ICTGAM507 Develop intermediate 3-D software for games and interactive media

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 1.0.

Application

This unit describes the skills and knowledge required to develop intermediate 3-D software for games or interactive media.

It applies to individuals working as programmers who support the design, development and programming of interactive 3-D media and digital games as part of a larger development team.

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

Unit Sector

Game development

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Build a 3-D application using a provided framework or engine	1.1 Employ integrated development environment facilities to include existing 3-D libraries suitable for games or interactive media production
	1.2 Use existing library facilities and appropriate language, to facilitate the configuration of a 3-D environment compatible with a specified platform
	1.3 Instantiate virtual objects in a simple 3-D environment
	1.4 Create mesh primitives using 3-D library routines
	1.5 Generate code to manipulate 3-D objects, including cameras,

ELEMENT	PERFORMANCE CRITERIA
	lights and mesh primitives
	1.6 Import pre-constructed meshes from persistent storage into a 3-D environment, using scripts or library routines
	1.7 Apply class inheritance to modify or extend existing 3-D class
	1.8 Select and apply, exception handling techniques to ensure program stability in a simple 3-D environment
2. Create a graphical user interface (GUI) for a 3-D environment	2.1 Employ integrated development environment facilities to include existing 3-D compatible graphical user interface (GUI) controls suitable for games, or interactive media production
	2.2 Combine predefined GUI elements to create a simple interface for a 3-D environment
	2.3 Modify scripts or code to customise existing GUI elements
	2.4 Write code that processes events raised by a GUI in a 3-D environment
	2.5 Create GUI events to modify the configuration of a simple 3-D environment
3. Debug a 3-D application	3.1 Use stand-alone debugging tools, or tools provided by an integrated development environment, to examine variables and trace running code
	3.2 Use debugging facilities, such as log windows or files, to detect logical and coding errors
4. Deploy documentation tools	4.1 Investigate and select integrated, or third-party, documentation tools
	4.2 Deploy integrated, or third-party, tools to create and maintain code documentation

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	1.2, 3.1, 3.2	• Interprets and comprehends instructions, briefs, technical and conceptual information, to inform job requirements

Writing	1.2, 1.5, 2.3, 2.4	• Writes and customises precise code using the required language, industry-approved coding techniques, and programming practices
Numeracy	1.5, 2.3	• Uses whole numbers, decimals and percentages when manipulating measurement, scale, ratio, coordinates, colour, shading, and other variables
Get the work done	1.1-1.8, 2.1-2.5, 3.1, 3.2, 4.1, 4.2	• Plans, organises and completes work according to defined requirements, and schedules, taking responsibility for decisions, and sequencing tasks to achieve efficient outcomes • Actively sources, analyses and evaluates applications or tools with the potential to meet development requirements • Understands the purposes, and uses key features, of specific digital systems and tools, and operates them effectively to complete development tasks • Takes responsibility for data integrity and management

Range of Conditions

This section specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Configuration of a 3-D environment must include:	• device selection • game resolution • screen colour depth • output performance, including: • anti-aliasing • level of detail • filtering • caustics and refraction.
Virtual objects must include:	• cameras • lights • viewports.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTGAM507 Develop intermediate 3-D software for games and interactive media	ICAGAM507A Develop intermediate 3-D software for games and interactive media	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2