BACS1053 Database Management – Assignment

1. Objectives

This assignment is to assess a student's ability:

- Write business rules for a chosen organization's environment.
- Implement the appropriate techniques and methodologies applicable to the database development life cycle.
- Critically analyse the requirements for a good database design and design a good database pertaining to the given scenario.
- Develop the designed database using Structure Query Language (SQL) in the ORACLE database server.
- Present the complete assignment report in a well organised, clear and concise manner.

2. Assessment

The learning outcomes assessed are:

CLO3: Design a normalized database system for a business scenario using relational database management software (CTPS, C4).

Contribution of marks to coursework:

- The assignment deliverables* contributes 60% to the coursework component (under CLO3) as shown below:

Tasks	**Marks**
Develop Business Rules	10
Develop Entity-Relationship Diagram (ERD) using Microsoft Access	10
Develop the database schema – 3NF	10
Create database tables using ORACLE	20
Create records	10
Create queries	30
Final Report & presentation	10
Total	**100**

** Note: Tutor has the right to adjust the marks based on the % contribution by each team member.*

Refer to the Assignment Rubrics for details.

3. Group Formation

Students will be assigned to groups of **3-4** members per team from the same tutorial group by the tutor.
Every member in the group is expected to contribute and participate actively in the entire process of completing the assignment. Sharing of ideas and assistance in the completion of assignment among members is required.

The students are expected to work in a team of 3 who are from the same tutorial group. Students will be individually assessed and therefore, every member in the group is expected to contribute and participate actively in the entire process of completing the assignment.

IMPORTANT: *The award of marks will take into consideration the scope (i.e. complexity, correctness, clarity and completeness) of the tasks successfully completed by the student* and *deliver work on schedule.*

4. Assignment Tasks

The effects of human living behaviour have resulted in an increasing amount of disease such as Dengue virus (DENV), Human Immunodeficiency Virus (HIV), Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Coronavirus Disease 2019 (COVID-19) and so on. A sophisticated **Disease Management System (DMS)** allows the **Malaysia Disease Relief and Management Team (MDRMT)** to coordinate the rescue mission in a more efficient and effective manner. It also reduces the risks associated with the disease and relief the pain caused by it. With this, your team is asked to develop a **DMS** for the **MDRMT**.

Your system should include but not limited to the following modules:

1) Registration of the diseases, victims, staffs, donors, Shelters (mostly hospitals) and medical supply
2) Record donations in term of money or medical supply
3) Medical supply management
4) Medical examination management
5) Workload assignment and coordination

Disease reference website: https://www.cdc.gov/diseasesconditions/az/a.html

	Deliverables
Task 1: Develop Business Rules (10 marks) List down at least TEN (10) potential Business Rules that is relevant to the above scenario. You may add in business processes and assumptions that you deemed suitable.	5
Task 2: Develop Entity-Relationship Diagram (ERD) (10 marks) Draw a conceptual Entity-Relationship Diagram (ERD) using the Crow's Foot symbols for your whole system based on the above rules.	5
Task 3: Develop the database schema – 3NF (10 marks) Write out the database schema after normalizing the design to Third Normal Form (3NF) relations. You should have suitable number of attributes for each of the entities. Note: Underline all primary keys and use * to indicate foreign keys. A sample format is shown below: Customer (CustNo, CustName, CustAddress, CustContact) Order (OrderNo, OrderDate, OrderAmount, CustNo*) OrderDetails (OrderNo, ProductNo, Quantity, SellingPrice) Product (ProductNo, ProductDesc, UnitPrice)	6
Task 4: Create database tables in Oracle (20 marks) Write the appropriate Structure Query Language (SQL) statements to create tables based on the entities identified above. Choose appropriate data types, default values and check constraints. Ensure that you enforce the Entity Integrity Rule and the Referential Integrity Rule.	7
Task 5: Create records (10 marks) Write the appropriate INSERT statements to populate your database. Enter at least 10 records for each base (parent) table and at least 100 records for all other remaining tables. A total of at least 10 tables should be included. Website to generate random records: https://www.mockaroo.com/ For Task 4 & 5, You are advised to insert sufficient data records for each table that you have created in the Oracle database server. Transaction tables would have more records than base tables. For example, if there are 10 customers, average of 2 orders per customer per month with average of 2 items ordered per order. Base Table Customer table: 10 records Transaction Table (at least 3 years) Orders table: 10 * 2 * 12 = 240 records per year OrderDetails table: 240 * 2 = 480 records per year Furthermore, you should create sample data that has different date/month/year to simulate a real-world environment.	7
Task 6: Create Queries (30 marks) • Produce queries to extract meaningful information for decision making. **Single table queries are not allowed**. Use a script to create your queries. • Create FIVE (5) types (each member) of multi-table queries to extract useful meaningful information from the database. For each of the 5 queries, state the purpose of the query and provide the results of the queries (screenshot). You should format the output of the queries to be meaningful and presentable. • Make use of the ACCEPT- PROMPT and variable substitution to make your query as flexible as possible. • Apply report formatting features. • Explain the need and the importance of the queries and reports created for the company. • Only SELECT statements. • Idea of queries cannot be duplicated among same group members.	8-9

