CT101: Assignment 2 – Numbering Systems (Part 2)

This assignment is a continuation of the numbering systems topic and will follow the same format as Assignment 1. You should source some clear and concise examples, as before, and structure them in the form of a report. In each case, you should create **new** examples for your report.

Your report should include the following content:

- Describe two schemas for representing negative binary numbers in a computer system
- Describe what is meant by 9's complement and 10's complement using two 5-digit worked examples as part of your explanation of each
- Describe what is meant by 1's complement and 2's complement using two 5-digit worked examples as part of your explanation of each
- Outline the differences between *overflow* and *carry*. You should provide examples of each using 6-bit numbers of your choice
- Using an example, describe what is meant by exponential notation
- Illustrate how *Excess N Notation* works
- Outline the steps taken to represent a decimal fraction as a 32-bit floating point number
- Provide a step-by-step example of the addition of two floating point numbers of your choice
- Provide a step-by-step example of the multiplication of two floating point numbers of your choice

The report should again include appropriate headings, based on the content above.

You should spend some time trying to find useful and clear examples online (videos/tutorial websites etc.) and then create **your own examples** which clearly outline all the steps taken in each case.

The tutor will be able to help you with sourcing some useful examples and formatting the report but not with the content of the example themselves.

You have two lab sessions to complete this and you should submit your final report, with the appropriate headings, as a PDF file through Blackboard by **Friday the 5th of November @ 5pm**.