



Australian Government

Department of Education, Employment and Workplace Relations

ICAA5153B Model data objects

Release: 1

ICAA5153B Model data objects

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit defines the competency required to understand business operations, identify entities and data, diagrammatically represent their relationships and prepare a data model. The following unit is linked and forms an appropriate cluster: • ICAA5154B Model data processes No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.
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Application of the Unit

Application of the unit	
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify entities and relationships	1.1. Analyse business data to understand operations 1.2. Identify boundaries of the system 1.3. Identify entities , attributes, data types and relationships of data 1.4. Review business rules to determine impact 1.5. Document relationships in an entity relationship diagram
2. Develop normalisation	2.1. Identify suitable business data 2.2. Undertake normalisation of business data and document results 2.3. Compare normalisation results with entity relationship diagram 2.4. Reconcile differences between data, if any
3. Validate model	3.1. Validate data model with client 3.2. Resolve issues or recommendations arising 3.3. Document completed data model 3.4. Submit to client for final approval

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- Data modelling
- Transferring customer requirements into data model
- Developing entity-relationship models in tables
- Relating identifier selection to business domain
- Relating user specifications to data model

Required knowledge

- Particular business or domain
- Validation procedures and processes
- Function and features of an approach to data modelling (e.g. the entity-relationship model)

REQUIRED SKILLS AND KNOWLEDGE

- Database identifiers and their impact on database usability
- Function and features of user-defined types, structured types, reference types and user-defined functions
- Type hierarchies (e.g. sub types, super types, root types with reference to the development of structured data types)
- Features and function of keys (e.g. unique keys, composite keys, primary keys and primary index)
- Features and function of time stamps in relation to the use of keys
- Normalisation rules and processes

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 model valid data objects and normalise the model.

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

- Client business requirements
- Database software

Context of and specific resources for assessment

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 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

EVIDENCE GUIDE

	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: - ICAA5154B Model data processes An individual demonstrating this competency would be able to: - 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

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	• Take some responsibility for the achievement of group outcomes • Maintain knowledge of industry products and services
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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.

System may include but is not limited to:

- databases
- applications
- servers
- operating systems
- gateways
- application service provider
- ISP

Entities may include:

- person
- object
- concept

Relationships may include:

- one-to-many
- many-to-one
- many-to-many
- one-to-one

Data types may include the following categories:

- numeric
- character string
- double-byte (or graphic) character string
- date-time and binary string
- large Object (LOB), binary large object (BLOB)
- character large object (CLOB), double-byte character large object (DBCLOB)
- user-defined type (UDT)
- structured types and reference types

Unit Sector(s)

Unit sector	Analyse and Design
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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