



ASSESSMENT COVER SHEET

Unit Number : Unit Title:	Unit 33 Data Analysis and Design		
Assessment Title:	Global Car Club (GCC)		
Course Title:	HND Computing & Systems Development		
Assessment Code:	HNDCSD-Unit33/May13		
Hand Out Date:	31/05/2013	Hand In Date:	27/07/2013
Lecturer(s):	Mr. Asim Satti	Internal Verifier:	Jonathan Cartmell
Sources of information	<p>1. Course notes</p> <p>2. Textbooks:</p> <p>a) Chao L – <i>Database Development and Management</i> (CRC Press, 2006) ISBN 0849392381</p> <p>b) Howe D – <i>Data Analysis for Database Design</i> (Butterworth-Heinemann Ltd, 2001) ISBN 0750650869</p> <p>c) Kroenke D – <i>Database Concepts, 2nd Edition</i> (Prentice Hall, 2004) ISBN 0131451413</p> <p>Ritchie C – <i>Relational Database Principles</i> (Thomson Learning, 2002) ISBN 0826457134</p> <p>3. Websites:</p> <p>a) www.deeptraining.com/litwin/dbdesign/FundamentalsOfRelationalDatabaseDesign.aspx</p> <p>b) www.geekgirls.com/menu_databases.htm</p> <p>c) www.smart-it-consulting.com/database/progress-database-design-guide/</p>		

To be filled by the Student

Student Name		Lecturer	
Student ID		Group(e.g. BDM019)	



Assessment Requirements

- An electronic copy of your assessment must be fully uploaded by the **deadline date and time**.
- You must submit **one** single PDF or MS Office Word document. Any relevant images or screenshots must be included within the same MS Office Word or PDF document.
- The last version you upload will be the one that is marked.
- The file size must not exceed 20MB.
- Answer the criteria in order, clearly indicating the CRITERION number.
- Ensure that all work has been proof-read and checked prior to submission.
- Ensure that the layout of your documents are in a professional format with font style Arial, font size 12 for the text, font 14 for sub heading and font 16 for main heading, line spacing 1.5 and justified.
- Use the Harvard referencing system and provide references [e.g. (Smith, 2011)] within the text and an entry in a references list. Otherwise it will be considered as plagiarised work.
- Ensure that you back-up your work regularly and apply version control to your documents.
- Ensure that any file you upload is virus-free, not corrupted and not protected by a password otherwise they will be treated as a non-submission.
- You must **NOT** submit a paper copy or email of this assessment to any member of staff at LSST.
- Your work must be original with the appropriate referencing

What is Plagiarism:

Plagiarism is presenting somebody else's work as your own. It includes: copying information directly from the Web or books without referencing the material; submitting joint coursework as an individual effort; copying another student's coursework; stealing or buying coursework from someone else and submitting it as your own work. Suspected plagiarism will be investigated and if found to have occurred will be dealt with according to the procedures set down by the School.

Any student for whom it has been proved that they have plagiarised the work of others will be subject to the School's disciplinary procedures which could result in them being dismissed from their course of study

Your work will be submitted for electronic plagiarism checking. Any attempt to bypass our plagiarism detection systems will be treated as a severe Assessment Offence.

Assessment scenario:



Global Car Club (GCC) is a small individually owned club which loans cars to its members. GCC first formed in 2009; has over more than 100 good mixes of members and counting. The club organizes frequent drivers and social events throughout the year for members to get together to enjoy their passion. The company has been already introduced to you during the lab sessions.

What to do

We are aiming to build an electronic database management system for GCC. As a member of the software development team, your responsibility is to create and populate the database system using SQL Server (Microsoft SQL Server is a relational database management system developed by Microsoft).

What is required

The database is designed specifically for GCC, and stores the following information:

- Members, past and present
- Vehicles, current ownership and previous club-member owners
- Committee Members
- Assets owned by the club
- Events held by the club, including attendance records
- Day Book entries, recording of non-club use of club-plated vehicles

Additionally, GCC provides easy to use communication channels to ensure your members are kept up-to-date with Club news. You are expected to work through a series of activities or tasks that have a lot of scope for variation in the approaches taken. We will introduce some additional scenario information as we progress through these activities, and will give some direction about how the GCC wishes to consider the data and aspects of their business operation. In most of the activities there will not be a single answer to the questions we pose-so our comments will be in the form of discussion points that you should be considering regarding the solutions you suggest.