Task 7: Final Assignment Report (10 marks): Compile the work done and prepare a well presented report for submission. Presentation in the lab • Run a single script file from Task 4 and 5 to create the database. • Run the scripts from Task 6. • Each group should take 20 minutes for the presentation and Q & A. ** All the above tasks handled by each student in the team must be clearly indicated.*	10 8 11 11

5. Assignment Schedule

Deliverables	Week	Digital Submission	Link:
Task 1, 2	5	Week 10 Google Drive	**Each group have their own folder to submit the work, which will be created based on email provided on BACS1053 Group List.xlsx.** **https://drive.google.com/file/d/1t0ZUh7Z0e72n4MrKPrLwOb_ABtGyEXmg/view?usp=sharing**
Task 3	6		
Task 4, 5	7		
Task 6 (Create a subfolder for each member name)	8-9		

Note: Digital submission – to be submitted by the Team Leader to the course's ***Google Classroom***

6. Submission Deadlines

Item	Week	Deadline
Demo (USING Oracle) *Each group ONE script file only	8	During practical classes: Run a single script file from Task 4 and 5 to create the database.
Digital softcopy, report (hardcopy) submission	10	By 17/08//2020, Monday before 11:59pm

Note: *Digital submission – to be submitted by the Team Leader to the course's Google Drive*

7. The Final Assignment Report Format

The final assignment report for all Parts should contain the following items:
(a) Cover sheet (Appendix - Form 1)
(b) Plagiarism statement with student signatures (Appendix – Form 2)
(c) Assessment Rubric (Appendix – Form 3)
(d) Table of Contents (page number)
(e) Body of answers – all 6 tasks
(f) Reference section (Students are required to use Harvard Referencing System format)
(g) Appendices

The report must be type-written using **MS-Word**. You are recommended to format your report according to the following specification:

Media	Students are required to submit a **hardcopy** - well written and properly formatted report. Softcopy to be submitted to the *Google Classroom assignment*.
Font Size	**SQL code: 9pt** **Written description : 11pt**
Font Style	Use ***Times New Roman*** for body text. Main headings and sub-headings should be clearly stated using suitable font styles (e.g. Arial).
Line Spacing	Typed material should be ***1 line spaced***.
File & folder Naming Convention	Meaningful table name, ERD, etc. Digital Submission (SQL codes, report, ERD, etc) to Google Drive: File naming format: **Programme_Group_LeaderName** Example: RSF1_G1_TanYiYing Do NOT upload in zip file.

Headers and Footers	Appropriate footers and headers should be used to enhance clarity and presentation.
Page Numbering	Ensure that all pages (except cover page) are numbered.
Paper Size	Use ***A4*** paper (Use only one side of the paper)
Binding	2-hole plastic binder clip. Use only ***one*** side of the paper.

