**Information Technology/Ultimo**

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| **Learner Number** | 807135473 | **Learner Name** | Alex Goulden |
| **Unit code** | ICTDBS504 | **Unit name and release number** | **Integrate database with a website** |

**Please note that TAFE NSW is required to retain copies of all completed assessments, where practical, for a *minimum* period of three (3) years (or in accordance with regulatory/licencing requirements) after the completion of a learner’s studies. *Refer to procedure to determine the retention period required.***

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| **Assessment Instructions** | | **This is assessment event number** 2 **of** 2 events for this unit |
| **Type of Assessment** | Written assessment. Theory and research | |
| **Instructions for Written Assessment** | Answer all tasks.  Ensure the answers are in your own words.  Ensure your name and student ID is on every page.  Fill in the feedback form section with your name, email and student ID.  Submit to your trainer by due date. | |
| **Submission instructions** | You must deliver your assessment by two methods:   * Edit this document and submit it electronically * Print this whole document with your answers (include a cover page) and delivery it in class. | |
| **What do I need to do to achieve a satisfactory result?** | To successfully complete this assessment event **all questions** must be answered correctly | |
| **Due date/time allowed** | Week 18 | |
| **Assessment feedback, review or appeals** | Feedback must be provided to you no later than 10 days after all assessment activities have been conducted.  If you want a review of your results or if you have any concerns about your results, you can contact the teacher/assessor or your Head Teacher.  You have three weeks from the date you receive your results in which to make an appeal and/or request a review.  You should receive a response within ten days of the receipt of the request.  Teachers and their Head Teacher will address any appeal in accordance with [Assessment Guidelines for TAFE NSW.](https://staff.tafensw.edu.au/policies-procedures/student-administration/assessment-guidelines/) | |

# Submission cover sheet

# and declaration

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| **Learner number:** | | 807135473 | **Learner name:** | | **Alex Goulden** | |
| **Unit code:** | | **ICTDBS504** | **Unit name:** | | **Integrate database with a website** | |
| **Assessment event number** | | **2 of 2** | **Assessment title** | | Technical Journal | |
| **Learner declaration** | | | | | | |
| This assignment is my original work and no part of it has been copied from any other source except where due acknowledgement is made.  No part of this assignment has been written for me by any other person except where such collaboration has been authorised by the assessor concerned.  I understand that plagiarism in the presentation of the work, idea or creation of another person as though it is your own. Plagiarism occurs when the origin of the material used is not appropriately cited. No part of this assignment is plagiarised.  I understand that TAFE NSW is required to retain copies of all my completed assessments, where practical, for a period of 3 years (or in accordance with regulatory/licencing requirements) after the completion of my studies | | | | | | |
| **Learner Signature:** | x | | | **Date**: | | 2/07/2020 |

### Questions

Describe a database structure

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| Record Types - These define the type of entities or research objects you wish to capture (e.g. Person).  Fields - These are the properties or attributes that describe your record types (e.g. Gender, Age, Height etc.).  In SQL specifically, databases are structured from tables, which hold rows and columns.  Data in columns are a group of data relating to the same title (FirstNames), data in rows relate to each other - usually in the form of an entity (a person’s info filled in FirstName, LastName, DateOfBirth). These are contained in tables which are a way of categorising on a global scope (Users, Orders, Products)  <http://heuristnetwork.org/define-database-structure/#:~:text=The%20database%20structure%20is%20the,Fields.>  <https://www.sqlshack.com/sql-server-table-structure-overview/#:~:text=Microsoft%20SQL%20Server%20is%20a,in%20rows%20and%20columns%20format.>  Databases used in DB and scripting classes |

Answers correct ☐ Yes ☐ No

Outline internet technology as it relates to the use of databases

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| Databases are a vital part of internet technology and act as a form of memory. Without databases information uploaded would quickly disappear or become unusable due to lack of cataloguing.  In ecommerce, databases ensure that vital systems like shopping carts and product information can be retrieved and stored.  Employee record management requires databases if employees need to be accessed digitally and through the internet. Databases allow employee data to be categorised and updated  <https://www.educba.com/database-management-system/>  Also written based on personal production of ecommerce and employee based sql/php |

