COURSE NAME / CODE			BTEC National Subsidiary / Diploma / Extended Diploma in IT
UNIT(s) No / Name			Unit 18 – Database Design
LEVEL	3	Assignment No & Title	Assignment 1 – Features of a database/Design of a database'

LECTURER/ASSESSOR	Sandra Joseph /Emmanuel Oladipo		
ISSUE DATE	26/01/2017	**DEADLINE DATE**	21/02/2017
SUBMISSION DATE			
RESUBMISSION AUTHORISATION BY LEAD INTERNAL VERIFIER*		**AUTHORISATION DATE (BY IV)**	
RESUBMISSION DATE**			

*All resubmissions must be authorised by the **Lead Internal Verifier**. Only **one** resubmission is possible per assignment, providing:

- The learner has met the initial deadlines set in the assignment, or ha met an agreed deadline extension
- The tutor considers that the learner will be able to provide improved evidence without further guidance
- Evidence submitted for assessment has been authenticated and accompanied by a signed and dated declaration of authenticity by the learner

Any resubmission evidence **must be submitted within 10 working days of receipt of assessment

Student declaration

I declare that this assignment is all my own work and the sources of information and material I have used (including the internet) have been fully identified and properly acknowledged as required.

STUDENT NAME	SIGNATURE

ASSESSMENT DETAILS & GRADING CRITERIA

(NB: Columns 1 &2 of the table below will be completed once the assignment has been submitted) Please note that criteria & evidence should be aimed to give the learner the maximum grade available within their qualification (i.e. A, Pass, Distinction)

Learning Aims Covered	LO1&LO2
LO1	Understand the features of relational databases
LO2	Be able to design, create and populate a relational database

GRADING CRITERIA FOR TASK		EVIDENCE	EVIDENCE SEEN		Page No#	CRITERIA MET			
			Y	N		Y	I	N	IV
P1	Explain the features of a relational database	**Task 1** Presentation / Word Document							
P2	Design a relational database for a specified user need	Task 1. Report with screenshots and diagrams of design							
M1	Explain referential integrity and the purpose of primary keys in building the relationships between tables	**Task 2** Presentation / Word Document							
D1	Discuss how potential errors in the design and construction of a database can be avoided	**Task 3** Presentation / Word Document							

KEY: Y = Yes, I = Incomplete, N = No

BREAKDOWN OF HOW GRADES WILL BE AWARDED:

(NB: Please tick as appropriate)

TYPE OF QUALIFICATION	TICK	DESCRIPTION
BTECS / WORKSKILLS	√	Pass / Merit / Distinction / Fail
A LEVELS / A2		A-U

Internal Verification of Assignment Brief

IV Full Name		**Signed**		**Date:**	
LIV Full Name		**Signed**		**Date:**	

BTEC SAMPLE MATERIAL

LEARNER CONSENT DECLARATION

Centre No & Name	**51330 – UTC Reading**	
Subject & Level	**BTEC National Subsidiary / Diploma / Extended Diploma in IT**	**3**
Unit No & Title	**Unit 18 – Database Design**	
Learner No & Name		

I agree to the learner work identified above, after having been made anonymous, being used to support any of the following activities, which may involve the display of work online through the BTEC website or through publications:

- Professional Development and Training
- Centre Assessment Example Material
- Standardisation Support
- Publication Materials

Assessor Signature	
Name (block capitals please)	Emmanuel Kayode Oladipo
Job Title	Director of Vocational Learning
Date:	

Learner Signature	
Name (block capitals please)	
Parent/Guardian consent if under 16 years of age	
Date:	

Please ensure that this sheet is completed on submission of your assignment.

Please note that your assignment **MUST** have the following (unless otherwise stated):

1. Cover page
2. Table of Contents
3. Introduction
4. Conclusion
5. Bibliography & References

SCENARIO

Having applied for a job as Assistant Database Administrator with the prominent database provider ***UTC Db***, you are expected to have a detailed knowledge of relational databases. You have been asked, as part of your interview, to give a presentation detailing that knowledge. Your presentation must address how business information can be represented; pertinent information on key features, such as entities, keys and referential integrity, and data validation.

TASK 1 **Evidence you must produce for this task.**

You are required to write an in depth report that demonstrate your understanding of relational databases focusing on features of relational databases;

Features of a database

(P1) *Prepare a presentation (up to 10 slides) which explains:*

- *How business information can be represented using entities and attributes*
- *How entities can be related to each other using primary and foreign keys*
- *What is meant by referential integrity*
- *How data can be validated when entered into a database*
- *Provide examples*

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
How business information can be represented using entities and attributes	18	P1
How entities can be related to each other using primary and foreign keys	18	P1
How data can be validated when entered into a database	18	P1

Task2: Design, build and test a custom business application that supports a fast growing landscape gardening company called "Coastal Corners" as they move from a small business using spreadsheets between a few people to a larger company with many people all over the country using different devices and operating systems. Your design must take on board the clients' requirements which must include the followings:

Generate customers' invoice
access to the job information
Interactive frontend
Switch board/ Dash Board of the business for easy navigation
Search facility
Reporting on customers and jobs
Security of the database
Help facility

Evidence you must produce for this task.