8. Late Submission

All assignments should be submitted by the stated due date as Section 6.
Late submission of the assignment will be handled according to the Guideline for Late Submission of Coursework available at **TAR UC's Intranet→ Examinations and Credit Accumulation→ Undergraduate→ Guideline.**

PART B : LATE SUBMISSION OF COURSEWORK INFORMATION

Please check/tick one of the information below :

	Late submission of 1 - 3 days after deadline of submission: minus 10 marks
	Late submission of 4 - 7 days after deadline of submission: minus 20 marks
	Late submission of > 7 days after deadline of submission: 0 mark

In certain circumstances, a student may be allowed to submit the assignment late with valid reason. S/he must inform the respective tutor **at least one week before** the assignment is due. The tutor will evaluate whether the circumstance warrants submitting the assignment late, but **no guarantee** that the students will not be penalized.

9. Academic Integrity and Plagiarism

There must be originality in your work, i.e. do not copy or refer to other students. You may only work with your team members where the functionalities that you are handling depend on your team members' parts to produce the solution of this assignment. You must not share with nor refer to any part of the assignment of anyone else except your team member(s) and your tutor.

Before submitting your assignment, please make sure that you have complied with **TAR UC Plagiarism Policy**. Any cheating, attempt to cheat, plagiarism, collusion and any other attempts to gain an unfair advantage in assessment will cause the students concerned to be penalized.

IMPORTANT: Students found to be dishonest are liable to disciplinary action.

FORM 1

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

BACS1053 DATABASE MANAGEMENT
Assignment

Semester June 2020

Programme	:	R
Tutorial Group	:	
Date Submitted	:	

Team members:

No	Name (Block Letters)	Registration No.	Signature	Marks
1				
2				
3				
4				


Name of 1


Name of 2


Name of 3


Name of 4

FORM 2

TUNKU ABDUL RAHMAN UNIVERSITY COLLEGE

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

Plagiarism Statement and Guideline for Late Submission of Coursework

Read, complete, and sign this statement to be submitted with the written report.

We confirm that we have read and shall comply with all the terms and conditions of TAR University College's plagiarism policy.

We declare that this assignment is free from all forms of plagiarism and for all intents and purposes is my own properly derived work.

Declaration Statement Acknowledged by

No	Name (Block Letters)	Registration No.	Signature	Date
1				
2				
3				
4				

Name of 1

Name of 2

Name of 3

Name of 4

BACS1053 Database Management – Assignment

Assignment Assessment Form (CLO3)

Rating (Task 1, 2, 3, 4, 5 & 7) = 1: Very Poor, 2-3: Poor, 4-5: Average, 6-7: Good, 8-10: Excellent
Rating (Task 6) = 1: Very Poor, 2: Poor, 3: Average, 4: Good, 5-6: Excellent

Form 3

Programme: R _____( )

Member Name: 1. _____, 2._____, 3._____, 4._____

Task No.	Task Descriptions	Weightage	Criteria	1	2	3	4	Comment
1	Develop Business rules	10%	• Include the required and relevant pairs of business rules. • All business rules must be clearly defined, precise, and reflect the policies and procedures of the organization's operational environment.					
2	Develop ERD	10%	• Transform business rules to a relational database model correctly. • Correct use of Crow's Foot notations. • Include all necessary entities, attribute & relationships.					
3	Develop DBDL	10%	• Correct use of DBDL format as required • All required entities, attributes and relationships correctly shown • Indicate Primary key and Foreign key clearly					
4	Database Design 20%	10%	• Correct tables, records and fields designed according to the ERD developed.					
		10%	• Enforcement of entity integrity rule & referential integrity rule • Appropriate data types, default values and check constraints.					
5	Records (Entries)	10%	• Provide sufficient and quality data records • Well-designed records for adequate and logical choices of queries to be performed					
6	Queries Design 30%	6%	• Flexible query for variety of inputs. Clear & proper identification of information needs. • Apply Accept, Prompt and variable substitution in queries. Flexible query to cater for variety of inputs, use of multiple tables. • Apply Report Formatting features. Meaningful report handlings. Data values formatted accordingly. • Only SELECT statements.					
		6%						
		6%						
		6%						
		6%						
7	Assignment Report	10%	• Comprehensive, clarity and completeness coverage • Quality of report presented • Presentation and Q & A					
Assignment Marks / 100								