LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

# Certificate in Management Information Systems




**LAPT — London Academy of Professional Training**

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**Reference** ITC-C02 • IT Centres


UKPRN 10067351 • Registered in England and Wales, company 4984798

| 4 | 97 | 567 | 400 | 60% | Lifetime |
|---|---|---|---|---|---|
| SUBJECTS | CHAPTERS | CLASSES | TOTAL MARKS | PASS MARK | VALIDITY |

## AT A GLANCE

| | |
|---|---|
| REFERENCE | **ITC-C02** |
| AWARD | **Certificate** |
| ASSESSMENT | **400 marks — 240 to pass (60%)** |
| PREREQUISITES | **None** |
| VALIDITY | **Lifetime** |
| AWARDING BODY | **LAPT — London Academy of Professional Training** |

## CURRICULUM

1

## Management Information Systems

12 chapters · 120 classes **100 marks**

## 1 Information Systems in Modern Organisations — 10 classes

- 1.1 What an Information System Is
- 1.2 Data, Information and Knowledge Explained
- 1.3 People, Process and Technology Components
- 1.4 How Managers Use Information
- 1.5 Levels of Management and Information Needs
- 1.6 Role of the MIS Officer
- 1.7 Common Business Functions and Their Data
- 1.8 Benefits and Limits of MIS
- 1.9 Reading an Organisation Chart for Reporting
- 1.10 Case Study of a Small Business MIS

## 2 Types of Business Information Systems — 10 classes

- 2.1 Transaction Processing Systems
- 2.2 Management Reporting Systems
- 2.3 Decision Support Systems Overview
- 2.4 Executive Information Views
- 2.5 Enterprise Resource Planning Basics
- 2.6 Customer Relationship Systems
- 2.7 Inventory and Supply Systems
- 2.8 Human Resource and Payroll Systems
- 2.9 Accounting and Finance Systems
- 2.10 Choosing the Right System for a Need

## 3 Data Collection and Information Flow — 10 classes

- 3.1 Sources of Business Data
- 3.2 Data Capture Forms and Templates
- 3.3 Data Entry Controls and Checks
- 3.4 Flow of Information Between Departments
- 3.5 Drawing a Simple Data Flow Diagram
- 3.6 Batch and Real-Time Processing
- 3.7 Importing Data from Files
- 3.8 Exporting Data for Sharing
- 3.9 Master Data and Transaction Data
- 3.10 Documenting Data Sources

## 4 Requirements Gathering for Management Reports — 10 classes

- 4.1 Identifying Report Users
- 4.2 Interviewing Managers About Needs
- 4.3 Writing Clear Report Requirements
- 4.4 Defining Measures and Dimensions
- 4.5 Choosing Reporting Frequency
- 4.6 Prioritising Report Requests
- 4.7 Sketching a Report Layout
- 4.8 Agreeing Sign-Off with Users
- 4.9 Maintaining a Report Catalogue
- 4.10 Handling Report Change Requests

## 5 Database Foundations for MIS — 10 classes

- 5.1 Tables, Records and Fields
- 5.2 Keys and Relationships
- 5.3 Designing a Simple Business Database
- 5.4 Entering and Editing Records
- 5.5 Sorting and Filtering Data
- 5.6 Writing Basic Select Queries
- 5.7 Joining Tables in Queries
- 5.8 Grouping and Summarising Data
- 5.9 Saving and Reusing Queries
- 5.10 Backing Up Database Files

## 6 Spreadsheet Based Management Reporting — 10 classes

- 6.1 Structuring Data Sheets for Reporting
- 6.2 Essential Summary Functions
- 6.3 Lookup Functions for Reports
- 6.4 Building Summary Tables
- 6.5 Pivot Style Analysis for Managers
- 6.6 Month End Report Preparation
- 6.7 Variance and Trend Reports
- 6.8 Protecting and Sharing Workbooks
- 6.9 Automating Repeat Reports with Templates
- 6.10 Checking Report Accuracy

## 7 Dashboards and Key Performance Indicators — 10 classes

- 7.1 What a KPI Is
- 7.2 Choosing Meaningful Indicators
- 7.3 Setting Targets and Thresholds
- 7.4 Selecting Charts for Each Measure
- 7.5 Layout Principles for Dashboards
- 7.6 Colour and Alert Signals
- 7.7 Building a Sales Dashboard
- 7.8 Building an Operations Dashboard
- 7.9 Refreshing and Maintaining Dashboards
- 7.10 Presenting a Dashboard to Managers

