Assessment 3- unit testing in C#

Learning outcomes: *1, 2 & 3*

Part A – **[60 marks]**

Consider the code for the doubly linked list provided to you in in moodle. The code includes two classes: *DLLNode* and *DLLList*. Develop a comprehensive unit testing to discover and fix all errors. Write at least 20 testing methods to insure the correctness of the methods and to have 100% statements coverage.

Marking criteria – unit testing assignment, part A		
Number	Criterion	Weight
1	At least 20 methods	(20X1) = 20%
2	Tidy up code and comments (unit testing code)	10%
3	100% statement coverage	10%
4	Good coverage: considering diverse and boundary cases	10%
5	Fixing the errors	10%
	Total	60

Part B – **[40 marks]**

Have a look at the methods: *addToHead*, *removeHead and removeNode.* For each one of these methods:

- Draw the respective CFG (control flow graph)
- List paths that forms a basis path set
- List the respective test cases.

Your final answers should be in a pdf document. You are allowed to use any tools to draw the CFGs and write the answers.

Marking criteria – unit testing assignment		
Number	Criterion	Weight
1	CFG: *AddToHead* – 5 marks *RemoveHead* – 5 marks *RemoveNode – 10 marks*	20
2	Basis path set *AddToHead* – 2 marks *RemoveHead* – 3 marks *RemoveNode – 5 marks*	10%
3	Test cases *AddToHead* – 2 marks *RemoveHead* – 3 marks *RemoveNode – 5 marks*	10%
	Total	40

Notice: for marking, you must attend the designated class and:

- demonstrate, explain and apply simple modifications to your code in part A.
- discuss, explain and answer questions related to part B.

Submission instructions: add your pdf document that answers part B to the folder of the project. Then, zip the folder and upload the zipped file to the relevant link in moodle.