جامعة الحسين التقنية
Al Hussein Technical University

ASSIGNEMNT MATERIAL

H/615/1622: Database Design and Development

For use with the following qualifications:

- HTU Technical Degree in Information Sciences
- HTU B.Sc. Degree in in Information Sciences
- Pearson Level 4 HNC

Assignment Brief Number: 1

Version 1

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Assessment Brief

Student Name/ID Number/Section	
HTU Course Number and Title	**Database Design and Development 30201120**
BTEC Course Number and Title	**Database Design and Development H/615/1622**
Academic Year	2020/2021
Assignment Author	Ahmad Barghash
Unit Tutor	Ahmad Barghash
Assignment Title	**Designing & Developing a Database Schema**
Assignment Ref No.	No. 1
Issue Date	July 19th, 2021
Formative Assessment Dates:	Every week until August 26th, 2021
Submission Date	September 6th , 2021
IV Name & Date	Ms. Dania Alsaid, August 7th, 2021

Submission Format

The submission is in the form of:

1- A 15-minute individual Demonstration using appropriate software.
2- A report that follows the below guidelines, and contains the sections described in the assignment brief.
3- A copy of your actual database (.sql file).

Report guidelines:

In your report, you should make use of headings, paragraphs, and subsections as appropriate. The expected word limit is 2500-4000 words (that is about 20 pages with images), although you will not be penalized for exceeding the total word limit. Do your best to be within the word limit. Your report should be:

1. In a form of soft copy submitted to the instructor.
2. Written in a formal business style using single spacing and font size 12.
3. Must be supported with research and referenced using the Harvard referencing system.

Note: Soft copies submissions should be done through the university's eLearning system within the deadline specified above from below link: https://elearning.htu.edu.jo. You must submit the student declaration form filled out and signed properly.

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Unit Learning Outcomes

LO1 Use an appropriate design tool to design a relational database system for a substantial problem.
LO2 Develop a fully functional relational database system, based on an existing system design.
LO3 Test the system against user and system requirements.
LO4 Produce technical and user documentation.

Assignment Brief and Guidance

Scenario:

You are employed as an assistant Database Developer for a large IT consultancy company. The company has been approached by TicTech Inc., which is expanding rapidly due to the huge growth in demand of their products and services.

TicTech Inc. have to date, managed their business by using a computerized system, which was developed by an intern five years ago. The system is now outdated and slow and no system documentation was produced when it was implemented so changes to the system cannot be made easily. The CEO of TicTech Inc. feels that their business requirements have changed, and they need to invest in new technology and a new system in order to grow and manage their business successfully.

Your company has accepted the contract to develop a database system for TicTech Inc. and to provide the necessary technology to run the system. Your brief is to develop the database system element of the contract from TicTech Inc. You have been asked by your manager to investigate the system requirements; and design, create and implement the system. One of the requirements of the contract is that user and technical documentation be made available to TicTech Inc.

Part 1

1- Develop the database system using evidence of user interface, output and data validations and querying across multiple tables including system security and database maintenance features. You have decided to implement a query language into the relational database system.
2- Assessing whether meaningful data has been extracted by query tools to produce appropriate management information.

Part 2

1- Evaluating the effectiveness of the database design in relation to user and system requirements, and how effective was the solution based on the evaluation of the design and suggest improvements.
2- Suggest how is your database system is flexible and can handle improvements in the future.
3- Unit testing plan that tests the relation between interrelated tables using T-SQL against user requirements. Inaddition, testing plan must check the effectiveness of the security like privileges granted to users.
4- Asses how the tested data produced is effective.

Part 3

1- A Technical section that shows the design of the relational database system using appropriate design tools and techniques. It should contain at least four interrelated tables.
2- Produce documentation for user and system requirements, the documentation will include a comprehensive design for a fully functional system that has diagrams that shows movements for data in the system and shall include interface and output designs, data validations and cover data normalization.

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<table>
<tr><th colspan="3">Learning Outcomes and Assessment Criteria</th></tr>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Use an appropriate design tool to design a relational database system for a substantial problem.</td><td rowspan="2"></td></tr>
<tr><td>P1 Design a relational database system using appropriate design tools and techniques, containing at least four interrelated tables, with clear statements of user and system requirements.</td><td>M1 Produce a comprehensive design for a fully functional system which includes interface and output designs, data validations and data normalization.</td></tr>
<tr><td colspan="2">LO2 Develop a fully functional relational database system based on an existing system design</td><td rowspan="2">LO2 & LO3
D2 Evaluate the effectiveness of the database solution in relation to user and system requirements and suggest improvements.</td></tr>
<tr><td>P2 Develop the database system with evidence of user interface, output and data validations, and querying across multiple tables.

P3 Implement a query language into the relational database system.</td><td>M2 Implement a fully functional database system which includes system security and database maintenance.

M3 Assess whether meaningful data has been extracted through the use of query tools to produce appropriate management.</td></tr>
</table>

LO3 Test the systems against user and system requirements		
P4 Test the system against user and system requirements.	**M4** Assess the effectiveness of the testing, including an explanation of the choice of test data Used.	
LO4 Produce technical and user documentation		
P5 Produce technical and user documentation.	**M5** Produce technical and user documentation for a fully functional system, including diagrams showing movement of data through the system, and flowcharts describing how the system works.	**D3** Evaluate the database in terms of improvements needed to ensure the continued effectiveness of the system.

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STUDENT ASSESSMENT SUBMISSION AND DECLARATION

When submitting evidence for assessment, each student must sign a declaration confirming that the work is their own.

Student name:	**Assessor name:** Dr. Ahmad Barghash	
Issue date: July 19th, 2021	**Submission date:** September 6th, 2021	**Submitted on:**
Program: Computing		
Course Name: Database Design and Development **HTU Course Code:** 10201131		**BTEC UNIT:** 6
Assignment number and title: No. 1 Designing & Developing a Database Schema		

Plagiarism

Plagiarism is a particular form of cheating. Plagiarism must be avoided at all costs and students who break the rules, however innocently, may be penalized. It is your responsibility to ensure that you understand correct referencing practices. As a university level student, you are expected to use appropriate references throughout and keep carefully detailed notes of all your sources of materials for material you have used in your work, including any material downloaded from the Internet. Please consult the relevant unit lecturer or your course tutor if you need any further advice.

Student declaration

I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.

Student signature: **Date:**