## 8 Business Process Modelling and Improvement — 10 classes

- 8.1 Identifying Business Processes
- 8.2 Process Mapping Symbols
- 8.3 Mapping a Current Process
- 8.4 Finding Delays and Rework
- 8.5 Designing an Improved Process
- 8.6 Roles and Responsibilities in Processes
- 8.7 Process Documentation Standards
- 8.8 Measuring Process Performance
- 8.9 Introducing Process Changes
- 8.10 Reviewing Benefits After Change

## 9 Data Quality and Stewardship in MIS — 10 classes

- 9.1 Dimensions of Data Quality
- 9.2 Common Data Errors in Business Records
- 9.3 Cleansing Duplicate Records
- 9.4 Validating Data on Entry
- 9.5 Data Ownership and Stewardship Roles
- 9.6 Data Dictionaries and Definitions
- 9.7 Reconciling Reports with Source Records
- 9.8 Logging and Fixing Data Issues
- 9.9 Retention and Archiving of Records
- 9.10 Monthly Data Quality Checks

## 10 Information Security and Access Control in MIS — 10 classes

- 10.1 Confidentiality, Integrity and Availability
- 10.2 Classifying Business Information
- 10.3 User Accounts and Role Based Access
- 10.4 Strong Authentication Practices
- 10.5 Safe Sharing of Reports
- 10.6 Backup and Recovery Routines
- 10.7 Audit Trails and Activity Logs
- 10.8 Privacy of Personal Data
- 10.9 Reporting Security Incidents
- 10.10 Security Checklist for Report Users

## 11 MIS Implementation, Support and Change — 10 classes

- 11.1 Planning an MIS Rollout
- 11.2 Selecting Software with a Scorecard
- 11.3 Data Migration Basics
- 11.4 User Acceptance Testing
- 11.5 Training Users on New Systems
- 11.6 Go Live Support Plans
- 11.7 Service Requests and Help Desk Links
- 11.8 Managing Resistance to Change
- 11.9 Measuring Service Levels
- 11.10 Reviewing and Improving the System

## 12 Capstone MIS Reporting Project — 10 classes

- 12.1 Choosing a Project Business Case
- 12.2 Gathering Requirements for the Project
- 12.3 Designing the Data Structure
- 12.4 Loading and Cleaning Project Data
- 12.5 Building Core Management Reports
- 12.6 Building the Project Dashboard
- 12.7 Securing the Project Files
- 12.8 Testing with Sample Users
- 12.9 Writing the User Guide
- 12.10 Presenting and Reviewing the Project

2 **Data Analysis, Statistics and Visualisation** 24 chapters · 127 classes **100 marks**

