UNIVERSITY OF
LINCOLN

School of Computer Science
Assessment Package Briefing Document

Title: CMP1903M Object Oriented Programming: Assessment 3	**Indicative Weighting: 70% (Individual)**

Learning Outcomes:

On successful completion of this assessment package a student will have demonstrated competence in the following areas:

- [LO3] Apply object-oriented principles to the implementation of software programs

- [LO4] Use testing principles in the testing and debugging of object-oriented applications

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Complete this assignment individually.

This assignment will complete the implementation of the problem introduced in Assignment 2:

The coding task: Implementing a *git diff* type command in C#
Since Git is a version control system, tracking changes are something very vital to it. The `git diff` command takes two inputs and reflects the differences between them. It is not necessary that these inputs are files only. It can be branches, working trees, commits and more – however, we will only be looking at the differences between files here.

Your task is to implement a simple C# console version of the `git diff` command. For this assignment you should:
   a) Read in two text (.txt) files (i.e. `diff a.txt b.txt`)
   b) Report where the two files are different or report that they are not different
      a. Where is b.txt different from a.txt?
         i. Which line numbers?
         ii. Which characters have been added/taken away?
         iii. Can the changes be highlighted?
            1. Green for added, red for taken away
         iv. Provide a diff summary in a log file.

For example, if a.txt is `This is a file` and b.txt is `This is a short file,` then, in the console:

```
>: [Input] diff a.txt b.txt
>: [Output] Line: 1
>: [Output] + This is a short file
```

If a.txt is `This is a file` and b.txt is `This is file,` then:

```
>: [Input] diff a.txt b.txt
>: [Output] Line: 1
>: [Output] - This is a file
```

Multiple changes within a line and/or multiple line changes are possible for higher credit.

Files to test your solution will be provided.

In your solution you should show:
- Object oriented principles have been used:
  - Code commenting is a good way to show this in the code
  - Classes, object instantiation, method calls
  - Exception handling
  - Inheritance
- A log file has been created/added to, to summarise the diff command
- A report to show how you have tested your solution and the OO features used:
  - Include the test inputs, the expected and actual outputs
  - List the OO features used and where they occur in your code

Submission Guidelines

Please zip up your code file as a compressed ZIP file (**no RAR or any other file formats will be accepted. Please use the standard 'Windows Compressed File' zip format or other platform standard zip formats**) and should be submitted through Blackboard in the '*CMP1903M Assessment Item 3 Supporting Documentation Upload*' section of the Assessments
folder.

This assessment is graded using a criterion reference grid. You should be clear in your understanding of the grading principles; if you are not, please seek the advice of the module staff.

Hand In Instructions

See hand in schedule.
DO NOT include this briefing document with your submission.