

# PROG8170

## Programming: SQA Techniques

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### Midterm Exam Preparation

*This is an individual based assignment and is meant to help prepare students for the upcoming midterm. This will **NOT be assessed**, but if you want feedback, please provide your submissions into the "Midterm Practice" assignment folder in eConestoga no later than 48 hours prior to your exam time.*

*It is also highly suggested and recommended that you record yourself through a brief (5-10 minute) Zoom meeting showing your computer screen as you're working through one or more of these questions so that you can ensure that your systems are properly working.*

*There are three (3) questions in this practice.*

## Question #1 – Test Case Development

Develop five (5) test cases for the following requirements for a software system for a Meme Generator web site:

- The website will allow a user to create an account by way of a username (email address) and a password.
- Users do not need to have an account to create memes but if they do have an account, then, they can choose to save their memes for a period of 90 days – after which, the memes are deleted by the system.
- The meme generator allows for at most 50 characters with a minimum of 5 characters.
- Characters can be entered / placed at the top or bottom of the image (or a combination thereof).
- Users can select from a variety of built-in images or upload their own when creating their meme.
  - When uploading an image, an upper size limit of 5MB is in effect.

Ensure to develop your test cases in a tabular format showing the Test ID, Test Steps and Expected Outcomes for each test.

Provide your results in a MS Word document within a section called “Question #1”.

## Question #2 – Test Execution / Defect Logging

From an exploratory testing view, test the Midterm Practice application located in the same module as this file in eConestoga. Download and unzip this file on to your harddrive – instructions are provided below on how to setup / use this file.

For this question you will need XAMPP and Azure DevOps.

After starting Apache in XAMPP, follow the following steps:

1st Step: Extract all of the files from the .zip into the XAMPP\htdocs folder.

2nd Step: Open a browser and go to the URL "http://localhost/midtermpractice/"

Once you’ve downloaded this file, find and report five (5) defects and one Feature Request using Azure DevOps.

Once you’ve found all the issues with this application, you will then submit all of your issues (defects + FR):

- as individual screenshots
- a query showing the following fields (in order):
  - ID
  - Title
  - Severity
  - Area Path
  - Created By:
  - Created Date:
- as well as an overall view – a pie-chart of all of the defects grouped by Severity

Finally, include a recommendation with a brief reasoning regarding releasing this application.

Provide your submission in the same MS Word document (but clearly labelled as “Question #2”) as the previous question.

## Question #3 – Unit Testing

Using Visual Studio, develop a .NET Framework Console application in C# that will take in three decimal values. The program will then determine which of the three numbers is the largest as well as the smallest and print out strings to these effects.

Provide a user interface (through the Console application) that would allow the user to enter the individual numbers.

Within your program, create a class called “DetermineMinAndMax” and the following two methods:

- a method called “MaxValue”. The “MaxValue” method will perform the task of checking the input values and returning the appropriate string output message as to which of the numbers entered is the greatest.

- a method called “MinValue”. The “MinValue” method will perform the task of checking the input values and returning the appropriate string output message as to which of the numbers entered is the smallest.

After having created your two methods, develop seven (7) unit test cases for each - for a total of fourteen (14) unit tests that provide full code coverage of these methods. Run your unit test cases in Test Explorer and take a screenshot of the results – showing each test running (be sure to capture the full name of each test in your screenshot).

Submit your full code of the console application, class, and unit tests by copying the code in Visual Studio and pasting into the same MS Word document used for the previous questions (but in a section named “Question #3”). Include the screenshot of your test cases having been executed in this MS Word document.

Finally, include a .zip file with your Visual Studio solution for your application and corresponding unit test cases.

## Submissions

The format for submitting this practice in eConestoga is as follows:

- A single MS Word document, named:
  - **FirstName\_LastName\_StudentID\_MidtermPractice.docx** that contains:
    - Assignment Title Page filled in with your name, and student ID.
    - Answers to the above questions in their particular section
- A .zip file that contains your code for Question 3.
- A Zoom video file (in .mp4 format)

**Any submissions received after the due date (of 48 hours prior to your exam date) will not be responded to**