Te Hoe Rorohiko
Department of Computing

Assessment for AS91633

Version 3

Implement complex procedures to develop a relational database embedded in a specified digital outcome

Course Code
91633

Semester One 2018

Due date: 27 July 2018, 5pm.

Credits: 6

This assessment has five (5) pages including the cover sheet.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Implement complex procedures to develop a relational database embedded in a specified digital outcome	**Skilfully implement complex procedures to develop a relational database embedded in a specified digital outcome**	**Efficiently implement complex procedures to develop a relational database embedded in a specified digital outcome**
	• showing independence with regard to decision making when producing the outcome	• designing and constructing a database with a well-organised table structure (e.g. elimination of redundant data, effective data validation, effective use of data properties)
		• producing the outcome in a manner that economises the use of resources (e.g. optimisation of data input, and effective use of shortcuts such as macros and buttons)
• designing and constructing a database with a workable table structure	• showing accuracy in designing and constructing the table structure	As Merit
• creating queries to retrieve and modify data	As Achieved	As Achieved
• allowing data in at least one database table to be changed from another application (e.g. spreadsheet, web page, Portable Document Format (PDF) form, student created custom desktop application)	As Achieved	As Achieved
• applying design elements and formatting techniques to customise data input and display	• showing accuracy in applying design elements, techniques and procedures	As Merit
• applying data integrity and testing procedures to ensure the outcome meets the specifications	As Achieved	As Achieved
• applying data access permissions as appropriate to the outcome	As Achieved	As Achieved
The relational database design includes the table structure (fields, data types, size, keys and relationships, formatting, and validation rules), interface design, and a plan for linking data between applications.		
Complex procedures to develop a relational database include: • creating queries which combine data from multiple tables • creating queries which insert, update or delete to modify data • creating customised input forms • creating customised data displays from multiple tables (e.g. reports, PDFs, webpages, program interfaces).		
Data integrity procedures may include: checking for the relevance, accuracy, and reliability of the information (e.g. formulae auditing, proof reading, spell checking).		

Introduction

This assessment activity requires you to create a relational database for the online store you have produced for the website assessment (AS91635).

You will be assessed on how well your relational database meets the specifications, how independently and efficiently you create it, and how you apply complex techniques and procedures.

Complex procedures to develop a relational database include:

- Designing and constructing a database with a workable table structure
- Creating queries to retrieve and modify data
- Allowing data in at least one database table to be changed from the website
- Applying design elements and formatting techniques to customise data input and display on the website
- Applying data integrity and testing procedures to ensure the outcome meets the specifications
- Applying data access permissions as appropriate to the outcome

Conditions of assessment

This is an individual task. You may discuss your assessment project with other students, but you may not share your assessment work with others, and all work submitted **must be your own**.

Important notes

- You are not required to create or include product categories, search engine optimisation techniques, actual purchase functionality (i.e. 'check out' and processing of PayPal, credit cards, etc.), currency conversion, or other advanced eCommerce functionality.
- You may choose to create more functionality than what is listed in the Introduction section above, although this is not required. Any extra functionality you create will be assessed so be sure you can complete it to a high standard before adding it.
- The database must be used to store data which is to be retrieved and displayed by the website using server-side scripting. This database is assessed separately to the overall website project.
- The information on the customers and products of your store is to be sourced by you.

Assessment Tasks

1. Design the database

You will need to independently develop a design for the relational database. The design must include the following elements:

1.1 A workable table structure, including:

- field names
- data types
- field sizes
- keys
- formatting
- validation rules

1.2 Entity relationship diagram showing relationships between tables.

1.4 Interface design consisting of a sketch and/or wireframe for at least *one* of your data entry forms.

1.5 A flowchart which visualises the flow of data between the website and the database.

2. Create the database, including tables, relationships, and linked table

2.1 Create your customer or product data set and normalise the data. You may use a random data generation site such as Mockaroo.com to complete this task.

2.2 Use phpMyAdmin to create a database according to your design.

2.3 Import your created customer / product data set after creating your tables.

2.4 Create the required customised data input forms on the website as specified by your design.

2.5 Using PHP embedded in your HTML, link your database to your website so that customers can use the website to:

- Register for an account
- Log in
- Edit and update their user profile
- Add a product to their shopping cart
- Delete a product from their shopping cart
- Log out

Note that the following two specifications must be met:

- The shopping cart must include a customised data display from multiple tables
- Users must be logged in to be able to edit their profile or to add a product to their shopping cart.

3. Test

3.1 Create a testing plan which will be used to ensure your database meets the specifications. The specific tests you carry out are to be decided by you, and must be of sufficient rigour to cover the following areas:

- Structural testing (including data validation)
- Functional testing
- Data testing – checking for the relevance, accuracy, and reliability of the information

Refer to the information at https://www.guru99.com/data-testing.html or use your own research skills to help you create your testing plan.

3.2 Test your database during and after development. Keep a record of the results, including how you resolved any errors, in the testing plan.

4. Submit the assessment

4.1 When you have finished, check the assessment carefully to ensure you have met all requirements. Once complete, hand in the following:

- ☐ Your database design (Task 1)
- ☐ Your exported database file (Task 2)
- ☐ Your completed testing plan (Task 3)