



Australian Government

Department of Education, Employment and Workplace Relations

ICAICT406A Build a graphical user interface

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to design, build and test a graphical user interface (GUI) to specification.

Application of the Unit

This unit applies to programmers in a variety of fields who are required to develop the system's graphical interface with users.

GUIs take commands from input devices and expect the underlying operating system (OS) to carry out a function.

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
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>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.</i>

Elements and Performance Criteria

1. Determine specification of GUI	1.1 Review GUI requirements 1.2 Review organisational standards for GUI 1.3 Determine the back-end for interfacing with the GUI 1.4 Determine the functionality of the GUI, including back-end interface 1.5 Determine the application development language for writing the GUI 1.6 Determine type and level of documentation required
2. Design GUI to specification	2.1 Design the GUI incorporating the required functionality 2.2 Document design outcomes
3. Build GUI to specification	3.1 Build the GUI with the required functionality in the determined language, using the toolkit's classes or widgets, containers and other pertinent features
4. Test and document GUI to meet specification	4.1 Test GUI for overall functionality according to requirements 4.2 Iterate GUI design or build until test results meet requirements 4.3 Produce technical documentation for the GUI

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with clients
- literacy skills to:
 - produce GUI documentation
 - understand requirements, documents and standards
- problem-solving skills to solve programming problems that may arise
- technical skills to:
 - debug the programming language where appropriate
 - program using the specified programming language
 - use a range of software packages
 - use a workstation
 - use appropriate languages during GUI development.

Required knowledge

- detailed knowledge of:
 - object-oriented programming concepts
 - system properties
- features of application programming interface (API)
- issues relating to copyright and intellectual property
- overview knowledge of Australian Computer Society Code of Ethics
- relevant commonwealth and state privacy and information access legislation.

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: • build a GUI to requirements • demonstrate a GUI in concept and compiled form, using a development tool to assist GUI construction • provide appropriate documentation.
Context of and specific resources for assessment	Assessment must ensure access to: • GUI requirements • organisational standards • development environment. Where applicable, physical resources should include equipment modified 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: • verbal or written questioning to assess candidate's knowledge of programming concepts and system properties • evaluation of GUI completed by candidate • review of documentation produced by candidate for GUI.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. 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. Indigenous people and other people from a non-English speaking background may need additional support. 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.

Requirements may include:	• application • business • network • people in the organisation • system.
Standards may include:	• industry recommendations • organisational standards.
Application development language may include:	• Codemesh • Eclipse (open source) • EMACS • EPP • eXtensible pre-processor kit • GTK2 • Java 2 SDK • Java Runner • JBuilder 3.5, Visual Age 3.0 • Netscape Directory SDK for Java: Source Code, Borland Enterprise Studio for Java • QT and KDevelop • Visual Basic • Visual C++ • Visual J++.
Documentation may include:	• audit trails • client training • International Organization for Standardization (ISO), International Electrotechnical Commission (IEC) and Australian Standards (AS) standards • maintaining equipment inventory • naming standards • project management templates and report writing • satisfaction reports • version control.

Unit Sector(s)

General ICT