CSC496/CSC584 Web Technology
Winter 2018-2019
Project Assignment Specifications

In the winter session, you need to complete FOUR project assignments and obtain screen prints in a Word document to demonstrate your result of the projects, respectively. You do not need to demonstrate to the instructor how your program works. For all projects, you only need to submit the Word documents to the Assignment folders via D2L with screen shots as specified below. It is highly recommended that you work on these project on a Windows Machine with Visual Studio 2017 (any edition). The first three projects can be completed with a Mac OS X machine, but the last one must be using a Windows machine. As of now, the Entity Framework Core 2.0 does not generate database tables successfully under Mac OS X.

1. Project 1 – Razor Page Project. (1) Follow the Online Tutorial to complete all steps regardless if you are using Windows or MAC OS X from *Getting started with Razor Pages*, *Adding a model*, *Scaffolded Razor Pages*, *SQL Server LocalDB* for Windows or *SQLite for Mac OS X*, *Updating the Pages*, *Adding Search*, and *Adding a new field*. (2) Modify the footer to include your own name as part of the copyright statement, (3) Submit several screen shots: the one without "Rating" and with new movies, the one with the "Rating" field, the one with an updated rating, i.e., change the rating of one of the movies and take the screen shot to show "before" and "after". (4) (CSC584 only) *Adding the Validation* step is required.

2. Project 2 – ASP.NET Core MVC Web Application
   The goal of this project is to go through the process of developing a WCU Student MVC Web Application with an in-memory database. You need to submit screen prints to demonstrate the list of students in the database. For Windows, you need to include the SQL Database Explorer screen for "showing data" in the "Students" table. For Mac OS X users, you need to use Firefox Database Management tool to show all data in the table.
   a. Define a model for a WCU Student including: Name, Major (a single major). Define the WCUStudentContext for the database.
   b. Define a "Students" table in the WCUStudent.db.
   c. Define the CRUD operations
   d. (CSC584) Define a Search by title operation web page

   Submit a Microsoft Word document in PDF format with screen shots (added on January 8, 2018).

3. Project 3 – ASP.NET Web API
   We will develop a RESTful web service for returning WCU Student model with the student name, and the major. Change the Web API to implement a StudentInfo in-memory database with one table StudentRecords. Each Student record is represented

by (1) id (integer, primary key), (2) Name (string, 20bytes), and (3) Major (string, 10bytes long).

    a. Define the same model as in Project 2 to include the Name and the Major of each student.

    b. Develop a WEB API RESTful service project and return the Name and the Major of each student in JSON format.

    c. Use Postman tool to demonstrate the functions of Get and Post. Take screen shots.

    d. You need to support the following route for CRUD operations:

        i. http://localhost:5000/api/student (GET all students with POSTMAN)

        ii. http://localhost:5000/api/student/1{id} (GET a student record by ID)

        iii. http://localhost:5000/api/student (POST one student with Postman)

        iv. http://localhost:5000/api/student/{id} (UPDATE an existing student name with Postman)

        v. http://localhost:5000/api/student/{id} (DELETE a record with Postman)

Submit a Microsoft Word document in PDF format with screen shots of using Postman for the CRUD operations.

4. Project 4 –Data Access Layer (Required: Use Windows-based machine)
   Our goal is to learn how to develop a data access layer (DAL) using the Microsoft Entity Framework Core 2.0.

    a. Define the data Access Layer with the Entity Framework Core 2.0.

    b. Develop test cases to demonstrate that your data access layer works.

    c. CSC496 students need to use the WCUStudent models. CSC584 students need to complete the previous steps a and b without using the WCUStudent model.

Please submit a Microsoft Word document in PDF format with screen shots showing your database table contents using the SQL Explorer, and the test file with the last few test cases being displayed in the text editing area of Visual Studio 2017.