ICADBS401A Identify physical database requirements

Release: 1

ICADBS401A Identify physical database requirements

Modification History

Release	Comments
Release 1	This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to identify the physical requirements of a database, including a data dictionary and security and design specifications.

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.

Application of the Unit

This unit applies to database administrators who are required to plan the building of a database.

It is necessary before designing a database to take into consideration a range of requirements, including current IT architecture and client requirements, the organisation's IT standards especially related to security, and the outcomes of the business-analysis process.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	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. Identify database scope	1.1 Review *requirements* of the user and current *system architecture*
	1.2 Determine *database* size from requirements and technical specifications
	1.3 Document database and scope of project
	1.4 Evaluate several *database-management systems* against requirements and make appropriate selection
2. Identify database requirements	2.1 Review technical specifications for the database
	2.2 Identify database tables and relationships
	2.3 Identify database data dictionary, table attributes and keys
	2.4 Develop database reports based on *acceptance criteria* and requirements
3. Identify security requirements	3.1 Review *system*-security plan
	3.2 Clarify and confirm chosen database-management system and user security required for the database to ensure database security is aligned to security-system plan
	3.3 Identify, evaluate and record database performance, recovery and audit trail needs
4. Seek client feedback and approval	4.1 Present database scope, technical requirements and security documentation to user for feedback
	4.2 Review user feedback and adjust database documentation as required
	4.3 Present database documentation to user for final approval

Required Skills and Knowledge

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

Required skills

- analytical skills to review user requirements, system architecture and security plan
- communication skills to liaise with user
- literacy skills to:
    - produce database reports
    - review user feedback
- problem-solving skills to develop technical solutions
- technical skills to evaluate, identify and determine database requirements using database modelling.

Required knowledge

- broad knowledge of:
    - database design
    - general features and capabilities of current industry-accepted hardware and software products
    - quality assurance practices
    - client business domain
    - current principles of databases
    - detailed technical knowledge of database requirements.

Innovation and Business Skills Australia

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: • analyse client requirements • identify technical considerations affecting the physical design of a database • produce a security plan for the database.
Context of and specific resources for assessment	Assessment must ensure access to: • user-business requirements • technical documentation defining architecture platform and operating system specifications • database-supplier technical specifications and manuals • data samples • database package • 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 the final database, specifying business rules, agreed budget and timeframe
	• evaluation of documentation, detailing:
	  • database directories
	  • calculation of space requirements for tables
	  • additional space requirements
	  • design of node groups
	  • security plan.

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.

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.

Requirements may relate to:	• application • business • network • people in the organisation • system.
User may include:	• department within the organisation • person within a department • third party.

System architecture may include:	• configuration:
	  • large memory model
	  • requests per second
	  • small memory model
	• database software:
	  • DB2
	  • Informix
	  • Ingres
	  • Microsoft Structured Query Language (MS SQL) server
	  • Mini SQL (mSQL)
	  • MySQL
	  • Oracle
	  • Sybase
	• operating system:
	  • Novell NetWare
	  • multi-user ability
	  • Linux
	  • Mac
	  • Windows.

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

systems may include:	• online • partitioned geographically • thematically distributed.
Acceptance criteria may include:	• cost implications • logistical considerations • technical • timeframe.
System may include:	• application • business • computers • financial system • information system • management system • network • software.

Unit Sector(s)

Database