



Australian Government

ICTPRG556 Implement and use a model view controller framework

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to use a model view controller (MVC) framework within a development environment that creates and develops dynamic web architecture by convention in any language.

The unit applies to those working as senior software developers, senior back end developers or full stack developers, and responsible for managing Information and Communications Technology (ICT) in small-to-large enterprises (SMEs).

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Programming

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Create MVC project	1.1 Confirm use for MVC framework according to business needs 1.2 Review, evaluate and select Model View Controller (MVC) framework and required Integrated Development Environment (IDE) according to programming language and business needs 1.3 Review, evaluate and select MVC project template and tools 1.4 Create new project using IDE and project template
2. Use MVC framework	2.1 Create and add controllers in project according to business needs 2.2 Create and add dynamic views

	2.3 Connect view to controller 2.4 Send request from client to browser 2.5 Confirm controller receives request and builds MVC model 2.6 Confirm dynamic view is returned 2.7 Develop Controller Model and View for handling HTTP GET, POST, PUT and DELETE requests 2.8 Test and ensure function of requests
3. Finalise MVC project	3.1 Run program according to MVC framework and project requirements 3.2 Test and confirm project function 3.3 Use required debugging tools to inspect request data and model binding in controller handler 3.4 Use debugging tools to inspect HTTP request and response and confirm HTTP redirect functions 3.5 Document and save work according to business procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	- Critically analyses documentation, instructions and data from a variety of sources and records, and consolidates information, in order to determine requirements and steps forwards - Identifies and interprets technical material to determine and confirm job, business and systems requirements
Writing	- Demonstrates sophisticated writing skills using specialised language, technical language and scripts and required conventions - Writes and edits code and technical data in a logical manner using required syntax
Planning and organising	Researches, plans and sequences complex tasks, efficiently and effectively
Problem solving	- Applies systematic and analytical decision- making processes for complex and non-routine situations and bug code - Uses nuanced understanding of context to recognise anomalies and subtle deviations to normal expectations, focusing attention and remedying problems as they arise
Self-management	Monitors progress of plans and schedules, and reviews and changes them, to meet new demands and priorities

SKILL	DESCRIPTION
	Investigates new and innovative ideas, as a means by which to continuously improve, work practices and processes through consultation, formal and analytical thinking
Technology	- Uses complex scripts and tools required within complex systems, applications, operation systems, the internet and required software and hardware components - Uses cyber security procedures and techniques to maintain data security, and systems and application integrity

Unit Mapping Information

No equivalent unit. New unit.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTPRG556 Implement and use a model view controller framework

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- create at least one model view controller (MVC) project and confirm functionality of framework, including:
 - HTTP handlers and routes for GET, POST, PUT and DELETE requests
 - HTML templates, view models and dynamic rendering
 - HTTP request, responses and redirects.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- language used in object-oriented (OO) programming
- HTTP protocol
- functions and features of debugging and testing tools
- principles of model view controller design pattern, conventions and architecture, including:
 - scalability
 - maintainability
 - reusability
- features, structures, logic and modes of interactions between models, controllers and views, including:
 - HTTP Request/Response and redirects
 - HTTP request handlers, routes and parameters
 - Query strings and key/value pairs
 - model binding
 - convention over configuration
 - HTML language, templates and dynamic rendering

- view models and data models.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- model view controller framework
- integrated development environment (IDE) required to implement MVC frameworks
- the internet, including connectivity
- required hardware, software and applications.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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