] = student;

    }

The class also provides the drop student method that will remove the specified student and rearrange the array to have an updated list with the removed student absent.

*public* void *dropStudent*(String student){

*for* (int i = 0; i < this.*students*.*length*; i++){

*if*(student.*equalsIgnoreCase*(students[i])){

                this.*students*[i] = null;

                numberOfStudents--;

*while* (i < numberOfStudents) {

                    students[i] = students[i + 1];

                    i++;

                }

*break*;

            }

        }

    }

The class also has the clear method that will remove all elements in the specified array. This will maintain the size of the current array. Otherwise the user can call the clearAndReplace() method that will just create a new array.

*public* void *clear*(){

*for* (int i = 0; i < this.*students*.*length*; i++){

            this.*students*[i] = null;

        }

    }

*public* void *clearAndReplace*(){

        this.*students* = *new* String[100];

        this.*numberOfStudents* = 0;

    }

## Course Implementation

The implementation of this class allows the user to create a course with a specified number of students. The class will then allow the user to update the number of students including removing and adding.