Australian Government

Department of Education, Employment and Workplace Relations

ICAPRG505A Build advanced user interface

Release: 1

ISC INDUSTRY SKILLS COUNCILS

Creating Australia's Future

ICAPRG505A Build advanced user interface

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 design, build and test advanced user interface (UI), including interaction techniques, rich controls, improved client-side validation, customisation and personalisation, graphics and multimedia.

Application of the Unit

This unit is relevant to those who work as user interface designers responsible for managing and implementing complex UI design.

This unit focuses on the skills and knowledge needed to implement effective complex user interfaces. It includes, advanced layout and style techniques, interactions, navigations, rich components, client-side validation, graphics, multimedia and templates.

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. Plan UI design	1.1 Determine appropriate ***client technology*** and ***development tools*** and platform for writing the UI 1.2 Review conceptual design with client and edit as required 1.3 Design ***UI layout and structure***
2. Implement interaction techniques	2.1 Apply ***interaction design patterns*** 2.2 Implement ***client-side validation***
3. Implement customised and personalised UI	3.1 Build ***customisable UI*** to allow users to select own custom version of the underlying application 3.2 Build ***personalised UI*** to improve user experience
4. Implement graphics and multimedia	4.1 Create and display graphics 4.2 Add multimedia content to an application

Required Skills and Knowledge

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

Required skills

- analytical skills to define UI structure
- communication skills to review UI design with client
- literacy skills to read and interpret technical documentation
- numeracy skills to make basic calculations for specifying the layout of the UI
- research skills to research and evaluate new interactive technologies
- technical skills to:
    - build basic UI
    - create applications using basic programming techniques
    - create web pages using hypertext markup language (HTML) and cascading style sheet (CSS).

Required knowledge

- basic knowledge of:
    - client-side programming
    - object-oriented programming
    - web design, including HTML, CSS and JavaScript
- detailed knowledge of UI prototyping
- documenting requirements for UI.

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: • apply advanced techniques to create complex user interface, including: • user and custom controls • enhanced client validation • multimedia audio and video • graphics 2-D and 3-D • strategies to enhance user experiences.
Context of and specific resources for assessment	Assessment must ensure access to: • integrated development environment (IDE) • client and server system • multimedia tools • specific tools and licences, depending on particular platform • appropriate learning and assessment support when required • 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: • review of candidate's UI layout and structure • evaluation of candidate's UI: • functions • user validation • multimedia content • customisation and personalisation.
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.

Client technology may include:	• AJAX • Java Server Faces • Java server pages and Struts • .NET ASP • Silverlight framework • Windows Forms • Windows Presentation Foundation.
Development tools may include:	• Borland JBuilder • Eclipse Java IDE • Microsoft Expression • NetBeans Java IDE • Oracle JDeveloper • Visual studio.
UI layout and structure may include:	• grouping by group controls • intuitiveness • size • spacing and positioning by layout controls.
Interaction design patterns may include:	• choices: • options • rating • selectors • data models: • carousel • details view • grid view • list view • panels • tabs • navigation models: • links • menus • trees • search models:

	• auto-complete • help wizard • site map • tag cloud • tips.
Client-side validation may include:	• ASP validation controls • JavaScript client-side validation • jQuery client-side validation • regular expression validation • struts validator framework • xVal validation framework for ASP.NET MVC.
Customisable UI may include:	• custom controls • custom HTML and eXtensible stylesheet language transformations (XSLT) • web parts • Windows Presentation Foundation (Syndicated Client Experiences [SCE]).
Personalised UI may include:	• personalisation providers • personalised styles and themes • user profiles • web parts.

Unit Sector(s)

Programming and software development