



**Australian Government**

# **ICTPRG601 Develop advanced mobile multi-touch applications**

**Release: 1**

# ICTPRG601 Develop advanced mobile multi-touch applications

## Modification History

| Release   | Comments                                                                                                     |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 1.0. |

## Application

This unit describes the skills and knowledge required to design, develop, debug, test and deploy applications, for hand-held digital devices using the advanced features of these devices.

It applies to individuals with information and communications technology (ICT) skills who work as mobile device application developers. They may be programmers, game developers, designers and testers, who are working in the area of mobile applications development.

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

## Unit Sector

Programming and software development

## 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. Work effectively on the target platform       | 1.1 Review the requirements<br>1.2 Establish the platform<br>1.3 Install the required development tools, and environment<br>1.4 Use the available debugging tools and techniques<br>1.5 Deploy the completed applications on the target device, and for public download<br>1.6 Test the application using an emulator |
| 2. Develop an application                        | 2.1 Design and code the application, responding to events                                                                                                                                                                                                                                                             |

| ELEMENT                                                 | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| for a multi-touch device                                | 2.2 Design and code the application, responding to taps, touches and gestures<br>2.3 Use a model view controller to design the approach<br>2.4 Develop the application, making effective use of auto-rotation and auto-resizing facilities                                                                                                 |
| 3. Develop the code using features of the mobile device | 3.1 List the available features of the mobile device<br>3.2 Write code requiring web connectivity, and using web services<br>3.3 Write code that communicates with another device, using a communication protocol<br>3.4 Write code using an application programming interface (API) related to at least one other advanced device feature |
| 4. Use available data persistence facilities            | 4.1 Write code, to read and write, to the devices file system<br>4.2 Use synchronisation techniques to synchronise data between the device and external data sources<br>4.3 Write code to make use of available database facilities, on the chosen device                                                                                  |
| 5. Develop applications that are secure and stable      | 5.1 Determine and apply the performance objectives<br>5.2 Ensure memory management, using tools and techniques effectively<br>5.3 Use tools and techniques to evaluate performance<br>5.4 Eliminate zombies, using appropriate tools and techniques                                                                                        |

## Foundation Skills

*This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.*

| Skill   | Performance Criteria    | Description                                                                                                                                                                                                                                            |
|---------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reading | 1.1, 3.3                | <ul style="list-style-type: none"> <li>Identifies, analyses, and interprets complex technical and business protocol material in order to determine business requirements</li> </ul>                                                                    |
| Writing | 3.1, 3.2, 3.3, 3.4, 4.1 | <ul style="list-style-type: none"> <li>Develops complex and technical material, using industry-specific metalanguage that allows users to define their own customised markup languages for displaying documents on the world wide web (WWW)</li> </ul> |

|                            |                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Numeracy                   | 2.2, 3.2                                                                                 | <ul style="list-style-type: none"> <li>Extracts, evaluates and manipulates the mathematical information embedded in a range of tasks and texts</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Navigate the world of work | 3.3                                                                                      | <ul style="list-style-type: none"> <li>Recognises and responds to both, explicit and implicit, protocols within familiar work contexts</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Get the work done          | 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.2, 3.3, 3.4, 4.1, 4.2, 5.1, 5.2, 5.3, 5.4 | <ul style="list-style-type: none"> <li>Demonstrates a sophisticated understanding of the principles, concepts, language and practices associated with the digital world, and uses these to troubleshoot, and understand the uses and potential of new technology</li> <li>Is acutely aware of the importance of understanding, monitoring, and controlling access to digitally stored and transmitted information</li> <li>Uses a mix of intuitive and formal processes to identify key information and issues, evaluate alternative strategies, anticipate consequences, and consider implementation issues, and contingencies</li> <li>When dealing with complex issues, may use intuition to identify common problems in building, and deploying mobile applications, and completing basic program debugging</li> </ul> |

## Unit Mapping Information

| Code and title<br>current version                             | Code and title<br>previous version                             | Comments                                        | Equivalence status |
|---------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------|--------------------|
| ICTPRG601<br>Develop advanced mobile multi-touch applications | ICAPRG601A<br>Develop advanced mobile multi-touch applications | Updated to meet Standards for Training Packages | Equivalent unit    |

## Links

Companion Volume implementation guides are found in VETNet -

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

# Assessment Requirements for ICTPRG601 Develop advanced mobile multi-touch applications

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## Performance Evidence

Evidence of the ability to:

- design applications for small devices that allow multi-touch user input and have advanced mobile features
- build and test these applications
- deploy these applications onto mobile devices.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

## Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- summarise the hardware, and networking, requirements of a multi-touch application
- describe and apply object-oriented programming
- identify and describe user interface designs, and their application
- describe web design methodology and its integration with hand-held devices
- identify and describe typical mobile devices that use multi-touch technologies
- summarise extensible markup language (XML) programming, and web services
- describe techniques for developing software applications.

## Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the programming and software development industry, and include access to:

- hand-held devices and simulators
- an integrated development environment (IDE)

- the internet and web services
- the server system, with sufficient privileges to deploy applications
- specific tools and licences, depending on the particular platform.

Assessors must satisfy NVR/AQTF assessor requirements.

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