You are required to design and document a relational database for a specified user need based on the traffic data provided below:

At least 3 drafts of your interface/frontend design, Report and query design

Backend design to include database structure and E-R diagrams, normalisation procedure

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
Design a relational database for a specified user need based on the traffic data provided - Demonstrate normalization to 3NF based on the data provided and any assumptions made documented to meet the customer's requirements - Produce an ERD - Produce data dictionary Screen sketches of all front-end screens	18	P2

TASK 3 **Evidence you must produce for this task.**

Referential integrity

(M1) *Extend your presentation (up to 8 more slides) and explain:*

- *How referential integrity is set in a database*
- *What errors are detected when referential integrity is set*
- *How these errors can be corrected*
- *How data can be recovered from multiple tables by the use of the primary and foreign keys*
- *Provide examples*

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
How referential integrity is set in a database	18	M1
What errors are detected when referential integrity is set	18	M1
How these errors can be corrected	18	M1
How data can be recovered from multiple tables by the use of the primary and foreign keys	18	M1
Provide examples	18	M1

TASK 4 **Evidence you must produce for this task.**

Potential errors

(D1) *Extend your presentation (up to 8 more slides) to identify and explain:*

- *A range of common errors in database design and construction*
- *Discuss impact of errors*
- *How these errors can be avoided*
- *Provide examples*

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
A range of common errors in database design and construction	18	D1
Discuss impact of errors	18	D1
How these errors can be avoided	18	D1
Provide examples	18	D1

Sources of information	Textbooks • Hernandez M – Database Design for Mere Mortals: A Hands-on Guide to Relational Database Design, 2nd • Edition (Addison Wesley, 2003) ISBN 0201752840 • Kroenke D – Database Concepts, 2nd Edition (Prentice Hall, 2004) ISBN 0131451413 • Ponniah P – Database Design and Development: An Essential Guide for IT Professionals: Visible Analyst Set (John Wiley & Sons Inc, 2006) ISBN 0471760943 • Ritchie C – Relational Database Principles (Thomson Learning, 2002) ISBN 0826457134 **Website** www.databasedev.co.uk

P1

- Prepare presentation (up to 10 slides) explaining :
- How business information can be represented using entities and attributes(Ms Word or Visio)
- How entities can be related to each other using primary and foreign keys (Ms-Word or PPT)
- How data can be validated when entered into a database (Ms-Word or PPT)
- Examples provided (Ms-Word or PPT)

P2

- Demonstrate normalisation to 3NF based on the data provided and any assumptions made documented
- Produce an ERD
- Produce data dictionary
- An example of ELH
- Screen sketches of all front-end screens

M1

- Extend your presentation (up to 8 more slides) explaining: (Power Point)
- How referential integrity is set in a database (PPT)
- What errors are detected when referential integrity is set (PPT or M s-Word)
- How these errors can be corrected (PPT or M s-Word)
- How data can be recovered from multiple tables by the use of the primary and foreign keys (PPT or M s-Word)
- Examples provided (PPT or M s-Word)

D1

- Extend your presentation (up to 8 more slides) explaining (PPT or M s-Word)
- A range of common errors in database design and construction (PPT or M s-Word)
- Discuss impact of errors (PPT or M s-Word)
- How these errors can be avoided (PPT or M s-Word)
- Provide examples (PPT or M s-Word)

SUMMATIVE ASSESSMENT RECORD SHEET					
Programme		**Learner Name**		**Assessor Name**	
Unit No. & Title		**Target Learning Aims**		**Issue Date**	Click here to enter a date.
Assignment No & Title				**Final Submission Date**	Click here to enter a date.

Target criteria	**Criteria Achieved**	**Final Assessment Comments**

Summative comments			
Assessors declaration			
I certify that the evidence submitted for this assignment is the student's own and the learner will be able to provide improved evidence without guidance. I understand that any false declaration is a form of malpractice.			
Resubmission authorisation*		**Resubmission Date:**	Click here to enter a date.
* All resubmissions must be authorised. Only 1 resubmission is possible per assignment.			
Assessor Signature		**Date:**	10 May 2017
Learner comments			
Learner Signature		**Date:**	