## Coursework Assignment - An Exercise in Problem Solving

Hand out date: Tuesday 20th October (week 6)

**Submission deadline: 5pm Friday 30th October (week 7)**

Your coursework assignment is to **select one of the problems in the Problem Bank** (available on NUServer & LMS) and write a short report describing your proposed solution as an algorithm. This coursework is worth 20% of your overall mark for the module.

You should incorporate ideas on problems solving, program construction and software design and development where possible (consult any of the text/reference books), but you should not include specific code fragments or class designs. Your report should include a description of the solution, **specifically how you would go about solving the problem to translate inputs for the problem into outputs that solve it** in the form of an algorithm. You should briefly present your analysis of the problem – for example you might mention specific constraints, any ambiguities in the problem description and resulting assumptions you’ve made, general approaches to solving similar problems and so on – **followed by your explanation of the steps, processes and approaches that you propose to solve it**. You should discuss any limitations or assumptions in your solutions and how they would impact on solving the problem. You should briefly justify your solution in terms of discussing why it is an adequate solution to the problem. The report should be specific and describe an algorithm – general or vague descriptions of basic computing approaches (e.g. “I would use a database”) will score low marks.

The written portion of the report should be brief and comprised of no more than 3 pages of A4 overall, using an 11-point font. It is strongly recommended that your written portion is not shorter than half a page as you may struggle to provide an adequate solution to the problem within a very short report. The report should begin with the cover page of the problem that you have selected where you should add your name and UB number, then on a second page you should begin writing your solution. Do not include any additional titles on the second page; just write your solution as described above. A third page in the report should include a flowchart or pseudocode description of your solution.

Some problems in the Problem Bank appear less complex than others and it may be tempting to choose what you consider to be the simplest problem for this coursework. Be careful with this approach! Less complex problems will give you less opportunity to demonstrate the depth of your problem solving and algorithmic development skills. A more complex problem with a less “perfect” solution may still show greater attainment of some module learning outcomes.

The marking scheme will be available on or before the hand out date – open it and study it as it tells you exactly how your solution will be marked and indicates the expected content and level of description for your solutions.

Your report should be submitted via LMS. Submission details will be announced soon. Note that the submissions will be checked for plagiarism using TurnItIn. **Late submissions without an agreed extension will receive a mark of zero.**

**IMPORTANT! This is an individual assignment and you should not work with anyone else on this. Do not give your solution to anyone else and do not take a solution from anyone else. If you use anything in your work that is not your own – and I do NOT expect you to do so – then you must make this clear by using an additional (fourth) page in your report describing what you have used that is not your own original work and where it came from. An appropriate referencing style should be used to cite the work of others.**