ICTGAM527 Integrate database with online game

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 integrate a database with an online game, where the relationship between the game server and the database server is also considered a client-server relationship on a local area network.

It applies to individuals with high-level technical and problem solving skills working as programmers, analyst programmers and game programmers responsible for the development of code to connect a computer game to a database.

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. Install application programming interfaces (APIs) suitable to the game's data source provider	1.1 Research the appropriate application programming interfaces (APIs) 1.2 Identify the specific APIs suitable for the game architecture and the data source provider 1.3 Install the nominated APIs on game development computers
2. Define and use a connection to the data source	2.1 Define the game data source connection parameters 2.2 Store the connection parameters in an external text-based configuration file

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ELEMENT	PERFORMANCE CRITERIA
	2.3 Open and close the connection to the game data source
3. Configure and use the connection pooling	3.1 Configure connection pooling in the database management system
	3.2 Define the connection pool parameters for minimum connections, maximum connections, and idle connections
	3.3 Minimise the use of database resources through the use of connection pooling
	3.4 Test and verify the use of connection pooling
4. Pass embedded structured query language (SQL) to the database	4.1 Define the database connection property
	4.2 Compose a structured query language (SQL) statement or command to be passed to the database
	4.3 Test, debug and execute the SQL statement
5. Execute a stored procedure on a database	5.1 Call a stored procedure on the database, using a command callable statement
	5.2 Define and pass the parameters to the stored procedure
	5.3 Test, debug and execute the database stored procedure
6. Modify database data	6.1 Retrieve multi-row multi-column result sets from the database into the game application domain
	6.2 Insert new records into the database
	6.3 Update existing database records
	6.4 Delete existing database records
7. Integrate data from the database with the game application domain	7.1 Integrate data from a forward-only and read-only cursor into the game application domain
	7.2 Incorporate the data from an updateable cursor into the game application domain
8. Test and debug database integration code	8.1 Test the database integration code
	8.2 Document the test results
	8.3 Determine the errors and exceptions, and document the solutions
	8.4 Debug all errors and exceptions
	8.5 Assess all data modifications in the database, and document any errors
	8.6 Correct all causes to data modification errors

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	• Identifies and evaluates documents containing complex technical terminology to identify which APIs are best suited to the game application domain and the game architecture
Writing	2.1, 2.2, 3.2, 4.1, 4.2, 4.3, 5.3, 6.2, 6.3, 8.2, 8.3, 8.5	• Uses the appropriate programming code, syntax and conventions to update, test and de-bug the database integration code • Documents test results and technical solutions, using correct spelling and grammar, plain English, and industry terminology
Get the work done	1.1-1.3, 2.1-2.3, 3.1-3.4, 4.1-4.3, 5.1-5.3, 6.1-6.4, 7.1, 7.2, 8.1-8.6	• Plans, organises and completes work according to project brief and schedules, sequencing tasks to achieve efficient outcomes • Actively sources and analyses reference materials related to database integration • Uses creativity and initiative in database assessment and design • Uses systematic, analytical processes in complex, routine and non-routine situations, gathering information, evaluating options, and identifying solutions to coding problems • Uses key features, of specific digital systems and software effectively to complete defined tasks

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTGAM527 Integrate database with online game	ICAGAM527A Integrate database with online game	Updated to meet Standards for Training Packages	Equivalent unit

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Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e 9d6aff2