FIT3142 Distributed Computing Assignment Part 1: Distributed Computing Schemes

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1   Assignment Task Definition (100 Marks/10 percent)

Your task comprises the following:

1. Answer the following series of questions, based on relevant documents that you can find, other than FIT3142 lecture slides.

2. When answering the questions, ensure that you cover both functional considerations, and the programming abstractions used.

3. The answer to any question should not exceed 600 words, but also be no shorter than 400 words:

   (a) Summarise the differences between the BSD Socket InterProcess Communications and the ONC RPC schemes.

   (b) Summarise the differences between the CORBA scheme, and the Web Services scheme.

   (c) Summarise the differences between the GRID model and the Cloud Computing model.

4. **IMPORTANT: Note that the questions do NOT include "describe" or "explain" how the subject item works or what it does. Zero marks will be awarded for descriptions or explanations of the topical items, marks will only be awarded for actual answers summarising differences. If you "pad" your answers with descriptions or explanations, you will only be marked for the actual answers, not for any descriptions or explanations. If you answer a question by producing only descriptions or explanations your result will be ZERO marks for that question.**

5. In assessing items (a), and (b), and (c), students need to consider abstraction levels, protocols, encoding, APIs and functionality.

6. In assessing item (c), students need to consider abstraction levels, middleware, APIs and functionality.

7. The quality of English language grammar used in the assignment will NOT be marked. The structure, content, understanding, and referencing WILL be marked. Expect to cite at least 3 to 4 references per question.

8. No additional marks will be given for assignments that are over the specified length. If the assignment is more than 50% longer than specified, the total mark will be decreased by 10% for every excess page in the report. Reports that are shorter than the minimum will lose marks in proportion to reduced content.

9. *Pasting from websites is NOT permitted. Please include all references and use proper citation technique. Failure to properly cite will result in the loss of marks. Failure to cite will be considered to be plagiarism (see below). If citations by word count are more than 10 percent of the total word count, marks will be deducted for a lack of original content.*

10. *IEEE Transactions* templates for MS Word and LaTeX are available here: `https://www.ieee.org/publications_standards/publications/authors/author_templates.html`

11. Referencing conventions are IEEE format (numerical). References will be marked on quality, quantity and relevance. Please do not cite blogs, newspapers, popular magazines, popular tutorials or other amateur sources as their content may be in error. Marks will be lost for poor quality references.

12. Time budgeting is important. Plan your time carefully and start early if possible on the assignment.

13. Provide clear references for any theories, arguments, claims, diagrams, equations and any related material that you get from elsewhere.

14. *You will then submit a* **PDF** *format assignment, in a single file which includes your student number, name, the report and the references. Please do NOT submit Word files, text files or* scanned images *of paper pages. If you submit in a format other than* **PDF**, *your assignment will NOT be marked.* The format is A4, with 1.5 cm left and right margins, 10 point sanf serif font (eg Helvetica or Arial).

15. Learning objectives: this assignment is intended to provide you with experience in independently collecting and understanding research materials, as you will be expected to do in industry jobs. The use of the books, information found on the web and other journal and conference papers is important. The assignment provides an opportunity for you to test your understanding of basic ideas in Distributed Computing against real world examples.

2   Submission Checklist

Submit an electronic copy of this work by 16:00 hrs Friday, Week 7 via Moodle.

The report must be in PDF format, MS Word will not be accepted.

All files must be named using the convention `MyStudentNumber-3142-Ass-1.pdf`. Marks will be deducted for bad formatting if naming conventions are not followed.

Late submission without a good reason agreed in advance of submission due date will result in a penalty deduction of 10 marks per calendar day or part thereof. If you believe that your assignment will be delayed because of circumstances beyond your control such as illness you should apply for an extension before the due date. Medical certificates or certification supporting your application may be required.

It is an academic requirement that your submitted work be original. Zero marks will be awarded for the whole submission if there is any evidence of copying, collaboration, pasting from websites, or copying from textbooks. All work will be checked using the Turnitin system which has a 100% success rate in detecting copying off the web and between students. Previously, students who plagiarised have been referred to the disciplinary commitee.

1. One PDF report as detailed above.

Revision Status:

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