



Australian Government

ICTPRG501 Apply advanced object-oriented language skills

Release: 1

ICTPRG501 Apply advanced object-oriented language skills

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 advanced programming tasks using an object-oriented programming language.

It applies to individuals who are programmers producing complex object-oriented programming.

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. Develop client-server application	1.1 Build and test object-oriented applications 1.2 Make use of features of language that enable inter-process communication through at least one mechanism 1.3 Make use of features of language that enable remote procedure calls (RPCs) using class based on multiple inheritances 1.4 Build programs using classes based on nested classes
2. Develop graphical user interface (GUI)	2.1 Code to implement drag and drop 2.2 Develop GUI help files 2.3 Code using 2-D graphics

ELEMENT	PERFORMANCE CRITERIA
3. Build applications	3.1 Code within existing architectural framework 3.2 Ensure code follows standards for object-oriented language 3.3 Develop application that includes data transfer between client and server 3.4 Review concept of design patterns used by architectural framework
4. Debug code	4.1 Use stand-alone debugging tools or tools provided by integrated development environment to examine running code 4.2 Detect logical and coding errors using debugger 4.3 Detect and correct errors by tracing code and examining variable content
5. Test application	5.1 Design and document tests to be performed 5.2 Undertake limited testing of produced code to ensure it complies with program specification 5.3 Document test results
6. Document system	6.1 Demonstrate adherence to guidelines for developing maintainable code and company or institutional coding standards 6.2 Create code using supplied design documents 6.3 Create and maintain program documentation 6.4 Ensure that user documentation in form of online help is built into applications

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	3.2, 6.1, 6.2	Interprets and critically analyses complex texts and applies appropriate strategies to construct meaning from complex standards and guidelines documents
Writing	5.1, 6.1, 6.3	Displays knowledge of structure and layout, employing broad vocabulary, grammatical structure and conventions appropriate to text when creating program documentation

		and documenting tests and test results
Numeracy	1.3, 1.4	Selects from, and applies, an expanding range of mathematical and problem-solving strategies
Get the work done	All	- Accepts responsibility for planning and sequencing complex tasks and workload, taking into account capabilities, efficiencies and effectiveness - Uses systematic, analytical processes in complex, non-routine situations, setting goals, gathering relevant information, and identifying and evaluating options against agreed criteria - 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

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTPRG501 Apply advanced object-oriented language skills	ICAPRG501A Apply advanced object-oriented language skills	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 ICTPRG501 Apply advanced object-oriented language skills

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Performance Evidence

Evidence of the ability to:

- develop client-server applications using an object oriented language
- produce a graphical user interface (GUI)
- build, debug and test the applications
- produce documentation for the applications.

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 the architecture of a framework for web-enabled application development
- summarise the techniques for implementing inter-process communication
- describe the process for the development of large-size application
- identify and outline testing techniques as applied to distributed application development
- identify and outline techniques for implementing third-party supplied code.

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:

- database management system (DBMS)
- networked computers
- software-development environment
- technical requirements.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

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