

## Assignment front sheet

Qualification		Unit number and title	
Pearson BTEC Higher Nationals in Computing and Systems Development		Unit 17: Database Design Concepts	
Student name		Assessor name	
		Dr Derek Peacock	
Date issued	Completion date	Submitted on	
23rd February 20017	30 <sup>th</sup> March 2017		

Assignment title	17-2: Database Design
------------------	-----------------------

O	Learning outcome (LO)	AC	In this assessment you will have the opportunity to present evidence that shows <b>you are able to:</b>	Task no	Evidence
<b>U17 LO 3</b>	Be able to design, create and document databases	3.1	apply the database developmental cycle to a given data set	1	
		3.2	design a fully functional database (containing at least four inter-relational tables) including user interface	1 and 2	
		3.3	evaluate the effectiveness of the database solution and suggest methods of improvement	3	
		3.4	provide supporting user and technical documentation	1	

**Learner declaration**

I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.

Student signature:

Date:

**In addition to the above PASS criteria, this assignment gives you the opportunity to submit evidence in order to achieve the following MERIT and DISTINCTION grades**

<b>Grade Descriptor</b>	<b>Indicative characteristic/s</b>	<b>Contextualisation</b>
<b>M1</b> Identify and apply strategies to find appropriate solutions	an effective approach to study and research has been applied	
<b>M2</b> Select/design and apply appropriate methods/techniques	the selection of methods and techniques/sources has been justified	
<b>M3</b> Present and communicate appropriate findings	the appropriate structure and approach has been used	
<b>D1</b> Use critical reflection to evaluate own work and justify valid conclusions	Self-criticism of approach has taken place	
<b>D2</b> Take responsibility for managing and organising activities	Effective planning, organising and managing of individual tasks	<i>A detailed plan has been produced and continuously updated showing individual task allocation and completion on schedule</i>
<b>D3</b> Demonstrate convergent/lateral/creative thinking	ideas have been generated and decisions taken	<i>Web blogs and contributions to the decisions taken during team work contributed significantly to effective decisions being made</i>

# Assignment brief

<b>Unit number and title</b>	Unit 17: Database Design Concepts
<b>Qualification</b>	Pearson BTEC Higher Nationals in Computing and Systems Development
<b>Start date</b>	
<b>Deadline/hand-in</b>	
<b>Assessor</b>	Dr Derek Peacock

<b>Assignment title</b>	17-2: Database Design
<b>Purpose of this assignment</b> Databases provide the infrastructure to many organisations, and they offer support to key business applications and information systems. The most common database model used commercially is the relational one. This assessment provides students with opportunities for using and developing the skills of data analysis and design for a complex e-commerce application	
<b>Scenario</b> Valerian Software is a small software development firm newly established that is looking to develop novel dynamic interactive websites that make use of modern web development best practices. You have been recently appointed as a trainee web developer and you are required as part of your job to complete an on-going CPD program which will last two years. Your team has been given the job of analysing the data requirements and designing a suitable relational database structure for the new online project management system.	

**Task 1 (U17-3.1, U17-3.2, U17-3.4)**

As a team create a Use Case Diagram that summarises all the proposed features of the new online e-commerce system

Document each use case that involved editing a table, and in particular specify how each field will be verified and validated. Each member of the team should be given a share of the use cases to document.

Create an interface design as a wire frame web pages using HTML5 for each use case involving editing the fields of a table. Each member of the team must complete at least one interface design.

**Task 2 (U17-3.2)**

Each member of the team should design at least one or more tables containing at least 12 fields or attributes.

The team should create an Entity Relationship Diagram, or a UML class diagram showing the attributes, the primary keys and the foreign keys for each table. Each table should be in third normal form or higher.

Hold a team meeting to review the completed design with your manager. Thoroughly discuss alternative schemas, and check that the proposed design is the best solution for the proposed application. Check that the design is fully normalised, or if there is any de-normalisation, that it is fully justified and documented in notes attached to the diagram.

**Task 3 (U17-3.3)**

Each member of the team should post on the blogsite their own evaluation of the effectiveness of the proposed solution and discuss alternatives that they favour.


Evidence checklist	Summary of evidence required by student	Evidence presented
Task 1	A UML Use Case Diagram, with each edit use case documented and a interface design for each edit use case. The use cases must contain an explanation of all verification and validation	
Task 2	Initial table designs and ER or Class diagram showing primary and foreign keys. Blog posts discussing alternatives and any de-normalisations.	
Task 3	Blog posting evaluating the proposed design and discussing alternatives. An SQL Server ER diagram and table definitions. Blogs on any deviations between logical and physical schemas	
Task 4		
Task 5		
Task 6		

# Achievement Summary

<b>Qualification</b>	Pearson BTEC Higher Nationals in Computing and Systems Development	<b>Assessor name</b>	Dr Derek Peacock
<b>Unit Number and title</b>	Unit 17: Database Design Concepts Unit 33: Data Analysis and Design	<b>Student name</b>	
<b>Criteria Reference</b>	<b>To achieve the criteria the evidence must show that the student is able to:</b>	<b>Achieved ? (tick)</b>	
<b>U17-3.1</b>	apply the database developmental cycle to a given data set		
<b>U17-3.2</b>	design a fully functional database (containing at least four inter-relational tables) including user interface		
<b>U17-3.3</b>	evaluate the effectiveness of the database solution and suggest methods of improvement		
<b>U17-3.4</b>	provide supporting user and technical documentation		
<b>U33-2.1</b>	design a relational database system to meet a given requirement		
<b>U33-2.2</b>	build a relational database system based on a prepared design		
<b>U33-4.3</b>	create user documentation for a developed relational database system		
<b>U33-4.4</b>	explain how verification and validation has been addressed		
<b>Higher Grade achievements (where applicable)</b>			
<b>Grade descriptor</b>	<b>Achieved? (tick)</b>	<b>Grade descriptor</b>	<b>Achieved? (tick)</b>
<b>M1: Identify and apply strategies to find appropriate solutions</b>		<b>D1: Use critical reflection to evaluate own work and justify valid conclusions</b>	
<b>M2: Select / design and apply appropriate methods / techniques</b>		<b>D2: Take responsibility for managing and organising activities</b>	
<b>M3: Present and communicate appropriate findings</b>		<b>D3: Demonstrate convergent /lateral / creative thinking</b>	

# Assignment Feedback

**Formative Feedback: Assessor to Student**

**Action Plan**

**Summative feedback**

**Feedback: Student to Assessor**

**Assessor  
Signature**

**Date**

**Student  
Signature**

**Date**