PROG8170–Software Quality Techniques: Spring/Summer 2021

Assignment 04

[Maximum points: 75]

Please refer to eConestoga for Due Date details

This assignment should be done individually. Do your own work and do not share your work with others. Sharing work is an academic offense and is subject to penalty. Be aware that documents are automatically checked by eConestoga against every other student's work in the course as well as resources on the internet. Academic offenses will be reported to the College Registrar.
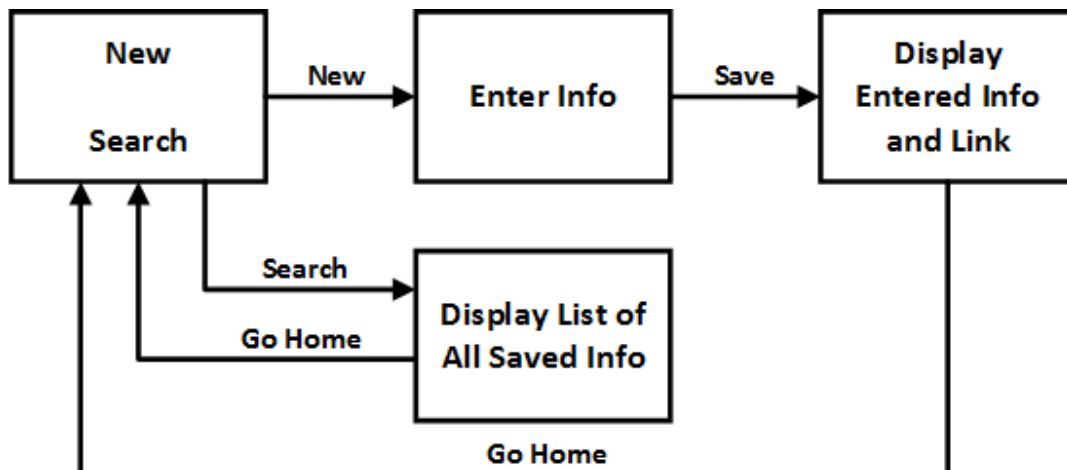
In this assignment we will move from unit testing, and integration testing, into system testing. To this end, you will construct a prototype of a browser-based Web application.

Task 1: HTML/CSS/JavaScript Web Application [20 Marks]

The application allows you to enter new information, or search for saved information. The application's basic idea is to create a list of contacts in a standard HTML form on a Web page. Some validation of the input is necessary, which must be done using JavaScript or HTML5 (Note: You may find it easier to use Selenium to test for an error message created in JavaScript, rather than testing for HTML5 validation. Though the latter can be done). Once the information is validated, the contact information will be saved.

After saving, the saved information will be displayed as a hyperlink; clicking on the hyperlink will cause the application a page that contains the contact information and allows the user to remove the contact.

If the search option is selected from the home page, a list of all the previously entered contacts is displayed.

The implementation details of the application are left to you; however, you may not use any web application frameworks (i.e. Dreamweaver, Wordpress, etc.) to build the page/site. You must implement everything by hand-coding the HTML, CSS, and JavaScript code.

The prototype is to meet the minimal requirements of:

1. Validating the form's input fields
2. Saving the data to an HTML5 local data store on the client (or any other method of saving)
3. Displaying the previously entered contact information
4. Displaying a list of previously saved data

Your application must require the following **mandatory** input fields:

- Contact name (separated by First Name and Last Name)
- Address
- City
- Province
- Postal Code (Acceptable format: NAN ANA – where "A" is any alphabetic character and "N" is a valid numeric digit)
- Phone number (Acceptable formats: 123-123-1234, or (123)123-1234)
- Email address
- Notes field

Task 2. System Tests Using Selenium with the NUnit Test Framework [50 Marks]

Create at least ten system test cases (using the Selenium Web Driver and NUnit) to test your application. As ideas for your system tests, you may create tests to check:

- Valid contact information is displayed
- Either an error or some other behaviour is detected
- The application properly detects an invalid 10-digit telephone number
- The application requires all fields be mandatory
- Etc…

There is no need to test your application with anything other than Chrome (or Firefox) as your Web client. You will run all of your tests through Test Explorer in Visual Studio. Please ensure to use the proper naming and formatting conventions for the tests. You will also need to host your web application on a web server such as Apache, IIS or XAMP.

For this assignment you must use a form of version control. You must use Git through Git Bash or GitHub. Provide a screenshot of at least three commits you have made. **[5 marks]**

Submissions
The format for submitting the assignment is as follows: eConestoga submissions:

1.MS Word named FirstName_LastName_StudentID_Assignment4.docx document containing (in this order):

- Assignment Title Page with your name, student ID, "Assignment #4" in the title and date
- Screenshots of your working application (all pages), with form fields populated
- A screenshot of your commits from the Version Control System (Git/GitHub).
- Source code for all C# system tests
- Your HTML, CSS and / or JavaScript source code for your application
- A screenshot of your Test Explorer console that shows all your tests passing (make sure test names are fully visible)

2.Source Code (zipped): A single compressed (.zip format) archive file containing your source code for your website (along with any instructions on how to deploy it), and test case code.

> **NOTE:** Your tests must run on my system to achieve full marks.

Do not include the MS Word document in the .zip file - keep them separate (-10% penalty if otherwise)

Please submit to the **"Assignment 04"** assignment folder in eConestoga.

Grading and Submission Deadline details can be found in eConestoga

Late Penalties:
Late assignments will receive the following penalties:

Days Late	Penalty %
1	5
2	10
3	20
4	40
5	60
6	80
7	100