Australian Government

Department of Education, Employment and Workplace Relations

ICAPRG405A Automate processes

Release: 1

INDUSTRY
SKILLS
COUNCILS
Creating Australia's Future

ICAPRG405A Automate processes

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 write scripts to automate solutions by using basic scripting processes and application-specific scripting options.

Application of the Unit

This unit applies to individuals in information and communications technology (ICT) support roles who are required to automate tasks. System administrators make decisions about what processes to automate in order to expedite servers' operations.

Licensing/Regulatory Information

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.

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. 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 or code	3.1 Create an abstract design to fulfil the *requirements* of the proposed process
	3.2 Review the abstract design for omissions or errors
	3.3 Translate the abstract design to the chosen *language*
	3.4 Create internal documentation
4. Verify and review script or code	4.1 Check the script or code for syntax and semantic errors
	4.2 Identify areas that are not covered or are covered incorrectly in the script or code
5. Document script or code	5.1 Create technical-level documentation
	5.2 Create user-level documentation

Required Skills and Knowledge

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

Required skills

- communication skills to interact with user via script
- literacy skills to create technical and user level documentation
- technical skills to:
    - create scripts to automate application system tasks
    - execute scripts for set repeat time slices, single runs or break-out loops
    - manipulate and automate data
    - use inbuilt scripting options for a variety of scenarios.

Required knowledge

- detailed knowledge of:
    - debugging for a variety of scripting scenarios
    - scripting language syntax
    - scripting techniques.

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: • develop an algorithmic statement of a solution for a set process • produce a functional script to automate a set process • document this script both internally and externally.
Context of and specific resources for assessment	Assessment must ensure access to: • applications capable of being scripted or having own scripting language • templates for automating processes • executable scripts for set repeat time slices, single runs or break-out loops • debugging tools • 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:
	
	• verbal or written questioning to assess knowledge of application or process that scripting will control
	• evaluation of algorithm design and scripting concepts to a variety of manual operations
	• review of scripting:
	  • results on appropriate device
	  • documentation.

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.
Language may include:	• JavaScript • Perl • Python • shell script • VBScript.

Unit Sector(s)

Programming and software development