

## ENSF 607 – Advanced Software Design and Architecture

### Midterm - Fall 2021 (30 Marks)

Friday November 5, 2021

11:00 AM – 1:00 PM

You are asked to modify the architecture of a simple desktop application, by making it into a client-server application.

#### What to do:

Download the following 4 .java files for a simple string manipulation app from D2L:

- StringController.java
- StringModel.java
- StringView.java
- MVCString.java

Your task is to change this software into a distributed application which has a client-server architecture.

Your finished application must adhere to the following requirements:

1. Your application must follow a client-server architecture **(10 Marks)**.
2. The clients and server must only communicate through sockets **(2 Marks)**.
3. This application must be available to multiple clients at once **(5 Marks)**.
4. Your application must follow the MVC design pattern **(5 Marks)**. Note: marks will be deducted for redundant components included in the client or server.
5. Error checking must be done **(2 Marks)**.
6. You must also add the functionalities to convert to upper and lower case for your application **(1 Mark)**.

Note: object serialization is not required.

#### What to submit:

1. Submit **paper copies** of the following UML diagrams (Your UML diagrams do NOT have to show any attributes or operations):
  - a. UML diagram of the existing system **(2 Marks)**
  - b. UML diagram of the client-server application **(3 Marks)**
2. Submit all your .java files on D2L. **(25 Marks total as noted above)**