31284 Web Services Development

Autumn 2012

Assignment 1

Due date: 5:00 PM Thursday 5 April 2012 (Week 6)
Weighting: 25% of total mark

Assignment Objectives

This assignment addresses the following objectives from the subject outline. This assignment will help students: -

1. Describe and evaluate typical application architectures and requirements for web-based applications
2. Discuss some of the issues of designing web-based applications in an e-business context
3. Describe the roles and uses of web-based applications in organisational contexts
4. Apply concepts of information representation and parsing, in the context of XML and other relevant standards for information interchange
5. Describe and evaluate different technology options available for the development of web-based applications

Assignment Requirements

This design assignment is to be done **individually**, where you are required to analyse a given scenario and will give recommendations on the suitable architecture, technologies and issues to resolve the scenario.

You must answer each question in the **provided template document** with either a short descriptive answer or with a diagram.

You MUST NOT copy any diagrams from any sources, include lecture notes, labs or sample diagrams. All answers and pictures must be originals and **specific** to your scenario.

You can assume that the marker understands the material in this subject. You **must not** waste space on describing terminology, technologies or concepts which this subject covers. E.g. do not tell me what web services are, don't describe what B2C is etc.

When asked to give specific answers (e.g. choosing a business model), "dot point" answers are preferred. However when you are justifying your answers, you should write at least several sentences of explanation.

You are expected to do your own private research for this assignment. The material in the lecture notes alone **is not intended to be sufficient**. Your assignment must list all references used in an accepted academic referencing style (Harvard referencing preferred, but other styles permitted), and you should use in-line citations to reference sources.

Scenario

You will be allocated a particular scenario. These scenarios are customised for each student so you must not use another student's scenario. A link to access your own scenario will be posted on UTSOnline.

Questions:

The following list is a reference of the questions in the provided template document.

Part 1: Describe the existing scenario: (30%)

1.1. Draw a diagram of your scenario showing the main actors and their interactions with your system. This diagram should provide a high level overview of the system from a business perspective (not a technical perspective). You may use a UML use case diagram or a different format that captures similar information. *[7 marks]*

1.2. Decide which e-business classification the scenario uses. Is it B2B, B2C, or a combination of them? Justify your answer. *[4 marks]*

1.3. What e-business model(s) are being used? Be specific for each e-business classification (e.g. B2C Content Provider/Syndication). Justify your answer. *[4 marks]*

1.4. What PRIMARY e-business revenue model(s) are used? *[4 marks]*

1.5. What types of distributing computing architectures (1,2,3,n-tier,peer-peer) are being used on the EXISTING scenario. *[4 marks]*

1.6. Draw a technical diagram of your existing scenario. You MUST include the tiers and what systems are in them. You must include what types of connections are used and what information is passed between the tiers. *[7 marks]*

Notes: Do not assume or create any components or systems or revenue models that are not explicitly stated. You MUST use the correct terminology as given in the lectures. Don't make up your own, otherwise you will only receive partial marks.

Part 2: Re-design the scenario to make it distributed: (55%)

2.1. Convert the existing scenario to an **n-tier architecture** model:
You will need to decide which components will be placed in which tier.
You also must add the extra feature required by your scenario.

2.1.1. Draw the technical diagram of the new architecture. This should be an n-tier version of question 1.6 *[6 marks]*

2.1.2. Describe what system(s) and information are in each tier. *[8 marks]*

2.1.3. Add additional components or applications that should be added to your re-design. At the very least, this should include some security infrastructure components. Justify your answer. *[5 marks]*

2.1.4. How does your solution address the changes needed in the scenario? *[6 marks]*

2.2. Describe what programming paradigm(s), as mentioned in lectures, you would use in your design? Indicate on the diagram where they are used. Justify your answer. *[4 marks]*

2.3. Choose an appropriate set of implementation technologies. Be specific on which tier each technology will be used. Justify your answer. *[8 marks]*

2.4. For each of the six engineering viewpoint characteristics mentioned in lectures, explain what your solution offers in terms of that characteristic. *[12 marks]*

2.5. For each of the three distributed computing principles mentioned in lectures, describe how your solution addresses the principle. *[6 marks]*

Submission

- Electronic copies of the report must be submitted via the Assignment 1 Turnitin submission link on UTSOnline before the due date and time. Be aware that it may take up to 15 minutes to upload your assignment, depending upon its size. It is your responsibility to allow for upload delays. You should practice the uploading process before the deadline.
- You MUST use the provided template. Save the template as a new Word document using the format *nnnnnnn*.doc where *nnnnnnn* is your student number. Do not change the template. Do not convert it to PDF. Only enter text in the fields provided within the template, and images in the spaces indicated in the template.
- Do not provide a printout/hardcopy. Do not email your report.
- Your report will not be marked unless it is uploaded to UTSOnline.

