Database Systems

Module Information

2022.01, Approved

Summary Information

Module Code	5202COMP
Formal Module Title	Database Systems
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To implement relational database designs using a Relational Database Management System (RDBMS)To employ database connectivity technologies in developing data driven applications.To investigate the administration of a RDBMS.To critically evaluate and implement alternative / non-relational database designs using NoSQL.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Design and implement a relational database to support a given computing problem
MLO2	2	Develop a data driven application using a database
MLO3	3	Critically evaluate the advantages & disadvantages of NoSQL.
MLO4	4	Design and implement an appropriate non-relational database

Module Content

Outline Syllabus	Introducing RDBMSSQL-Components & DDL (for Tables)-DML (for SELECT)-DML (for JOINS & INSERT - UPDATE - DELETE)-Views & Indices (DDL & DML)-SPROCs & Triggers (DDL & DML)Connectivity-Client Server vs Embedded DBs-Connectivity APIsAdministration of RDBMS-Security & Permissions-Replicating Data-Optimizing QueriesNoSQL-Key-Value & Document Store
Module Overview	In this module you will explore the operation of database systems through a scrutiny of modern RDBMS (Relational Data Base Management Systems), the SQL (Structured Query Language) and database connectivity APIs (Application Programming Interfaces). The module continues by exploring some of the managerial considerations of large-scale RDBMS. The module concludes by exploring the operation of emerging NoSQL (Not Only SQL) database systems. Overall, you will design relational databases, develop date driven applications, critically evaluate applications, and design appropriate non-relational databases.
Additional Information	The module begins by exploring the operation of database systems through a scrutiny of modern RDBMS (Relational Database Management Systems), the SQL (Structured Query Language) and database connectivity APIs (Application Programming Interfaces). The module continues by exploring some of the managerial considerations of large-scale RDBMS. The module concludes by exploring the operation of emerging NoSQL (Not Only SQL) database systems. This module thusly represents the logical follow-on to NQF4's Data Modelling module.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Technology	SQL Database Development	60	0	MLO1, MLO2
Report	NoSQL Database Development	40	0	MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Glyn Hughes	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings