Australian Government

Department of Education, Employment and Workplace Relations

# ICAPRG525A Build Java applets

**Release: 1**

INDUSTRY
SKILLS
COUNCILS
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**ICAPRG525A Build Java applets**

## Modification History

| Release | Comments |
|---|---|
| Release 1 | This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0* |

## Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to compile and run an applet that executes in Java-enabled browsers and interacts with users.

## Application of the Unit

This unit applies to individuals involved in software, web or games development who are required to build applets using Java that interact with users via a browser.

## Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

## Pre-Requisites

Not applicable.

## Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

| Element | Performance Criteria |
|---|---|
| *Elements describe the essential outcomes of a unit of competency.* | *Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.* |

## Elements and Performance Criteria

| 1. Create Java source file | 1.1 Create a file with a text editor |
|---|---|
| | 1.2 Create a sub-class of the class java.applet.Applet |
| | 1.3 Ensure that applet sub-class implements at least one of the following methods: init and paint |
| | 1.4 Define classes that contain instance variables, methods and local variables |
| | 1.5 Ensure that the init method initialises instance variables and constructs any graphical interface used in the applet sub-class |
| | 1.6 Implement the paint and update methods to manage output that is drawn in the applet window |
| | 1.7 Incorporate event handling methods |
| | 1.8 Implement code that allows a *user* to enter values and assigns these values to variables |
| | 1.9 Use available graphical user interface (GUI) components to allow user interaction with the applet |
| | 1.10 Specify and load images and sounds |
| | 1.11 Include comments to describe the behaviour of the applet |
| 2. Compile source file | 2.1 Use a *Java compiler* to compile the file |
| | 2.2 Correct errors detected by the compiler |
| | 2.3 Confirm basic correctness of file to ensure that all variables have been initialised |
| | 2.4 Ensure compiler creates a class file and the class is interpreted correctly |
| 3. Run applet | 3.1 Create and name a hypertext markup language (HTML) file and add APPLET tag |
| | 3.2 Write the applet class file to match the HTML document that contains APPLET tag |
| | 3.3 Confirm that the applet loads and executes correctly |
| | 3.4 Identify and correct run-time errors |
| | 3.5 Identify and correct logic errors |
| | 3.6 Ensure that the appearance of the applet window renders it accessible and intuitive for the user, and that its design complies with organisational standards |
| | 3.7 Ensure that user interaction is implemented efficiently and effectively |

# Required Skills and Knowledge

*This section describes the skills and knowledge required for this unit.*

## Required skills

- problem-solving skills to apply solutions to Java applet problems
- technical skills to:
    - use Java programming
    - use object-oriented design software
    - write HTML code.

## Required knowledge

- detailed knowledge of:
    - object-oriented programming concepts
    - theoretical concepts of Java programming
- overview knowledge of Australian Computer Society Code of Ethics
- sources of browser security restrictions.

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# Evidence Guide

*The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.*

| Overview of assessment | |
|---|---|
| **Critical aspects for assessment and evidence required to demonstrate competency in this unit** | Evidence of the ability to:<br><br>• review the requirements to provide an applet that executes in Java-enabled browsers and allows users to customise the applet's operation<br>• write, compile and run an applet that accepts user input and generates response based on the input. |
| **Context of and specific resources for assessment** | Assessment must ensure access to:<br><br>• Java development environment<br>• Java compiler and interpreter<br>• Java enabled web browser<br>• appropriate learning and assessment support when required<br>• modified equipment for people with special needs. |
| **Method of assessment** | A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:<br><br>• review of candidate's Java applet code<br>• evaluation of candidate's Java applet<br>• verbal or written questioning to assess candidate's knowledge of Java applets. |
| **Guidance information for assessment** | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate.<br><br>Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed.<br><br>Indigenous people and other people from a non-English speaking background may need additional support.<br><br>In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge. |

# Range Statement

*The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.*

| *User* may include: | <ul><li>department within the organisation</li><li>person within a department</li><li>third party.</li></ul> |
| --- | --- |
| *Java compiler* may include: | <ul><li>adaptable layout environment (ALE)</li><li>alma 0.28</li><li>AnyTool</li><li>AutoRad</li><li>Bean scripting framework</li><li>BEanACTION</li><li>Codemesh</li><li>DocWiz: the JavaDoc documentation tool</li><li>Eclipse</li><li>eXtensible pre-processor (EPP) kit</li><li>generating graphical editors (GRACE)</li><li>Java 2 SDK</li><li>Java Runner</li><li>JBuilder 3.5</li><li>JCreator</li><li>jGRASP</li><li>Metamata Development Environment</li><li>Netscape Directory SDK for Java: Source Code</li><li>Utility+</li><li>Visual Age 3.0</li><li>Visual J++</li><li>WingSoft</li><li>Zero G software.</li></ul> |

# Unit Sector(s)

Programming and software development

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