Module 2 – Database and Backend Development

Overview

This module focuses on the server-side components of web applications and the management of data using databases. Students will develop a thorough understanding of back-end development, which involves handling logic, data processing, and the integration of databases.

The module begins with an introduction to relational databases, covering concepts like data modelling, normalization, and database design principles. Students will learn how to interact with databases using Structured Query Language (SQL) for creating, reading, updating, and deleting data. They will also explore relational database management systems (RDBMS) such as MySQL.

The module will then explore back-end frameworks and technologies, such as Node.js and PHP. Students will learn how to build server-side applications, handle HTTP requests and responses, implement authentication and authorization mechanisms, and integrate with databases and front-end applications.

By the end of this module, students will have gained the skills and knowledge required to design and develop robust back-end applications, manage and interact with various types of databases and integrate front-end and back-end components into cohesive and efficient web applications.

Module Code	SD-M2
Duration	4 weeks
Prerequisites	SD-M1
Module Content	• Relational databases • Data modelling • Relational Databases Management Systems (RDBMS) • Database applications • Data normalization and design • Structured Query Language (SQL) • PHP: Hypertext Preprocessor • HTTP requests • Node.js • Structured and unstructured data

	• Systems integration
Assessments	• Practical exercises (Formative) • Core Assignment (Summative)
Lecture Time	09:00 – 11:30
Learning Material	• Lecture slides • Readings • Lesson recordings • Source code

*__Disclaimer__: The content of this document is subject to change should the need arise.