



**Australian Government**

# **ICTPRG440 Apply introductory programming skills in different languages**

**Release: 1**

# ICTPRG440 Apply introductory programming skills in different languages

## Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

## Application

This unit describes the skills and knowledge required to carry out introductory programming activities including application of basic language syntax, coding and debugging code in different languages.

It applies to those who work in programming, development and technical roles. This includes programmers, software developers and as IT staff responsible 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 Identify basic language syntax rules 1.2 Use language data types, operators and expressions 1.3 Use sequence, selection and iteration constructs using required language syntax
2. Code using data structures and standard algorithms	2.1 Use data structures 2.2 Create and manipulate data structures through code 2.3 Create sequential search, binary search, insertion and deletion algorithms on data structures

3. Debug, document and test code	<p>3.1 Debug code using stand-alone debugging tools and tools provided by integrated development environment (IDE)</p> <p>3.2 Trace code execution and examine variable contents using debugger</p> <p>3.3 Develop maintainable code according to organisational guidelines and provided coding standard when documenting activities</p> <p>3.4 Apply internal documentation to all code created using documentation tools available in target language</p> <p>3.5 Design and document tests according to organisational guidelines</p> <p>3.6 Capture and record test results according to organisational requirements</p>
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## Foundation Skills

*This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.*

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> <li>Interprets and critically analyses and applies strategies and constructs meaning from complex texts</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Prepares documentation recording process and results for tests performed according to organisational requirements</li> <li>Writes and edits code and technical data in a logical manner using required syntax</li> </ul>
Problem solving	<ul style="list-style-type: none"> <li>Decides on a course of action using analytical processes</li> </ul>
Self-management	<ul style="list-style-type: none"> <li>Takes personal responsibility and follows explicit and implicit policies, procedures and industry standards</li> <li>Automatically implements standard procedures in routine decisions when programming according to guidelines and standards</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Interprets key principles and concepts underpinning the design and operation of digital systems and tools</li> </ul>

## Unit Mapping Information

Supersedes and is equivalent to ICTPRG414 Apply introductory programming skills in another language.

## **Links**

Companion Volume Implementation Guide is found on VETNet -

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