Australian Government

ICTGAM404 Apply artificial intelligence in game development

Release: 1

ICTGAM404 Apply artificial intelligence in game development

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 research, develop and implement artificial intelligence (AI) solutions in games.

It applies to individuals who contribute to the creation of computer-controlled objects in games, and who support the design, development and programming of basic 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. Conduct research on AI strategies	1.1 Describe the terminology involved in AI, as it relates to games and the game industry 1.2 Identify and analyse the range of AI path-finding strategies, including the appropriate genre and environments, and how they influence design and development 1.3 Discuss AI strategies and ideas, and collaborate as required, with the relevant personnel to ensure the contribution of a range of ideas and creative solutions, and to fulfil the requirements of the brief 1.4 Organise research and findings for use by relevant personnel throughout the development process, updating as required

ELEMENT	PERFORMANCE CRITERIA
2. Design an AI strategy for games	2.1 Generate a range of possible goals and actions, and other factors in the design of an AI non-player character (NPC) 2.2 Select the AI strategies for NPCs for the game design that are technically feasible, respond to the brief, and provide creative solutions to all design issues 2.3 Continuously reflect on, and assess, AI strategies for implications regarding the budget, timeline, technical feasibility, and suitability for the brief
3. Implement an AI strategy	3.1 Implement a path-finding algorithm in a game 3.2 Implement an NPC AI strategy in a game
4. Evaluate the game, based on NPC AI	4.1 Review the game design, and AI strategies, for the fulfilment of the design brief 4.2 Discuss and confirm additional requirements, or modifications, to the game design with the relevant personnel, and undertake any necessary amendments

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, 2.2, 2.3	• Investigates, interprets and comprehends technical documentation, diagrams, icons, symbols, text, numbers and letters when determining AI strategies
Writing	1.1, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2	• Uses clear, concise language, accurate spelling and technical terminology, to organise research findings and to document progress towards goals • Develops AI solutions using the correct code layout, code, diagrams, icons, symbols, text, numbers and letters
Oral Communication	1.1, 1.2, 1.3, 4.1, 4.2	• Uses effective listening and open questioning techniques, together with technical terminology, to elicit the view and opinions of others, and to give and obtain information
Numeracy	1.3, 2.1, 2.2, 2.3,	• Uses whole numbers and decimals to outline parameters

	3.1, 3.2, 4.1, 4.2	• Interprets budgets, and adds, subtracts, multiplies and divides whole numbers and decimals to ensure that the budget, timelines and other brief requirements are met
Get the work done	1.2-1.4, 2.1-2.3, 3.1, 3.2, 4.1, 4.2	• Makes routine decisions and implements standard procedures for routine tasks, using formal decision-making and analytical processes for more complex and non-routine situations • Uses creativity and initiative in design • Uses key features of specific digital systems and tools to complete routine tasks

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTGAM404 Apply artificial intelligence in game development	ICAGAM404A Apply artificial intelligence in game development	Updated to meet Standards for Training Packages. Minor edits to clarify intent of the performance criteria.	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