



Australian Government

Department of Education, Employment and Workplace Relations

ICAB4178B Build a graphical user interface

Release: 1

ICAB4178B Build a graphical user interface

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit defines the competency required to design, build and test a graphical user interface (GUI) to specification. 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. Determine specification of GUI	1.1.Determine the back-end for interfacing with the GUI 1.2.Determine the functionality of the GUI, including back-end interface 1.3.Determine the application development language for writing the GUI 1.4.Determine type and level of documentation required
2. Design GUI to specification	2.1.Design the GUI incorporating the required functionality and document outcomes
3. Build GUI to specification	3.1.Build the GUI with the required functionality in the determined language, utilising the toolkit's classes/widgets, containers and other pertinent features
4. Test GUI to meet specification	4.1.Test GUI for overall functionality according to requirements 4.2.Iterate GUI design/build until test results meet requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- HTML, DHTML development
- Programming in C++, C, JAVA
- Workstation operation
- Software packages
- Development standards research and interpretation

Required knowledge

- Object-oriented programming concepts
- System properties
- API (application programming interface)
- Copyright and intellectual property
- Relevant Commonwealth and state privacy and information access legislation
- 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 design, build and test a GUI. To demonstrate competency in this unit the person will require access to: - Development environment
Context of and specific resources for assessment	Graphical user interfaces take commands from input devices and expect the underlying operating system to carry out a function. When using this competency in a workplace context, building a GUI should be done with the best available tool for the selected platform (e.g. Linux, UNIX, Windows, Mac). Some of the tools used can build a GUI for all of the above platforms and if this is important, select an IDE capable of compiling for all of the above. A number of GUIs are available under open source licences and it may be appropriate to access source code to assist in design and understanding GUI development process. The breadth, depth and complexity of knowledge and skills in this competency would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance would be involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

EVIDENCE GUIDE

	Assessment must ensure: • Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop new criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills would be characteristic. • Applications may involve responsibility for, and limited organisation of, others. The scope and complexity of knowledge and skills is dependent on the tasks undertaken as part of compiling and running applications.
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

EVIDENCE GUIDE	
	scenario.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. An individual demonstrating this competency would be able to: • Demonstrate understanding of a broad knowledge base incorporating some theoretical concepts • Apply solutions to a defined range of unpredictable problems • Identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas • Identify, analyse and evaluate information from a variety of sources • Take responsibility for own outputs in relation to specified quality standards • Take limited responsibility for the quantity and quality of the output of others • Maintain knowledge of industry products and services Additionally, an individual demonstrating this competency would be able to: • Demonstrate a GUI in concept and compiled form • Use a development tool to assist GUI construction • Meet client specifications • Contribute to code in an open source GUI project • Apply solutions to a variety of predictable problems • Interpret available information and request clarification where needed • Take responsibility for outputs in work and learning

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

RANGE STATEMENT

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.

Documentation may follow:

- ISO/IEC/AS standards
- audit trails
- naming standards
- version control
- project management templates and report writing
- maintaining equipment inventory
- client training
- satisfaction reports

Requirements may be in reference to:

- business
- system
- application
- network
- people in the organisation

Application development language may include:

- Eclipse (open source)
- Visual C++
- Codemesh
- EMACS
- QT and KDevelop
- EPP
- an extensible pre-processor kit
- GTK2
- Java Runner
- Java 2 SDK
- Netscape Directory SDK for Java: Source Code, Borland Enterprise Studio for JAVA
- JBuilder 3.5, Visual Age 3.0
- Visual J++
- Visual Basic

Unit Sector(s)

Unit sector	Build
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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