SOUTHAMPTON SOLENT UNIVERSITY

FACULTY OF TECHNOLOGY

Course Code: BSc Courses on the Computing and BIT Programmes

Unit Code: SWD301 **UNIT: ADVANCED AND DISTRIBUTED DATABASES**

Assessment No.: 1 (of 1) **Assessment Type:** Project Report **Weighting %:** 100%

The current version of "The Students Guide to Assessment" should be consulted for the regulations that apply to all assessments. This guide was handed out at enrolment and is also available from the Faculty Office RM304.

Hand-out Date to students: w/c 29th September 2009

Latest Hand-in Date (by student):
Evaluation Report: 30th April 2010 (Week 25)

Very Important Note - It is strongly recommended that you have uploaded each theme deliverable by the week indicated in the assessment activity and in myCourse

[Note: Extensions to the published hand-in date will **not** be given, but refer to the current guidelines and form for extenuating circumstances, available from the Faculty Office RM304.]

Planned Feedback Date (by Tutor and in myCourse):
Evaluation Report w/c 31st May 2010

[Note: Normally, you will not receive your original work back after marking, therefore, always keep a copy of what you hand in. However, you should always receive feedback on your performance. The work will not be marked anonymously.]

Learning OutcomesAssessed:
[Note: Cross referenced with the Unit syllabus.]

Knowledge and Understanding
1. Discuss the tools, technologies, methods and techniques associated with business database application development.
Cognitive Skills
2. Analyse, design and evaluate elements of centralised, distributed and decision support database applications.
Practical and Professional Skills
3. Undertake research of advanced database technologies.
4. Apply tools for the development of elements of centralised, distributed and decision support database applications.

Assessment Criteria:

Refer to the separate assessment criteria descriptor sheet.

Assessment Prepared by: A.Monger	Signature:	Date: 11-Sep-09
Peer Partner: S.Baron	Signature:	Date: 11-Sep-09

Introduction

You have been asked as the senior IT applications manager for the company to undertake a project to evaluate advanced database technologies, methods and tools that may benefit the company. The primary themes of interest to the company are:

- Exploiting DBMS Data Models and Server Functionality
- Accessing and Manipulating Data Programmatically
- Improving Data Access by Data Distribution and Replication
- Multi-Dimensional Modelling and Analysis for Decision Support
- Mining Databases for Decision Support

Fundamental to informing the resulting evaluation report is that you apply these technologies, methods and tools in the context of the scenario for each of these themes. You are also required to discuss, choose, research, apply and evaluate one of the advanced topics that extends from each theme.

This evaluation project comprises activities and corresponding deliverables/artefacts scheduled throughout the year as detailed below.

Activities and Deliverables

1. Analyse, design, implement, test and evaluate as required for each theme (Weeks 2-21)

There is an activity for each theme which comprises a scenario with corresponding requirements and deliverables. These activities are in the UIG and in myCourse.

You should upload to myCourse the deliverable(s) at the end of the final week of each theme (as scheduled in myCourse). This helps to assure the tutor that it is your own work and that you are completing the work on a regular basis. It also makes it easier for the tutor to provide formative feedback in the classroom on both an individual and group basis. The general content and format of the upload is detailed in the next section.

The version of any particular required deliverable (eg a design) that will be marked is the one that is handed-in, and so you can continue to improve these deliverables until then. Please note that myCourse will allow you to submit a later version after having previously uploaded an earlier version.

Although this is primarily an individual activity, there are some indicated activities and deliverables that can be completed in groups using a wiki. Please note the "Identification of Group Work" section below.

It is strongly recommended that you have uploaded your final versions to myCourse by the end of each of theme

Each theme includes an emerging or advanced topic that is not covered explicitly in the learning resources and core activities. This year, these topics are respectively for each theme:

- Using XQuery in Oracle
- Using Oracle APEX for Advanced Application Development
- Advanced Oracle Replication
- Using the Mondrian OLAP Tool
- Using the Weka Data Mining Tool

You will need to choose one of these topics for further work as described in 2. below. However, in order to inform this choice, and to provide a shareable base of knowledge and research, you should contribute to the forum set up in myCourse for each advanced topic. This includes contributing relevant information, initiating and contributing to discussion threads and summarising forum content.

Although it is preferable that the forum concludes by the end of the final week of each theme, the forums will remain open throughout the year. It is particularly important that initial practical issues (eg access to software tools) have been resolved before 2. below starts (ie before week 22).

Although contributions to the forums are not explicitly included in the assessment criteria, your contributions may be scrutinised in a borderline case for further evidence of having achieved the learning outcomes (particularly P&PS3), and of higher level achievement in P&PS3 (particularly 2.1 and above).

2. Research, apply and evaluate your chosen advanced topic (Weeks 22-24)

1. Write a detailed and referenced explanation of the key elements (eg functionality of the technology), and discussion of key issues (eg usability), relating to your chosen advanced topic from 1.
2. Devise a scenario, linked to this research, that enables you to apply your chosen topic. This scenario should be written in a manner similar to any of the five theme scenarios, including requirements. This scenario must enable you to produce analysis, design, implementation and test artefacts, again in a manner similar to 1.
3. Analyse, design, implement and test as appropriate to your requirements, and upload these artefacts to myCourse.
4. Evaluate your chosen topic.

