



Australian Government

ICTPRG414 Apply introductory programming skills in another language

Release: 1

ICTPRG414 Apply introductory programming skills in another language

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to carry out programming activities using a procedural approach.

It applies to individuals working in programming, development and technical roles. They may work as programmers, software developers or may be IT staff with responsibility for conducting programming activities, including writing, maintaining and updating programs, defining data and file handling.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Programming and software development

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Apply basic language syntax and layout	1.1 Apply basic language syntax rules 1.2 Use language data types, operators and expressions to create clear and concise code 1.3 Use appropriate language syntax for sequence, selection and iteration constructs
2. Code using data structures	2.1 Use data structures 2.2 Write code to create and manipulate arrays

ELEMENT	PERFORMANCE CRITERIA
	2.3 Design, define and use data structures
3. Code using standard algorithms	3.1 Create sequential search, binary search, insertion and deletion algorithms to operate on arrays 3.2 Code standard sequential access algorithms and random access algorithms
4. Debug code	4.1 Use stand-alone debugging tools or tools provided by integrated development environment (IDE) to debug code 4.2 Use a debugger to trace code execution and examine variable contents to detect and correct errors
5. Document activities	5.1 Follow organisational guidelines for developing maintainable code and adhere to provided coding standard when documenting activities 5.2 Apply internal documentation, suitable for use by peers, to all code created and use documentation tools available in target language when documenting activities
6. Test code	6.1 Design and document tests 6.2 Capture and record test results

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	5.1	Interprets and critically analyses and applies appropriate strategies to construct meaning from complex texts
Writing	5.2, 6.1, 6.2	Displays knowledge of structure and layout, employing broad vocabulary, grammatical structure and conventions appropriate to text
Navigate the world of work	5.1, 5.2	Takes personal responsibility for following explicit and implicit policies, procedures and industry standards
Get the work done	1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 6.1, 6.2	Automatically implements standard procedures for routine decisions when programming, according to guidelines and standards

		• Uses analytical processes to decide on a course of action, establishing criteria for deciding between options • Understands key principles and concepts underpinning the design and operation of digital systems and tools
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTPRG414 Apply introductory programming skills in another language	ICAPRG414A Apply introductory programming skills in another language	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTPRG414 Apply introductory programming skills in another language

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Performance Evidence

Evidence of the ability to:

- perform coding activities to create, maintain and update programs using basic language and layout
- write coding using data structures and standard algorithms, and following guidelines
- debug code
- generate design and code documentation
- test and confirm that the application meets program specifications
- record the test results.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe and explain programming techniques
- describe documentation techniques
- give details of application development processes
- summarise testing techniques.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the programming and software development field of work and include access to:

- integrated development environment (IDE) for the determined language
- specific tools and licences, depending on particular platform and language.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

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