- **1 Chapter 1 — Understanding Basic Statistical Concepts** — 4 classes
  - 1.1 Exploring Descriptive Statistics: Mean, Median, and Mode
  - 1.2 Understanding Data Dispersion: Variance and Standard Deviation
  - 1.3 Visualizing Data: Histograms and Box Plots
  - 1.4 Analyzing Relationships: Correlation vs Causation
- **2 Chapter 2 — Descriptive Statistics for Big Data** — 4 classes
  - 2.1 Understanding Key Descriptive Statistics Concepts
  - 2.2 Exploring Measures of Central Tendency
  - 2.3 Analyzing Measures of Dispersion in Big Data
  - 2.4 Applying Descriptive Statistics to Real Big Data Sets
- **3 Chapter 3 — Inferential Statistics in Big Data Analysis** — 4 classes
  - 3.1 Understand the Role of Inferential Statistics in Big Data
  - 3.2 Explore Key Inferential Statistical Methods
  - 3.3 Apply Hypothesis Testing in Data Analysis
  - 3.4 Interpret Statistical Evidence from Big Data
- **1 Understanding the Basics of Data Science** — 5 classes
  - 1.1 Exploring the Role of Data Science
  - 1.2 Identifying Key Data Science Concepts
  - 1.3 Distinguishing Between Structured and Unstructured Data
  - 1.4 Understanding Data Collection and Cleaning
  - 1.5 Applying Basic Statistical Techniques to Data
- **2 Data Acquisition and Management Principles** — 5 classes
  - 2.1 Understanding Data Sources and Types
  - 2.2 Collecting Data: Methods and Techniques
  - 2.3 Exploring Data Collection Tools and Technologies
  - 2.4 Managing Data: Storage and Organization
  - 2.5 Ensuring Data Quality and Integrity
- **3 Introduction to Data Analysis Techniques** — 5 classes
  - 3.1 Understanding Data Types and Structures
  - 3.2 Exploring Statistical Measures for Data Analysis
  - 3.3 Visualizing Data Patterns with Graphs and Charts
  - 3.4 Applying Descriptive Analytics Techniques
  - 3.5 Interpreting Data Insights for Decision Making
- **4 Fundamentals of Data Visualization** — 5 classes
  - 4.1 Understanding Data Visualization Concepts
  - 4.2 Exploring Types of Data Visualizations
  - 4.3 Analyzing Data with Graphical Tools
  - 4.4 Applying Principles of Effective Data Visualization
  - 4.5 Creating Interactive Data Visualizations
- **5 Integration of Generative AI Tools into Workflows** — 5 classes
  - 5.1 Introduction to Generative AI Tools
  - 5.2 Understanding Workflow Automation
  - 5.3 Integrating AI Tools into Existing Processes
  - 5.4 Best Practices for AI Integration
  - 5.5 Evaluating AI Impact on Workflows
- **1 Chapter 1 — Fundamentals of Descriptive Statistics** — 5 classes
  - 1.1 Understanding the Basics of Descriptive Statistics
  - 1.2 Exploring Measures of Central Tendency: Mean, Median, and Mode
  - 1.3 Analyzing Data Spread with Range, Variance, and Standard Deviation
  - 1.4 Visualizing Data: Creating and Interpreting Histograms and Box Plots
  - 1.5 Applying Descriptive Statistics to Real-World Data Sets
- **2 Chapter 2 — Exploring Probability Distributions** — 5 classes
  - 2.1 Understanding Probability Distributions: An Introduction
  - 2.2 Analyzing Uniform Distribution Patterns
  - 2.3 Exploring Normal Distribution Characteristics
  - 2.4 Investigating Binomial Distributions in Practical Scenarios
  - 2.5 Applying Probability Distributions to Real-World Data
- **3 Chapter 3 — Inferential Statistics and Hypothesis Testing** — 5 classes
  - 3.1 Understanding Inferential Statistics: From Sample to Population
  - 3.2 Exploring Sampling Distributions: The Central Limit Theorem
  - 3.3 Formulating Hypotheses: Null and Alternative Hypotheses