Marking

Late assignments will be deducted three percent per 24 hours late or part thereof (i.e. 3 marks out of 25 will be deducted). If submitted more than seven days late, the assignment will receive zero.

Special consideration, for late submission, must be arranged before the due date with the Subject Coordinator.

You should not copy sections of materials published elsewhere (including the work of other students). Reports that contain significantly copied material will be given **zero** marks. While short quotes from reference material (**not exceeding 50 words**) are acceptable where appropriate, these must be clearly acknowledged using in-line citations and a full reference included at the end of your report. In general you should use your own words to summarise and present the arguments. Turnitin will be used when submitting the assignment.

In marking the assignment, a software application will extract the information that you have entered into the fields in the Microsoft Word document. Any text you have written that is not contained within the fields will not be marked. This is why it is very important you do not modify the template provided.

The report is worth 25% of the total subject mark. The mark breakdown is shown in the next section.

Clarifications & Updates

Please check the relevant UTSOnline discussion board for clarifications regarding this assignment.

Marking Criteria for report

Part 1: Describe existing scenario (30%)

For each of the questions provided, marks will be given for both **correctness** of the answers as well as **completeness**. Specific marks for each sub-question are shown in the question list provided earlier. In questions where a justification is required, at least half of the marks available for that question will be allocated to the justification.

Completeness

- How complete is the description? Is anything missed or assumptions made? Is it clear where components are placed? Is there a picture of the scenario from a business viewpoint? Is there a technical picture?

Correctness:

- Is the classification, model and revenue model correct and properly justified? Note that if the answer differs from marker's expectation, then a good justification can still be awarded full marks.

Part 2: Redesign (55%)

The main criteria for Part 2 are described below. For Part 2, the main emphasis is on the explanations and justifications given. Justifications should be supported by evidence where possible (e.g. references).

- How complete is the redesign? There can be many variations on the redesign; the main completeness factor is to ensure that the scenario needs are still met.
- Did the redesign include additional components that are APPROPRIATE?
- Did the description include how the components interact and which programming paradigm should be used? Was this choice justified appropriately?
- Did the implementation technology choice seem appropriate? And justified?
- Are reasonable and justified explanations given for how the solution meets the six engineering viewpoint characteristics and three design principles?

Part 3: Presentation (15%)

- Was the report easy to understand and the presentation of the report visually appealing? Was the information presented relevant and succinct? Does the report use correct spelling and grammar?
- Were there adequate references, expressed in an appropriate academic style, with in-line citations?

Academic Standards

Students are reminded of the principles laid down in the Faculty's Statement of Academic Integrity - Good Practice and Ethics in Informal Assessment found at; <wiki.it.uts.edu.au/start/Academic_Integrity>.

The University's rules regarding academic misconduct can be found at: <http://www.gsu.uts.edu.au/rules/student/section-16.html >

Assignments in this Subject should be your own original work. The inclusion in assessable work of any material such as code, graphics or essay text obtained from other persons or sources without citation of the source is plagiarism and is a breach of University Rule 16.

Asking, or paying, anyone else to write any part of your assignments is considered cheating. This especially includes using outsourcing websites. If you are unsure if your activities (or other student's activities) will be considered cheating, ask your tutor or lecturer for advice.

Copying the work of other students currently or formerly enrolled in the subject is totally unacceptable behaviour.

All text written in assignments must be your own words, except for short, quoted, and clearly referenced sections. Text copied from web pages, articles or other sources, and not referenced, will be viewed as plagiarism and forwarded to the Faculty Conduct Committee as misconduct.

Referencing styles may be found at the BELL web site <www.bell.uts.edu.au/referencing>.

Any collaboration with another person should be limited to those described in the "Acceptable Behaviour" section of the Statement of Academic Integrity. Any infringement by a student will be considered a breach of discipline and will be dealt with in accordance with the Rules and By-Laws of the University.

Students are not to give to or receive from any other persons copies of their assessable work in any form (hard copy or an electronic file). To do so is 'academic misconduct' and is a breach of University Rule 16. That is, assisting other students to cheat or to act dishonestly in a submitted assignment.

Accidental submission of another students work as your own is considered to be a breach of University Rule 16 in that you are acting dishonestly since you should not have a copy of another student's work.