PART A – PASS CRITERIA ONLY

Pass

In order to achieve a Pass, students must achieve all the Pass Criteria

TASK 1 PASS CRITERIA (approx. 450 words) *Interim deadline 24th May 2013*

Data models and database technologies are key to the design of database systems. Describe different data models and schemas which are available. Also, discuss the benefits and limitations of different database technologies.

Guidelines:

Some common data models, schemas and technologies to consider are:

Data models: Hierarchical; Network; Relational; data manipulation languages; Schema: e.g. table's field's relationships, views, indexes; conceptual scheme; physical scheme, data dictionary. Well-known DBMSs include: MySQL, PostgreSQL, SQLite, Microsoft SQL Server, Microsoft Access, Oracle, Sybase, Dbase, and IBM DB2.

In answering this question, you will have covered the following assessment criteria:

- 1.1 Critically compare different data models and schemas
- 1.2 Critically discuss the benefits and limitations of different database technologies.

TASK 2 PASS CRITERIA (approx. 400 words) *Interim deadline 7th June 2013*

Database development is a systematic process that takes into account the needs of the organisation and potential users. Discuss the stages of the database system development lifecycle for the required database system. Furthermore, summarise the main activities associated with each stage of the database system development lifecycle.

Guidelines:

In order to complete this task your answer should consider the following:

Approaches: top down and bottom up; tools and techniques e.g. entity analysis, Entity Relation Diagrams (ERDs), determinacy diagrams, data flow diagrams (DFDs); entities; attributes and key identifiers; relationship types and enterprise rules; degrees of relationships; functional dependency; first, second and third normal forms

In answering this question, you will have covered the following assessment criterion:

- 1.3 Analyse different approaches to database design

TASK 3 PASS CRITERIA (400 words approx.) *Interim deadline 14 June 2013*

Design and construct a fully functional relational database system based on the system requirements specification with enhanced user interface to meet a given requirement for the above scenario. Detail any modifications or assumptions you made/introduced and explain your reasons for doing so.

**Guidelines:****In order to complete this task your answer should:**

Build the company database in SQL Server complete with sample data. You should provide local logical schema in SQL for the GCC. Design an appropriate database (containing inter-relational tables) including a user interface.

In answering this question, you will have covered the following assessment criterion:

- 2.1 Design a relational database system to meet a given requirement
- 2.2 Build a relational database system based on a prepared design
- 2.3 Apply a range of database tools and techniques to enhance the user interface

TASK 4 PASS CRITERIA (300 words approx.) Interim deadline 21st June 2013

Implement query language into your relational database system and generate appropriate reports and queries. The GCC management requires you to complete the following reports:

1. A list of the stock of cars that the company owned.
2. A weekly + Monthly report giving the total revenue generated by the company.
3. Total revenue generated by the each car individually.
4. The total revenue generated by a driver.

Guidelines:**In order to complete this task your answer should:**

You are expected to include here the reports using the SQL Query Designer to build sophisticated queries needed by the management as specified above. You will be given some guidance during the lectures, lab sessions as well as by hand-outs as to how to complete these reports for GCC.

In answering this question, you will have covered the following assessment criteria:

- 3.1 Explain the benefits of using manipulation and query tools in a relational database system
- 3.2 Implement a query language into the relational database system
- 3.3 Critically evaluate how meaningful data has been extracted through the use of query tools

TASK 5 PASS CRITERIA (approx. 400 words) Interim deadline 21st June 2013

Review the strengths and weaknesses of your developed relational database system by applying all testing procedures.

Guidelines:**In order to complete this task your answer should:**

Testing procedures: test plans; test models (e.g. white box, black box)

In answering this question, you will have covered the following assessment criterion:

- 4.1 Critically review and test a relational database system



TASK 6 PASS CRITERIA (approx. 400 words) *Interim deadline 24st June 2013*

Provide supporting user and technical documentation to support the implementation and testing of your developed relational database system.

