



Australian Government

ICTPRG527 Apply intermediate object-oriented language skills

Release: 1

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

It applies to programmers 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 using the provided language utilities	1.1 Review the program requirements 1.2 Divide multiple source-code files into logical units and packages 1.3 Use at least two of the utilities of the target language, allowing for the internal storage of collections of data 1.4 Use the utilities of the target language, providing internal data-sorting and searching facilities

ELEMENT	PERFORMANCE CRITERIA
	<p>1.5 Employ integrated-development environment facilities, to make files to automate program building</p> <p>1.6 Follow the guidelines for developing maintainable code, adhering to coding standards</p> <p>1.7 Use the facilities in the language for persisting objects to binary files</p> <p>1.8 Use the operator and function or method overloading facilities available in the language, at an introductory level</p> <p>1.9 Use exception-handling techniques to ensure program stability</p> <p>1.10 Use of a class that is based on multiple inheritances</p>
2. Write programs that interact with a database	<p>2.1 Design and implement programs that connect to a database</p> <p>2.2 Design and implement programs that use the language facilities to extract, update, and delete data stored in a database</p> <p>2.3 Design and implement programs that use the language facilities to manipulate database structure (query, create and delete)</p> <p>2.4 Write programs that deliver transactional integrity</p>
3. Write the graphical user interface	<p>3.1 Employ the graphical user interface (GUI) framework, or text windowing interface, appropriate to the chosen language</p> <p>3.2 Use standard GUI components</p> <p>3.3 Use the facilities within the language for GUI objects to respond to user and program-generated events</p>
4. Debug the application	<p>4.1 Use stand-alone debugging tools, or tools provided by the integrated development environment, to examine variables, and trace the running code</p> <p>4.2 Use the debugger to detect logical and coding errors</p> <p>4.3 Use the tracing of code and examination of variable contents during execution, to detect and correct errors</p>
5. Test the application	<p>5.1 Design and document limited tests of code</p> <p>5.2 Undertake limited testing of the produced code to ensure that it complies with the program specification</p> <p>5.3 Capture and document the test results</p>
6. Create and maintain documentation	<p>6.1 Read and interpret the supplied design document, to create the code</p> <p>6.2 Create and maintain program documentation</p>

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	1.1, 1.6, 6.1	<ul style="list-style-type: none"> Analyses and interprets technical documents
Writing	2.2, 2.3, 3.1, 3.3, 5.1, 5.3, 6.2	<ul style="list-style-type: none"> Completes technical documentation, selecting the appropriate vocabulary and structure for the intended audience
Get the work done	1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.9, 1.10, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 5.2	<ul style="list-style-type: none"> Creates, and selects, an appropriate application that meets the set requirements Uses a range of digitally-based technologies to access, extract, and share relevant information in order to achieve the required outcomes 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

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTPRG527 Apply intermediate object-oriented language skills	ICAPRG527A Apply intermediate object-oriented language skills	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>