



Australian Government

Department of Education, Employment and Workplace Relations

ICAB5177B Build Java applets

Release: 1

ICAB5177B Build Java applets

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit defines the competency required to compile and run an applet that executes in Java enabled browsers and interacts with users. The following unit is linked and forms an appropriate cluster: • ICAB5161B Build a document using extensible mark up language No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.
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Application of the Unit

Application of the unit	
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

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.
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Elements and Performance Criteria

ELEMENT	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 <code>java.applet.Applet</code> 1.3. Ensure that the Applet sub-class implements at least one of the following methods: <code>init</code> and <code>paint</code> 1.4. Define classes that contain instance variables, methods and local variables 1.5. Ensure that the <code>init</code> method initialises instance variables and constructs any graphical interface used in the Applet sub-class 1.6. Implement the <code>paint</code> and <code>update</code> 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 HTML file and add an <code><APPLET></code> tag 3.2. Write the applet class file to match the HTML document that contains the <code><APPLET></code> 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

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- Writing HTML code
- Keyboarding
- Object-oriented design

Required knowledge

- Browser security restrictions
- Object-oriented programming concepts
- System properties
- Application programming interface (API)
- Australian Computer Society Code of Ethics

Evidence Guide

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 following is essential:

- Assessment must confirm the ability to compile and run an applet that executes in Java-enabled browsers and allows users to customise the applet's operation.
- Evidence will include accepting user input and generating response based on the input. (e.g. in a web-browser 'shopping cart' situation, select multiple items and calculate the total cost of these items).

To demonstrate competency in this unit the person will require access to:

- Java development environment
- Java compiler and interpreter
- Java enabled web browser

Context of and specific resources for assessment

Performance of a broad range of skilled web-based applications, including requirements to evaluate and analyse current methods.

The breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and coordination would be characteristic.

Assessment must ensure:

- The demonstration of competency may also require self-directed application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.

EVIDENCE GUIDE	
	Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams including teams concerned with planning and evaluation functions. Group or team coordination may also be involved.
Method of assessment	The purpose of this unit is to define the standard of performance to be achieved in the workplace. In undertaking training and assessment activities related to this unit, consideration should be given to the implementation of appropriate diversity and accessibility practices in order to accommodate people who may have special needs. Additional guidance on these and related matters is provided in ICA05 Section 1. - Competency in this unit should be assessed using summative assessment to ensure consistency of performance in a range of contexts. This unit can be assessed either in the workplace or in a simulated environment. However, simulated activities must closely reflect the workplace to enable full demonstration of competency. - Assessment will usually include observation of real or simulated work processes and procedures and/or performance in a project context as well as questioning on underpinning knowledge and skills. The questioning of team members, supervisors, subordinates, peers and clients where appropriate may provide valuable input to the assessment process. The interdependence of units for assessment purposes may vary with the particular project or scenario.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: ICAB5161B Build a document using extensible mark-up language An individual demonstrating this competency would be

EVIDENCE GUIDE

	able to: • Demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas • Analyse and plan approaches to technical problems or management requirements • Transfer and apply theoretical concepts and/or technical or creative skills to a range of situations • Evaluate information, using it to forecast for planning or research purposes • Take responsibility for own outputs in relation to broad quantity and quality parameters • Take some responsibility for the achievement of group outcomes • Maintain knowledge of industry products and services Additionally, an individual demonstrating this competency would be able to: • Demonstrate knowledge of Java programming, including theoretical concepts • Apply solutions to Java applet problems • Identify and apply skill and knowledge to Java solutions • Identify and evaluate information from a variety of sources
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Range Statement**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:

- a person within a department
- a department within the organisation

RANGE STATEMENT	
	• a third party
Java compiler may include but is not limited to:	• ALE - adaptable layout environment • alma 0.28 • AnyTool • AutoRad • Bean scripting framework • BEanACTION • Codemesh • DocWiz: The JavaDoc documentation tool • Eclipse • EPP - extensible pre-processor kit • Grace - generating graphical editors • Java 2 SDK • Java Runner • JBuilder 3.5 • Jcreator • Jgrasp • Metamata development environment • Netscape Directory SDK for Java: Source Code • WingSoft • Utility+ • Visual Age 3.0 • Visual J++ • Zero G software

Unit Sector(s)

Unit sector	Build
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Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	
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