



Australian Government

ICTPRG430 Apply introductory 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 4.0.

Application

This unit describes the performance outcomes, skills and knowledge required to undertake introductory programming tasks using an object-oriented programming language including tool usage, documentation, debugging, and testing techniques.

It applies to individuals who are programmers in a variety of fields and who are required to produce simple 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 Determine application design	1.1 Review and clarify user requirements with user 1.2 Plan and determine application design specifications to satisfy user requirements
2. Implement the application design	2.1 Develop application according to application design and organisational code conventions 2.2 Document application according to organisational documentation conventions
3. Test the application	3.1 Develop tests to determine that application logic and syntax satisfies user requirements and application specifications, and modify application to meet user requirements and application

	specifications 3.2 Document tests according to organisational documentation conventions
4. Hand over the application to the user	4.1 Review application against user requirements to ensure user requirements are satisfied 4.2 Present application to user and obtain user acceptance

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	Evaluates, and integrates, information and ideas to construct meaning and selects, and applies reading strategies in relation to design specifications, coding standards, and coding- language documentation
Writing	Communicates relationships between ideas and information, in a style appropriate to the audience and purpose, and selects the vocabulary, grammatical structures and conventions appropriate to the text, in relation to coding, recording outcomes, and documenting activities
Numeracy	- Selects from, and flexibly applies, mathematical and problem-solving strategies and techniques, in a programming context - Uses formal written mathematical language and representation, in the context of programming
Navigate the world of work	Recognises and follows, explicit and implicit standard and meets expectations associated with own role when developing code that is compliant with standards and guidelines
Get the work done	- Uses a formal decision-making process, identifying and evaluating several choices against a limited set of criteria, when selecting language data types, operators and expressions - Evaluates the effectiveness of decisions, in terms of how well they meet the stated design specifications - Uses analytical processes to decide on a course of action when debugging - Utilises features within applications in order to develop software programs - Recognises, and uses language and symbols, when applying the coding syntax - Actively identifies systems, devices and applications with the potential to meet current and future needs regarding programming

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTPRG430 Apply introductory object-oriented language skills	ICTPRG406 Apply introductory object-oriented language skills	Edits to elements 1–4, foundation skills, and assessment requirements to clarify intent.	Equivalent unit

Links

Companion Volume Implementation Guides are available from VETNet -

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

Assessment Requirements for ICTPRG430 Apply introductory object-oriented language skills

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Performance Evidence

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

- Select and use three language data types, three operators and three expressions
- Use correct language syntax for one sequence, one selection and two iteration constructs
- Use a modular approach to implement the logic for one object operation
- Implement a class that uses arrays of primitive data types twice.
- Read from and write to one text file
- Implement two classes that each contain four instance variables
- Implement one class that contains two options for object construction
- Implement one class that uses user-defined object aggregation
- Implement polymorphism once for code extensibility
- Use one debugging tool
- Apply code and documentation conventions that specify at least 3 aspects, according to organisational requirements
- Perform and document two unit test cases
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Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- Processes and techniques related to object-oriented programming, including the concepts and language
- Syntax language rules, data types structures
- Primitive instance variables
- Class variables
- Small-size application development processes
- Polymorphism and inheritance
- Debugging and testing approaches and techniques

- Constructors
- Object aggregation
- Sequence, selection and iteration constructs
- Organisational documentation
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Assessment Conditions

Skills must be demonstrated in a workplace or simulated environment where conditions are typical of those in an ICT working environment or workplace. This includes:

- Integrated development environment
- Applications relevant to software development
- Organisational code and documentation conventions
- User requirements
- Individual user to consult

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

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