Answers correct ☐ Yes ☐ No

Identify programming control structures, including object-oriented programming and structured query language (SQL)

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| OOP is based on the concept of ‘objects’ interacting with each other to produce outcomes, this is achieved through giving ‘objects’ attributes/classes. OOP is considered highly important for use in large scale programs, due to the high reusability of objects and the fact that ‘objects’ hide the internal details when run that make them up.  Procedural programming is based on the concept of ‘procedure call’ in which routines and functions contain a sequence of steps that are carried out to produce outcomes. Almost every procedural language uses these three basic control structures, examples using recipes  1. Sequence—crack and pour eggs, then add flour, then add milk.  2. Conditional—if the flour is plain use it, but if anything else, skip this step.  3. Iterative—fill cup until it is full.  SQL is a command language with pre-programmed actions specifically designed to generate queries from a client and get information in and from a relational database management system (mysql, phpMyAdmin, marinaDB). It is the main language relating to databases and servers that store data  <https://www.britannica.com/technology/computer-programming-language/Control-structures>  <https://www.quickstart.com/blog/what-is-sql-server-and-how-does-it-work/> |

Answers correct ☐ Yes ☐ No

Explain web programming concepts, including:

* authentication and web security
* hypertext transfer protocol (HTTP)
* session management
* defining the principles of stateless programming.

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| Authentication and web security refer to the processes of identifying individuals (user or in some cases a program) and protection of important functions/information. Authentication and web security most often use stateful processes, meaning a user stays authenticated and security continue to operate if a user continues to make requests.  HTTP refers to the design of which most data is transferred over the web, most commonly seen in the URL of a webpage. It is stateless, which is why sessions and cookies must be made if a user wishes to stay logged in when a http request is sent  Session management refers to the handling of an interaction between two or more devices (user and authentication in previous cases). As sessions are stored in some form of memory, this could be server side, client side or both for increased security. Sessions on the server side must be controlled and maintained by the web admin of a given site, this could be through using a proprietary authentication and storage software or through use of something like php, phpMyAdmin and SQL (as used for the scripting shopping cart project)  Stateless programs (like http) do not keep information from previous interactions/events, meaning any data given through a stateless program must be maintained in some other way if data is required more than once and goes through multiple requests. This can be achieved with cookies, token-based authentication, and sessions.  <https://medium.com/better-programming/how-do-you-authenticate-mate-f2b70904cc3a>  <https://www.tutorialspoint.com/difference-between-stateless-and-stateful-protocols#:~:text=Stateless%20Protocol%20is%20a%20network,as%20per%20the%20given%20state.&text=In%20Stateless%2C%20server%20is%20not,current%20state%20and%20session%20information.> |

Answers correct ☐ Yes ☐ No

### End of questions

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| Make sure you have written your name on each page  (for written assessments only)  then submit this whole document to your teacher/assessor for marking |

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| **IMPORTANT NOTE: When this document is complete, the assessor must**   * mark the answers using the relevant marking guide * attach it to the learner’s *Unit outcome and event results* document * complete the relevant details in the learner’s *Unit outcome and event results* document |

## **Assessment Feedback**

*NOTE: This section* ***must*** *have the assessor signature and student signature to complete the feedback.*

### Assessment outcome

☐ Satisfactory

☐ Unsatisfactory

### Assessor Feedback

☐ Has the Assessment Declaration been signed and dated by the student?

☐ Are you assured that the evidence presented for assessment is the student’s own work?

☐ Was the assessment event successfully completed?

☐ If no, was the resubmission/re-assessment successfully completed?

☐ Was reasonable adjustment in place for this assessment event?  
*If yes, ensure it is detailed on the assessment document.*

Comments:

Not yet satisfactory. Please add references, more details. Refer to the hints next page. This was given out and discussed in class also.

### Assessor name, signature and date:

### Student acknowledgement of assessment outcome

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| Would you like to make any comments about this assessment? |

### Student name, signature and date

***NOTE: Make sure you have written your name at the bottom of each page of your submission before attaching the cover sheet and submitting to your assessor for marking.***

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Description automatically generated]()