Australian Government

ICADBS603B Determine suitability of database functionality and scalability

Release 1

INDUSTRY
SKILLS
COUNCILS
Creating Australia's Future

ICADBS603B Determine suitability of database functionality and scalability

Modification History

Release	Comments
Release 2	This version first released with ICA11 Information and Communications Technology Version 2. Prerequisite unit removed. Added performance criteria under element 2. Added to range statement. A range of minor editorial changes. Outcomes deemed equivalent.
Release 1	This version first released with ICA11 Information and Communications Technology Version 1.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to identify current and future business requirements for a database.

Application of the Unit

This unit applies to those reviewing and managing databases.
Those with senior operational status or line management responsibility should undertake this role.

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

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency.	*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.*

Elements and Performance Criteria

1. Determine context of business need or problem	1.1. Develop *database* objectives and identify expected outcomes to be achieved 1.2. *Document* the database *problem*
2. Gather information	2.1. Analyse database to identify the business rules, entities and relationships 2.2. Identify existing and proposed business models 2.3. Identify possible *big data* applications
3. Determine database functionality	3.1. Document existing database and environment 3.2. Confirm database functionality with *client*
4. Identify scalability and functionality	4.1. Identify the reserve and long-term capacity of the database 4.2. Identify the implications for the *system* architecture, data models, data structures, hardware and software 4.3. Identify *requirements* for scalability 4.4. Compare functionality and scalability features of the database 4.5. Determine and document any gap between the features
5. Prepare database functionality and scalability report	5.1. Document functionality and scalability of database 5.2. Submit report to client for review

Required Skills and Knowledge

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

Required skills
- analytical skills to analyse business requirements   - communication skills to: - elicit information from users   - liaise with technical and non-technical personnel   - literacy skills to produce reports   - numeracy skills to perform capacity planning   - technical skills to model data processes
Required knowledge
- architecture of the network in which the database resides   - Australian Computer Society Code of Ethics   - common system hardware relating to client, server and database architecture   - data modelling   - functions and features of databases   - work health and safety (WHS) principles and responsibilities in regard to self and others

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	Evidence of the ability to: - produce a clear statement of business expectations and needs, including critical business requirements - examine and document the scalability and functionality of a database in light of future growth.
Context of and specific resources for assessment	Assessment must ensure access to: - DBMS - sample database - appropriate learning and assessment support when required - modified equipment for people with special needs.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - review of candidate's written report - evaluation of candidate's project to assess database functionality and scalability - verbal or written questioning to determine candidate's knowledge of business needs and scalability requirements.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. 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. Indigenous people and other people from a non-English speaking background may need additional support. In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.

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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.

Database may include:	• commercial off-the-shelf (COTS) database packages • object-relational databases • proprietary databases • relational databases.

Document may relate to:	• audit trails
	• standards, such as:
	   • International Organization for Standardization (ISO)
	   • International Electrotechnical Commission (IEC)
	   • Australian Standards (AS)
	   • Institute of Electrical and Electronics Engineers (IEEE)
	   • Internet Engineering Task Force (IETF)
	• naming standards
	• project-management templates
	• report writing principles
	• version control.

Problem may include:	• application • business need or opportunity • internal business • network • people in the organisation • system.
Big data may include:	• data access that incorporates high volume, high velocity and a high variety of information with fast in-depth processing • data managed by large information management specialist companies using big data technologies, such as Software AG, Oracle, IBM, Microsoft, SAP, EMC, and HP • data that is distributed within the cloud across a wide number of database servers.
Client may include:	• customer • employee • external organisation • individual • internal department.
System may include:	• application

	• business • cabling infrastructure • computers • database • database management system (DBMS) • financial system • information system • management system • network equipment • software.
Requirements may include:	• application • business • network • people in the organisation • system.

Unit Sector(s)

Database