Guidelines:

In order to complete this task your answer should:

test documentation; other e.g. organisational requirements; user documentation e.g. help menu, pop-ups, hot-spots

In answering this question, you will have covered the following assessment criterion:

4.2 Create documentation to support the implementation and testing of a relational database system

4.3 Create user documentation for a developed relational database system

TASK 7 PASS CRITERIA (approx. 400 words) *Interim deadline 28th June 2013*

Explain the importance of verification and validation in the context of your given scenarios.

Guidelines:

In order to complete this task your answer should:

Control mechanisms. Example systems e.g. TQM (Total Quality Management); connection to requirements specification; sign off procedures.

In answering this question, you will have covered the following assessment criterion:

4.4 Explain how verification and validation has been addressed

4.5 Explain how control mechanisms have been used

END OF PART A – PASS CRITERIA ONLY



PART B – MERIT CRITERIA ONLY

Merit

In order to achieve a Merit, students must achieve all the Pass Criteria plus M1, M2 and M3

MERIT ONE CRITERIA (approx. 450 words) *Interim deadline 3rd July 2013*

Critically compare and choose the best model for your database. Present your comparison in appropriate format.

Guidelines:

In order to complete this task your answer should:

Your report should provide a critique of common database models available. Discuss how these data models can be used in practice?

MERIT TWO CRITERIA (approx. 400 words) *Interim deadline 5th July 2013*

Understand and debate the importance of planning and designing your database before starting development.

Guidelines:

In order to complete this task your answer should:

Discuss a database plan to fit your purpose that serves as a guide to be used when implementing the database. Explain why a good database design is important?

MERIT THREE CRITERIA (approx. 400 words) *Interim deadline 12th July 2013*

Create system requirements documentation for database development.

Guidelines:

In order to complete this task your answer should:

You are expected to include here the report needed by the management to support the implementation and testing of your relational database system.

END OF PART B – MERIT CRITERIA ONLY



PART C – DISTINCTION CRITERIA ONLY

Distinction

In order to achieve a Distinction, students must achieve all the Pass Criteria plus all Merits plus D1, D2 and D3

DISTINCTION ONE CRITERIA (approx. 450 words) *Interim deadline 19th July 2013*

Discuss the importance of following a procedural/staged lifecycle in a systems investigation.

Guidelines:

In order to complete this task your answer should:

Clearly examine the system development process for the agreed project. Use appropriate systems analysis tools and techniques to carry out a systems investigation. Also, identify and apply approaches to systems development that could be applied to the above scenario and explain its steps.

DISTINCTION TWO CRITERIA (approx. 400 words) *Interim deadline 25th July 2013*

Critically investigate and prepare a report on the feasibility of making the GCC database accessible from the Internet.

Guidelines:

In order to complete this task your answer should:

The report should examine the technical issues, the technical solutions; address the advantages and disadvantages of the agreed proposal, and any perceived problem areas. The report should contain a fully justified set of conclusions on the feasibility of this proposal for GCC.

DISTINCTION THREE CRITERIA (approx. 400 words) *Interim deadline 27th July 2013*

Discuss the problems/difficulties that you faced and critically evaluation your own work.

Guidelines:

In order to complete this task your answer should:

Evaluate the effectiveness of the database solution and justify valid conclusion. Suggest methods of improvement.

END OF PART C – DISTINCTION CRITERIA ONLY



Merit Criteria

M1	Identify and apply strategies to find appropriate solutions.
M2	Select/design and apply appropriate methods/ techniques.
M3	Present and communicate appropriate findings.

Distinction Criteria

D1	Use critical reflection to evaluate own work and justify valid conclusions.
D2	Take responsibility for managing and organizing activities.
D3	Demonstrate convergent/lateral/creative thinking.

The following Generic Criteria may also be applied for Merit / Distinction:

Generic Merit Criteria

GM1	Only minor and agreed deviations from the deadlines that are set.
GM2	Correct technical language and notation are used throughout.
GM3	All sources are referenced.
GM4	All answers follow a clear logical structure and are pitched at the correct level.

Generic Distinction Criteria

GD1	All recommendations made are fully justified.
GD2	All deadlines are adhered to.
GD3	Innovative options were proposed.
GD4	Used critical reflection to evaluate own work and justify valid conclusions.

IMPORTANT

CHECK THAT YOUR ANSWERS MEET THE CRITERIA

COMPLETE THE ASSIGNMENT CRITERIAS AS YOU GO ALONG

DO NOT LEAVE THINGS TO THE LAST MINUTE