

ICAB4225A Unit Descriptor

Automate processes

This unit defines the competency required to automate solutions by using basic scripting processes and applicationspecific scripting options.

Unit Sector

Build

ELEMENT

PERFORMANCE CRITERIA

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| 1. Develop algorithms to represent solution to a given problem | 1.1 Develop an algorithm which is an exact and sufficient description of the solution
1.2 Develop an algorithm which takes account of all expected possible situations
1.3 Develop an algorithm which is guaranteed to end |
| 2. Describe structures of algorithms | 2.1 Demonstrate use of structure, sequence, selection and iteration
2.2 Use structures to describe algorithmic solutions to a problem |
| 3. Design and write script | 3.1 Create an abstract design to fulfil the <i>requirements</i> of the proposed process
3.2 Review the abstract design for omissions or errors
3.3 Translate the abstract design to the chosen <i>script language</i>
3.4 Create internal script document |
| 4. Verify and review script | 4.1 Check the script for syntax and semantic errors
4.2 Identify areas that are not covered or are covered incorrectly in the script |
| 5. Document script | 5.1 Create technical-level documentation
5.2 Create user-level documentation |

KEY COMPETENCIES

The seven Key Competencies represent generic skills considered necessary for effective participation by an individual in the workplace.

Performance Level 1 at this level, the candidate is required to undertake tasks effectively

Performance Level 2 at this level, the candidate is required to manage tasks

Performance Level 3 at this level, the candidate is required to use concepts for evaluating and reshaping tasks

The following Key Competency levels have been considered within the structure of this unit's Performance Criteria.

Key Competency	Performance Level
Communicating ideas and information	2
Collecting analysing and organising information	3
Planning and organising activities	3
Working with others and in teams	1
Using mathematical ideas and techniques	2
Solving problems	2
Using technology	2

RANGE STATEMENT

The Range Statement contextualises the unit of competency and provides a focus for assessment. The information provided is intended to define the scope of assessment and to assist assessors define the performance to be achieved by an individual in the workplace. The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Italicised wording in the Performance Criteria is detailed as follows.

Requirements	May be in reference to the business, system, application, network or people in the organisation
Script language	May include Java Script, Python, Perl, Shell script or VB Script
Client	May include but is not limited to internal departments, external organisations, clubs, individual people and internal employees

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the assessment guidelines for this Training Package.

Critical aspects of evidence

Assessment will confirm knowledge of algorithm design and development.

Assessment will develop an algorithmic statement of a solution for a set process.

Knowledge and skills

Knowledge includes:

- Scripting language syntax
- Scripting techniques
- Debugging knowledge for a variety of scripting scenarios

Skills include:

- Creation of scripts to automate application system tasks
- Manipulation and automation of data
- Execution of scripts for set repeat time slices/single runs or break-out loops
- Interaction with user via script
- Using inbuilt scripting options for a variety of scenarios

Assessment guidance

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 Introduction.

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 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.

Resources

To demonstrate competency in this unit the person will require access to:

- Applications capable of being scripted or having own scripting language
- Templates for automating processes

Role context

Automating processes using inbuilt scripting languages forms a key part of increasing throughput for applications to automate processes. All applications or systems administration should examine the options to automate processes to enhance performance. Automating processes are an integral part of contemporary computing.

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.

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.

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

Additionally, an individual demonstrating this competency would be able to:

- Understand the application or process that scripting will control
- Demonstrate basic theoretical knowledge of algorithm design
- Apply scripting concepts to a variety of manual operations