

Assignment Brief

Qualification	BTEC Extended National Diploma in IT
Unit number and title	Unit 18 Database Design
Learning aim(s) (For NQF only)	1. Understand the features of relational databases 2. Be able to design, create and populate a relational database
Assignment title	Assessment 1: Pizza Database Design
Assessor	
Hand out date	w/b 25 th Sep 2017
Hand in deadline	w/b 23 rd Oct 2017

Vocational Scenario or Context	<p>Mia's Takeaway Pizza shop has just opened in an area of Leicester where there is little competition. The shops' proprietor Mia Patel has decided that in order for her business to expand further a computerised system is required to manage all the shops' orders. She has heard something about databases but she has no idea what they are or how they will benefit her business.</p> <p>Mia currently stores all regular orders in an Excel spreadsheet. She finds the spreadsheet difficult to use and keeps having to type in the same data for each customer order, which has led to data entry errors. The spreadsheet doesn't effectively retrieve information to resolve the various issues that occur and does not offer her any reporting facilities for printing off documents such as invoices and outstanding payments. The spreadsheet will be provided to you for further analysis.</p> <p>You are an IT student who visits Mia's Pizza shop on a regular basis, she has told you about her situation and you have offered your help in developing database software to deal with Mia's shop orders. In return you will receive free Pizzas for life.</p>
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Task 1	<p>Task 1</p> <p>In order to help Mia understand the purpose and the benefits of relational databases, write an illustrated report that will contain the following:</p> <p>P1: An explanation of the main features of relational databases and the benefits they bring to an organisation with examples. You will need to include an explanation of how the structure of relational databases can provide efficiencies in data storage, the elimination of data redundancy and the ease by which information can be extracted from the underlying data.</p> <p>M1: Explain with examples, the concept of Referential Integrity as it applies to relational databases and how, by using primary and foreign key relationships, the integrity of a database can be maintained.</p> <p>P2: Design a set of entities and attributes suitable to contain all the information in the supplied spreadsheet. Identify primary keys, and use those keys to form suitable relationships between the entities. Check that the proposed design is in third normal form, and then document the attributes by selecting appropriate data types and sizes. Document the attributes and explain how they will be validated. Identify the required attributes (attributes that cannot be null).</p> <p><i>This task can be completed as a team of up to three provided that each person is wholly responsible for at least one entity, although other entities can be shared between two people</i></p>
Checklist of evidence required	<p>P1: An explanation with examples of entities, attributes, relationships, primary keys, foreign keys, data redundancy. Attribute types, sizes and validation rules and a list of the benefits of reducing data redundancy and using a database as opposed to a spreadsheet.</p> <p>M1: An explanation of the importance of ensuring referential integrity when forming relationships between entities. Primary keys and Foreign Keys. Please include examples from your database design.</p> <p>P2: An Entity-Relationship diagram that contains at least 5 entities and a data dictionary (in Access or Visual Paradigm) that includes the validation rules for each attribute. The ERD should be in third normal form.</p>
Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
P1	explain the features of a relational database
P2	design a relational database for a specified user need
M1	explain referential integrity and the purpose of primary keys in building the relationships between tables

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Task 2	<p>Task 2</p> <p>P3: Implement your designs using MS Access by creating a set of tables (at least 5 tables) that have referential integrity enforced through primary/foreign key relationships to allow cascade updating and deletion of linked records.</p> <p><i>This task can be completed as a team of up to three provided that each person is wholly responsible for at least one table, although other tables can be shared between two people. Each person must however have a complete database in Access.</i></p> <p>M2: Using Mia's spreadsheet, import all the data from the spreadsheet into the relevant tables. You will need to document each step of the importation process. Your final tables must contain all the data from the spreadsheets.</p> <p>D1: A discussion into a range of common errors that may occur in the design and implementation of a relational database. Within this discussion, you will need to explain the impact that these errors could have on the integrity of data and the users. You will also need to state how these errors can be avoided.</p> <p><i>This task must be done individually</i></p>
Checklist of evidence required	<p>P3: Screen shots of each table that you are responsible for containing the imported data.</p> <p>M2: Screen shots of an example showing the steps of importing data from a spreadsheet.</p> <p>D1: An explanation with examples of how to avoid the most common database design errors</p>
Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
P3	create and populate a database
M2	import data from an external source
D1	discuss how potential errors in the design and construction of a database can be avoided