



Australian Government

Department of Education, Employment and Workplace Relations

ICADBS504A Integrate database with a website

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICALL Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to ensure database is integrated with a website.

Application of the Unit

This unit applies to web developers who are responsible for creating data-driven web applications.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</i>

Elements and Performance Criteria

1. Connect to database	1.1 Identify site data needs from technical requirements 1.2 Connect to database from web application using a web development language
2. Retrieve data from database and display on web pages	2.1 Retrieve data using structured query language (SQL) 2.2 Display data in the most appropriate control 2.3 Format data so that it is displayed in the most effective way
3. Update database data from user input	3.1 Update existing data stored in the database with user-supplied input 3.2 Insert data in the database with user-supplied input 3.3 Delete data stored in the database 3.4 Include error checking and validation

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to:
 - determine functional requirements
 - identify database access points
- communication skills to liaise with clients
- initiative and enterprise skills to provide feedback and recommend the most appropriate technology solutions
- literacy skills to:
 - follow documented instruction from a supplied guide
 - interpret workplace instructions and other technical documents
- planning and organisational skills to organise the most appropriate solution
- problem-solving skills to:
 - identify and rectify website functional problems
 - identify and resolve bugs in the created code
 - select the most efficient and effective algorithms
- research skills to:
 - find solutions to encountered problems
 - keep up-to-date with industry trends
- technical skills to:
 - apply hypertext transfer protocol (HTTP)
 - apply web programming concepts
 - create hypertext markup language (HTML) or eXtensible hypertext markup language (XHTML) pages
 - create software in a web development language
 - create SQL statements
 - create aesthetically pleasing web pages.

Required knowledge

- detailed knowledge of:
 - database structure
 - internet technology as it relates to the use of databases
 - programming control structures, object-oriented programming
 - SQL
- web programming concepts, including:
 - authentication and web security
 - HTTP
 - session management
 - stateless programming.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • create a web application which accesses a database, displaying and modifying the database data provided by user input.
Context of and specific resources for assessment	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> • requirements documentation • web server • database • web development environment • browsers • appropriate learning and assessment support when required • modified equipment for people with special needs.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • evaluation of a web application created to access, display and update data stored in a database • verbal or written questioning to ensure knowledge of the impact of data-driven web applications.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate.</p> <p>Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed.</p> <p>Indigenous people and other people from a non-English speaking background may need additional support.</p> <p>In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.</p>

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Database</i> may include:	<ul style="list-style-type: none">• Access• DB2• Informix• Ingres• Microsoft SQL (MS SQL) server• Mini SQL (mSQL)• MySQL• Oracle• Sybase.
<i>Language</i> may include:	<ul style="list-style-type: none">• ASP• ASP.NET• Coldfusion• Perlscript• PHP.
<i>User</i> may include:	<ul style="list-style-type: none">• client• external departments• individuals• internal departments.

Unit Sector(s)

Database