Provided all members have contributed meaningfully to the forum, you may work in groups using a wiki to devise a shared scenario, and corresponding analysis and design artefacts. However, the implementation and testing must be done individually. Please note the "Identification of Group Work" section below. Also, there is no myCourse upload for this deliverable.

Management is considering extending its use of Oracle as its main corporate database environment, and so this research and application should be undertaken in the context of Oracle wherever appropriate.

Note - This activity is important as an indicator of higher-level achievement.

3. Compile the evaluation report and hand-in (Week 25)

The report (of maximum 2500 words) must be page numbered and include a contents page with the following sections:

Page No.

1. Exploiting DBMS Data Models and Server Functionality *

2. Accessing and Manipulating Data Programmatically *
3. Improving Data Access by Data Distribution and Replication *
4. Multi-Dimensional Modelling and Analysis for Decision Support *
5. Mining Databases for Decision Support *
6. Research, Application and Evaluation of *<< insert topic of chosen advanced topic here >>* *

There is no need for an introduction, conclusion or other sections. It should therefore take no more than an hour to compile the report from the final versions of the 5 myCourse uploads (assuming you have kept to the schedule!).

General Content and Format of the 5 myCourse Uploads

Each of the 5 theme uploads must be in a .pdf or .doc file and should include:

1. Documented and described analysis, design and implementation artefacts that meet the scenario requirement.
   (Note - Do not submit zipped or other files for more comprehensive solutions - you can refer to these and retained as possible evidence of higher-level achievement).
2. Evidence of testing against the University's databases (including screen shots etc).
3. Accompanying explanation and commentary about the development as appropriate.
   (Note - Design models and decisions should always have an accompanying explanation, and code should always be documented).
4. The Evaluation of the Technologies, Tools and Methods for that theme (including any key issues and recommendations).
5. Academic and industrial references relating to the theme.

Identification of Group Work

Where it is permissible to work in groups on an activity and deliverable, you must use a wiki and indicate clearly in your report and the wiki the other members of the group.

Demonstration of Practical Work

You must be able to assure the tutors that the programs, forms and other application components are your own work. You may be asked to demonstrate them and you may be asked straightforward questions (as part of a viva/interview) about their development and implementation. You must be able to demonstrate them against the University's Oracle databases.

A link to this page will be published on the scheme of work if any demonstrations are required. The page will provide details about who, when and where in respect of demonstrations.

Extenuating Circumstances

The University's Extenuating Circumstances procedures are in place if there are genuine circumstances that may have affected your academic performance. Remember however you need to be 'fit to study', this means that you can either submit your assessed work or declare extenuating circumstances, but you cannot do both.

A summary of guidance notes for students is given below:
http://blade2-5.solent.ac.uk/DocMan8/rns?RNSExact=ASQS/PPG/1234570925

Academic Misconduct

Any submissions must be your own work and, where facts or ideas have been used from other sources, these sources must be appropriately referenced. The University's Academic Handbook, includes the definitions of all practices that will be deemed to constitute academic misconduct. You should check this link before submitting your work.

Procedures relating to student academic misconduct are given below:
http://blade2-5.solent.ac.uk/DocMan8/rns?RNSExact=ASQS/PPG/1234570157

Ethics Policy

The work being carried out by the student must be in compliance with the Ethics Policy. Where there is an ethical issue, as specified within the Ethics Policy, then the student will need an ethics release or an ethical approval prior to the start of the project.

Assessment Criteria and Feedback Sheet

Higher levels of achievement are described on the RHS of the grid. Each level subsumes the previous level. Each of the three criteria below contributes a third to the overall mark.

Primarily, Analysis & Design and Learning Outcome CS2				
Does not reach required threshold.	Analysis and design artefacts meet most scenario requirements, but with some deficiences.	Described analysis and design artefacts meet scenario requirements and using appropriate tools and methods.	Rationale for design decisions explained (inc. most higher-level requirements).	Comprehensive, fully justified and documented analysis and design artefacts meet all requirements in full.
Primarily, Implementation and Learning Outcome P&PS4				
Does not reach required threshold.	Implementation artefacts meet most scenario requirements, but with some deficiences.	Documented implementation and test artefacts meet scenario requirements.	Discussion of encountered implementation issues and solutions (inc. most higher-level requirements).	Comprehensive and fully documented implementation and test artefacts meet all requirements in full.
Primarily, Evaluation Report and Learning Outcomes CS2, K&U1 and P&PS3				
Does not reach required threshold.	Evaluation report meets most requirements but with some deficiences. Evidence that relevant background reading has been undertaken.	Richer and referenced evaluation against some appropriate criteria. Some logical recommendations developed.	Well written evaluation report against full set of criteria and full set of recommendations developed. Most higher-level requirements addressed. References clearly underpin the evaluation throughout.	Comprehensive and critical evaluation report addressing all requirements, and based on extensive research.

Notes :
1. Normally, artefacts for all of the 5 themes must be submitted and reach the required threshold.
2. Each of the activities indicates work which could contribute to higher-level achievement.