SIT113 – Cloud Computing and Virtualisation Trimester 2 (2018)

Assignment Task 3 - Problem solving task – 10%

Due Date: End of Week 10 - Sunday 11:55PM

Assessment

- As stated in the unit guide, each successful SIT113 student must achieve all unit learning outcomes (ULOs). These are in the Unit Outline.
- Only ULO3 will be assessed using Assessment Task 3.
- The percentage breakdown of each ULO across the four summative assessment tasks, and the overall percentage weighting of each ULO are specified in the following table. A weighting value in a row is the sum of percentages within that row. For example, ULO3 is assessed in Task 3 and Task 4 (10% and 25% respectively), and 35% of marks for this unit are available from ULO3.

	Task 1 (Online Quizzes)	Task 2 (Written Report)	Task 3 (Problem Solving Task)	Task 4 (Exam)	Overall Weighting
ULO1	20%			10%	30%
ULO2		10%		25%	35%
ULO3			10%	25%	35%

- As indicated in the above table, the assessment of Task 3 (Problem Solving Task) relates to ULO3, and provides you with the possibility of obtaining up to 10 of the 35 marks associated with ULO3.

Instructions

- Each student is required to individually solve several problems and place their solutions in a document. Your document should include text, diagrams, and, if necessary, citations and a reference section.
- Place your name and IDs in your document.
- Please note that a Word (docx) document is expected to be submitted via the Submission link in the SIT113 unit portal – Week 10. If you are using Visio to create your design, you can select and copy your diagram in Visio, then paste it into your Word document.
- Use the IEEE referencing style to correctly cite and create a section containing references.
- It is imperative that you read the following Deakin resource regarding the IEEE referencing style http://www.deakin.edu.au/students/study-support/referencing.

Scenario

Use this scenario when answering the following tasks.

ABC University is a fictitious private university undertaking teaching at several campuses throughout major cities of Australia, including online teaching. Their administrative headquarters are located in Melbourne and some administrative departments are spread across each campus, some administrative functions are accessible online too.

ABC has contacted you to be their cloud computing consultant, and its management want to know about cloud computing. Additional details about this company are:

- ABC's product lines are all based on degrees, including Associate, Bachelor, Honours and Masters by course work. ABC is not involved in research at any level.
- ABC also has income and expenses from selling courses to other universities, and teaching partnerships with other universities.
- As ABC is very successful and claims high integrity. It has a large national and a larger international student base which can cause high workload throughout the year at both predictable and unpredictable times. ABC management pride themselves on their online web presence, for both students and staff, being always available with fast response times from within Australia, they support this by a large number of on-premise servers to handle workload distribution but also by engaging one or more national or international cloud providers for the occasional burst-out.
- A large amount of data related to student assessments is collected and stored. It is processed as big data on a weekly basis to detect plagiarism. ABC's big data is stored in their private datacentre and as the number of requests to process their big data fluctuates to extreme levels, ABCs management ensure that all big data requests are completed within a reasonable time by employing a cloud provider to listen to and act on such fluctuations in demand.

Task 1. User Access (5 marks)

Provide a list of the different kinds of users that would access ABC's cloud based system.

Task 2. Data (5 marks)

Provide a list of the different kinds of data that ABC collects, and stores, from its users.

Task 3. Processes (5 marks)

Provide a list of the different kinds of (high level) processes required by ABC, such as assessment, for storing, accessing, updating, processing, securing, sharing, and publishing ABC data and information.

Task 4. Cloud Based System Design (25 marks)

For this task, use MS Visio or similar to create designs for the following two sub-tasks.

a) Create a conceptual design of a cloud based system for storing, accessing, updating, processing, securing, sharing, and publishing ABC data and information.
b) For each of your processes from Task 3, create a cloud architecture.

Task 5. Process Justification (20 marks)

For each element in one of your cloud architectural designs from Task 4b:

a) Briefly describe that element.
b) Justify why you included that element in your design.

Note – your justification should differ to your description.