  - 3.4 Conducting Hypothesis Tests: P-Values and Significance Levels
  - 3.5 Applying Inferential Techniques: Confidence Intervals in Practice
- **5 Creating and Managing Policies for Generative AI** — 5 classes
  - 5.1 Introduction to Generative AI Policies
  - 5.2 Identifying Ethical Considerations
  - 5.3 Developing Effective Policy Frameworks
  - 5.4 Implementing and Enforcing Policies
  - 5.5 Monitoring and Evaluating Policy Impact
- **1 Chapter 1 — Introduction to Data Analysis Tools** — 5 classes
  - 1.1 Exploring Key Data Analysis Tools
  - 1.2 Understanding Data Analysis Frameworks
  - 1.3 Navigating Data Analysis Software Interfaces
  - 1.4 Comparing Popular Data Analysis Tools
  - 1.5 Selecting the Right Tool for Analysis Tasks
- **2 Chapter 2 — Spreadsheets for Data Manipulation** — 5 classes
  - 2.1 Understanding Spreadsheet Interfaces and Functionality
  - 2.2 Importing and Organizing Data in Spreadsheets
  - 2.3 Applying Basic Formulas and Functions
  - 2.4 Visualizing Data with Charts and Graphs
  - 2.5 Automating Tasks with Macros and Scripts
- **3 Chapter 3 — Statistical Software: R and Python** — 5 classes
  - 3.1 Exploring the Basics of R for Statistical Analysis
  - 3.2 Navigating Python Libraries for Data Manipulation
  - 3.3 Implementing Data Visualization Techniques in R
  - 3.4 Conducting Statistical Tests in Python
  - 3.5 Integrating R and Python for Enhanced Data Insights
- **4 Chapter 4 — Data Visualization Tools: Tableau and Power BI** — 5 classes
  - 4.1 Understanding the Basics of Tableau for Beginners
  - 4.2 Navigating the Power BI Interface
  - 4.3 Creating Simple Visualizations in Tableau
  - 4.4 Building Dynamic Dashboards in Power BI
  - 4.5 Comparing and Selecting Between Tableau and Power BI
- **5 Scripting for Business Intelligence Development** — 5 classes
  - 5.1 Introduction to Scripting Languages
  - 5.2 Data Extraction Techniques
  - 5.3 Automating Data Processing Tasks
  - 5.4 Creating Business Intelligence Reports
  - 5.5 Integrating Scripts with BI Tools
- **1 Understanding Data Structures and Types** — 6 classes
  - 1.1 Identifying Common Data Structures
  - 1.2 Exploring Data Types in Machine Learning
  - 1.3 Comparing Structured and Unstructured Data
  - 1.4 Transforming Data With Python Libraries
  - 1.5 Applying Data Types in Real-world Scenarios
  - 1.6 Evaluating Data Quality for Analysis
- **2 Data Cleaning and Preprocessing Techniques** — 6 classes
  - 2.1 Understanding the Importance of Data Cleaning
  - 2.2 Identifying Common Data Quality Issues
  - 2.3 Techniques for Handling Missing Data
  - 2.4 Implementing Data Normalization and Standardization
  - 2.5 Detecting and Managing Outliers in Data Sets
  - 2.6 Applying Data Transformation and Encoding Techniques
- **3 Exploratory Data Analysis and Visualization** — 6 classes
  - 3.1 Introduction to Exploratory Data Analysis: Key Concepts and Goals
  - 3.2 Understanding and Cleaning the Data: Techniques and Strategies
  - 3.3 Identifying Patterns and Trends: Using Statistical Summaries
  - 3.4 Visualizing Data with Graphs: Choosing the Right Plot
  - 3.5 Exploring Relationships: Correlation and Causation Analysis
  - 3.6 Communicating Insights: Crafting a Data-Driven Story
- **4 Advanced Data Transformation and Feature Engineering** — 6 classes
  - 4.1 Understanding Advanced Data Transformations
  - 4.2 Exploring Techniques for Feature Creation
  - 4.3 Implementing Feature Selection Methods
  - 4.4 Applying Dimensionality Reduction Techniques

