



Australian Government

ICTPRG549 Apply intermediate object-oriented language skills

Release: 2

ICTPRG549 Apply intermediate object-oriented language skills

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 undertake intermediate level programming tasks using an object-oriented programming language.

It applies to software developers in a variety of fields who are required to produce programs in object-oriented languages.

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. Build applications	1.1 Determine and document program requirements according to object-orientated programming specifications 1.2 Divide multiple source-code files into logical units and packages and collect data in internal storage 1.3 Implement internal data-sorting and searching facilities according to object-orientated programming specifications 1.4 Employ integrated-development environment facilities and make files to automate program building 1.5 Use facilities in specific language for persisting objects to binary files and confirm program stability
2. Write interactive database programs	2.1 Design, document and implement programs that connect to the required database according to program specifications 2.2 Design, document and implement programs that use language

ELEMENT	PERFORMANCE CRITERIA
	facilities according to program specifications 2.3 Design, document and implement programs that use language facilities to manipulate database structure 2.4 Write programs that deliver transactional integrity according to program requirements
3. Write graphical user interface	3.1 Employ graphical user interface (GUI) framework according to language requirements 3.2 Use standard GUI components according to object-orientated programming specifications 3.3 Respond to user and program-generated events and according to program requirements
4. Debug and test application	4.1 Examine variables and trace running code 4.2 Detect logical and coding errors according to program requirements 4.3 Examine variable contents during execution and detect and correct errors 4.4 Design and document limited tests of code 4.5 Test and document produced code and determine compliance with the program specification

Foundation Skills

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

SKILL	DESCRIPTION
Learning	Monitors outcomes of decisions and results and identifies key concepts and principles that may be adaptable in the future
Oral communication	Articulates information and requirements, using effective communication techniques and industry standard technical language intended for audience and environment
Reading	Analyses and interprets technical documents
Writing	- Accurately records and completes documentation according to organisational formats and procedures - Writes and edits code and technical data in a logical manner using required syntax
Planning and organising	Creates, and selects, a required application that meets the set requirements

SKILL	DESCRIPTION
Problem solving	- Identifies technical or conceptual issues, and applies analytical processes, to resolve these issues - Uses analytical and lateral thinking to review current practices, and to develop new or improved software or systems
Self-management	Uses systematic processes, setting goals, gathering required information and identifying and evaluating options against agreed criteria
Technology	Uses a range of digitally based technologies to access, extract, and share relevant information in order to achieve the required outcomes

Unit Mapping Information

Supersedes and is equivalent to ICTPRG527 Apply intermediate object-oriented language skills.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for ICTPRG549 Apply intermediate object-oriented language skills

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- design and build at least one simple application program from a problem scenario and program specification.

In the course of the above, the candidate must:

- use different object-oriented programming language techniques
- check code optimisation.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- data structures applicable to applying intermediate object-oriented language skills
- object-oriented programming concepts and programming language required to apply intermediate object-oriented language skills
- process and techniques related to use of a graphical user interface (GUI), to interact with an operator
- documenting applications required to apply intermediate object-oriented language skills.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- oriented design structures
- programming languages that support object-oriented development
- integrated development environment (IDE)

- database management system (DBMS).

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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