Australian Government

Department of Education, Employment and Workplace Relations

ICAB4060B Identify physical database requirements

Release: 1

ICAB4060B Identify physical database requirements

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit defines the competency required to create a physical database using a data dictionary and design specifications. The following units are linked and form an appropriate cluster: • ICAA4041C Determine and confirm client business expectations and needs • ICAB4059B Develop detailed technical design • ICAB4061B Monitor physical database implementation • ICAD4043B Develop and present a feasibility report • ICAS4125B Monitor and administer 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. 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*** as required 4.3. Present ***database*** and documentation to ***user*** for final approval

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• Design and analysis skills for identifying, analysing and evaluating a range of solutions (e.g. when DBMS options are evaluated through iteration against technical specifications and client requirements

REQUIRED SKILLS AND KNOWLEDGE
• DBMS administration skills for identifying, analysing and evaluating a range of solutions • Data modelling skills for identifying, analysing and evaluating a range of solutions • Problem solving skills for a defined range of unpredictable problems involving participation in the development of technical solutions (e.g. when DBMS options are evaluated through iteration against technical specifications and client requirements)
Required knowledge
• Three or more current principles of databases • Current industry-accepted hardware and software products, with knowledge of general features and capabilities • Database design • Broad knowledge of quality assurance practices (e.g. when identifying database scope and database requirements) • Broad general knowledge of the client business domain (e.g. when identifying database scope) • Detailed technical knowledge of database requirements

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 identify technical considerations affecting the physical design of a database and the ability to build a database that meets the client's database performance requirements. • The final database will meet specified business rules, agreed budget and timeframe. The database will perform efficiently in the runtime environment (the environment required to operate the designed solution, not the development environment). • Reports must meet the specific output requirements and be presented in a logical and accessible manner. To demonstrate competency in this unit the person will require access to: • Client requirements • Project deliverables • Acceptance criteria • Current IT blueprint • Security system plan • Technical specifications • Business analysis process outcomes Assessment of this unit of competency will include a review of developed documents detailing: • Database directories • Calculation of space requirements for tables • Additional space requirements • Design of node groups
Context of and specific resources for assessment	Technical documentation defining architecture, platform and operating system specifications; database supplier technical specifications and manuals; data samples; database package.

EVIDENCE GUIDE	
	The breadth, depth and complexity of knowledge and skills in this competency would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance would be involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature. Assessment must ensure: • Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop new criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills would be characteristic. Applications may involve responsibility for, and limited organisation of, others.
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 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

EVIDENCE GUIDE	
	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: • ICAA4041C Determine and confirm client business expectations and needs • ICAB4059B Develop detailed technical design • ICAB4061B Monitor physical database implementation • ICAD4043B Develop and present a feasibility report • ICAS4125B Monitor and administer a database An individual demonstrating this competency would be able to: • Demonstrate understanding of a broad knowledge base incorporating some theoretical concepts • Apply solutions to a defined range of unpredictable problems • Identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas • Identify, analyse and evaluate information from a variety of sources • Take responsibility for own outputs in relation to specified quality standards • Take limited responsibility for the quantity and quality of the output of others • Maintain knowledge of industry products and services

Range Statement

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.	
Requirements may be in reference to:	• business • system • application • network • people in the organisation
User may include:	• a person within a department • a department within the organisation • a third party
System architecture may include but is not limited to:	• Operating system: Novell NetWare 5 or above or 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
Database management system may include:	• distributed or centralised • on-line • partitioned geographically • thematically distributed
Database may include but is not limited to:	• relational databases • object-relational databases • proprietary databases • commercial off-the-shelf (COTS) database packages
Acceptance criteria may include:	• timeframe • cost implications • technical • logistical considerations
System may include but is not limited to:	• network • application • software • business • computers

RANGE STATEMENT	
	• financial system • management system • information system

Unit Sector(s)

Unit sector	Build

Co-requisite units

Co-requisite units		

Competency field

Competency field	