



Australian Government

Department of Education, Employment and Workplace Relations

ICAA5147B Determine suitability of database functionality and scalability

Release: 1

ICAA5147B Determine suitability of database functionality and scalability

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit defines the competency required to identify current and future business requirements for a database. The following unit is linked and forms an appropriate cluster: • ICAA5139B Design a database No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.
------------------------	---

Application of the Unit

Application of the unit	
--------------------------------	--

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		
	ICAA4041C	Determine and confirm client business expectations and needs

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

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

ELEMENT	PERFORMANCE CRITERIA
1. Determine database functionality	1.1. Define business requirements 1.2. Confirm database objectives 1.3. Analyse database to identify the business rules, entities and relationships 1.4. Identify existing and proposed business models 1.5. Document existing database and environment 1.6. Confirm database functionality with client
2. Identify scalability and functionality requirements	2.1. Identify the reserve and long-term capacity of the database 2.2. Identify the implications for the system architecture , data models, data structures, hardware and software 2.3. Identify requirements for scalability 2.4. Compare functionality and scalability features of the database 2.5. Determine and document whether a gap between the features exists
3. Prepare database functionality and scalability report	3.1. Document functionality and scalability of database 3.2. Submit report to client for review

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
- Techniques to elicit information from users, particularly during the design and prototype phases - Short- and long-term capacity planning - Business analysis skills - Communicating with clients - Modelling of data processes - Report writing
Required knowledge
- OH&S principles and responsibilities in regard to self and others - Function and features of databases - Data modelling

REQUIRED SKILLS AND KNOWLEDGE

- Network architecture
- Common system hardware in relation to client/server/database architecture
- Australian Computer Society Code of Ethics

Evidence Guide

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 following is essential:

- Assessment must confirm the ability to develop a well-structured report that represents the client's business reality and provides advice in relation to the scalability requirements and functionality of planned database.

To demonstrate competency in this unit the learner will need access to:

- Business requirements documentation
- Business planning documentation
- Documentation relating to the technical architecture

Context of and specific resources for assessment

Many applications are dependent on specific database functionality. This unit uses application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.

Database applications involve participation in development of strategic initiatives, as well as personal responsibility and autonomy in performing complex technical operations or organising others.

The breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and coordination would be characteristic.

Assessment must ensure:

- self-directed application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting appropriate equipment, services and techniques for

EVIDENCE GUIDE	
	self and others. Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams including teams concerned with planning and evaluation functions. Group or team coordination may also be involved.
Method of assessment	The purpose of this unit is to define the standard of performance to be achieved in the workplace. In undertaking training and assessment activities related to this unit, consideration should be given to the implementation of appropriate diversity and accessibility practices in order to accommodate people who may have special needs. Additional guidance on these and related matters is provided in ICA05 Section 1. - Competency in this unit should to be assessed using summative assessment to ensure consistency of performance in a range of contexts. This unit can be assessed either in the workplace or in a simulated environment. However, simulated activities must closely reflect the workplace to enable full demonstration of competency. - Assessment will usually include observation of real or simulated work processes and procedures and/or performance in a project context as well as questioning on underpinning knowledge and skills. The questioning of team members, supervisors, subordinates, peers and clients where appropriate may provide valuable input to the assessment process. The interdependence of units for assessment purposes may vary with the particular project or scenario.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: ICAA5139B Design a database

EVIDENCE GUIDE

	An individual demonstrating this competency would be able to: • Demonstrate broad knowledge of theoretical concepts, with substantial depth in some areas • Analyse and plan approaches to technical problems • Transfer and apply theoretical concepts and technical or creative skills to a range of situations • Evaluate information to plan or research database usage • Demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas • Analyse and plan approaches to technical problems or management requirements • Transfer and apply theoretical concepts and/or technical or creative skills to a range of situations • Evaluate information, using it to forecast for planning or research purposes • Take responsibility for own outputs in relation to broad quantity and quality parameters • Take some responsibility for the achievement of group outcomes • Maintain knowledge of industry products and services
--	---

Range Statement**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.

Objectives may include but are not limited to how and what the organisation wants to achieve in:

- work environment
- problem solution processes
- preventative maintenance and diagnostic policy
- roles and technical responsibilities in the IT department

RANGE STATEMENT	
	• vendor and product service-level support agreements

RANGE STATEMENT	
Database may include but are not limited to:	• relational databases • object-relational databases • proprietary databases • commercial off the shelf (COTS) database packages
Documentation may follow:	• ISO/IEC/AS standards • audit trails • naming standards • version control • project management templates • report writing principles
Client may include but are not limited to:	• internal departments • external organisations • individual people • employees
System architecture may include but is not limited to:	• Operating system: Novell NetWare 5 or above or any operating system that has multi-user ability, Linux, Mac OS, Windows 2000 or above • Database software: Oracle, Sybase, Microsoft SQL server, Ingres, DB2, Informix, mSQL, MySQL, SQL server • Configuration: small memory model, large memory model, requests per second
Hardware may include but are not limited to:	• Workstations • personal computers • modems and other connectivity devices • networks • DSL modems • remote sites • servers
Software may include but are not limited to:	• commercial • in-house • packaged or customised software
Requirements may be in reference to:	• business • system • platform • application • database • network

RANGE STATEMENT	
	• people in the organisation
Scalability	• May include reserve capacity and long-term capacity. In relation to databases, scalability relates to multi-tier architecture, scalable workflow architecture, database replication, distributed databases, server clustering

Unit Sector(s)

Unit sector	Analyse and Design
-------------	--------------------

Co-requisite units

Co-requisite units		

Competency field

Competency field	
------------------	--