3 **Databases, Data Management and Governance** 22 chapters · 122 classes **100 marks**

- **1 Understanding Data Collection Techniques and Tools** — 4 classes
  - 1.1 Exploring Data Collection Methods
  - 1.2 Identifying Data Sources
  - 1.3 Utilizing Data Collection Tools
  - 1.4 Applying Data Collection Techniques
- **2 Data Cleaning and Transformation Processes** — 4 classes
  - 2.1 Understand the Role and Significance of Data Cleaning
  - 2.2 Identify and Handle Missing Data
  - 2.3 Detect and Correct Data Errors and Anomalies
  - 2.4 Apply Data Transformation Techniques for Analysis
- **3 Implementing Data Preprocessing Techniques** — 4 classes
  - 3.1 Understanding Data Cleaning Processes
  - 3.2 Applying Data Transformation Techniques
  - 3.3 Implementing Feature Scaling Methods
  - 3.4 Executing Data Integration and Reduction Strategies
- **1 Understanding Data Quality Concepts and Dimensions** — 6 classes
  - 1.1 Introduction to Data Quality: Defining Key Concepts
  - 1.2 Exploring Data Quality Dimensions: Framework and Importance
  - 1.3 Analyzing Accuracy and Completeness: Core Data Quality Metrics
  - 1.4 Evaluating Consistency and Timeliness: Ensuring Reliable Data
  - 1.5 Assessing Validity and Uniqueness: Overcoming Common Challenges
  - 1.6 Applying Data Quality Principles: Case Studies and Best Practices
- **2 Developing Data Quality Frameworks and Strategies** — 6 classes
  - 2.1 Understanding Data Quality: Key Concepts and Importance
  - 2.2 Identifying Data Quality Dimensions and Indicators
  - 2.3 Designing a Data Quality Framework: Essential Components
  - 2.4 Implementing Data Quality Strategies: Best Practices
  - 2.5 Monitoring and Measuring Data Quality: Tools and Techniques
  - 2.6 Enhancing Data Quality: Continuous Improvement Approaches
- **3 Data Profiling and Cleansing Techniques** — 6 classes
  - 3.1 Understanding Data Profiling Basics
  - 3.2 Identifying Data Patterns and Anomalies
  - 3.3 Exploring Data Cleansing Techniques
  - 3.4 Applying Data Transformation Methods
  - 3.5 Ensuring Data Integrity and Consistency
  - 3.6 Implementing Effective Data Quality Solutions
- **4 Data Quality Metrics and Improvement Plans** — 6 classes
  - 4.1 Understanding Data Quality Metrics: An Overview
  - 4.2 Identifying Key Metrics: Ensuring Data Reliability
  - 4.3 Measuring Data Accuracy: Techniques and Tools
  - 4.4 Evaluating Completeness and Consistency in Data Sets
  - 4.5 Developing Effective Data Quality Improvement Plans
  - 4.6 Implementing and Monitoring Data Quality Interventions
- **5 Leveraging Technology and Tools for Data Quality Management** — 6 classes
  - 5.1 Understanding Data Quality Tools and Technologies
  - 5.2 Exploring Data Profiling Techniques
  - 5.3 Implementing Data Cleansing Processes
  - 5.4 Automating Data Quality Monitoring
  - 5.5 Integrating Data Quality Tools with Business Intelligence Systems
  - 5.6 Evaluating and Selecting Data Quality Solutions
- **1 Fundamentals of Data Modeling** — 6 classes
  - 1.1 Introduction to Data Modeling Concepts
  - 1.2 Types of Data Models Explained
  - 1.3 Understanding Entity-Relationship Diagrams
  - 1.4 Normalization and Denormalization Techniques
  - 1.5 Data Model Design Best Practices
  - 1.6 Tools for Data Modeling
- **2 Creating Data Models for Hospitality** — 6 classes
  - 2.1 Identifying Key Data Elements
  - 2.2 Designing Customer Experience Models
  - 2.3 Building Revenue Management Models
  - 2.4 Integrating Operational Data Sources
  - 2.5 Creating Predictive Analytics Models
  - 2.6 Testing and Refining Hospitality Models
- **3 Data Visualization and Reporting** — 6 classes
  - 3.1 Introduction to Data Visualization Principles
  - 3.2 Choosing the Right Visualization Tools
  - 3.3 Designing Effective Dashboards
  - 3.4 Creating Interactive Reports
  - 3.5 Storytelling with Data
  - 3.6 Evaluating and Iterating on Visualizations
- **4 Model Validation Techniques** — 6 classes
  - 4.1 Importance of Model Validation
  - 4.2 Techniques for Validating Models
  - 4.3 Cross-Validation Methods Explained
  - 4.4 Assessing Model Accuracy and Reliability
  - 4.5 Iterative Model Improvement Strategies
  - 4.6 Tools for Model Validation
- **5 Integrating Models into Business Processes** — 6 classes
  - 5.1 Aligning Models with Business Goals
  - 5.2 Strategies for Effective Integration
  - 5.3 Change Management in Model Integration
  - 5.4 Monitoring Model Performance in Business
  - 5.5 Feedback Loops for Continuous Improvement
  - 5.6 Case Studies on Successful Integrations
- **1 Understanding Data Types and Structures** — 5 classes
  - 1.1 Exploring Primitive Data Types
  - 1.2 Analyzing Composite Data Structures
  - 1.3 Comparing Mutable and Immutable Types
  - 1.4 Classifying Data Structures by Use Case
  - 1.5 Implementing Data Structures in Applications
- **2 Data Storage and Retrieval Techniques** — 5 classes
  - 2.1 Understanding Data Storage Concepts
  - 2.2 Exploring Data Retrieval Methods
  - 2.3 Implementing Basic Data Structures
  - 2.4 Comparing Data Storage Solutions
  - 2.5 Applying Efficient Data Retrieval Techniques
- **3 Data Validation and Integrity Constraints** — 5 classes
  - 3.1 Understanding Data Validation Principles
  - 3.2 Exploring Common Data Integrity Constraints
  - 3.3 Implementing Data Validation Techniques
  - 3.4 Analyzing the Impact of Integrity Constraints on Data
  - 3.5 Applying Data Validation and Integrity in Practice
- **4 Basic Data Analysis and Manipulation** — 5 classes
  - 4.1 Understanding Data Types and Structures
  - 4.2 Extracting and Loading Data for Analysis
  - 4.3 Performing Basic Data Cleaning Techniques
  - 4.4 Summarizing Data with Descriptive Statistics
  - 4.5 Visualizing Data for Insightful Interpretation
- **1 Relational Database Fundamentals** — 6 classes
  - 1.1 Understanding Data Models
  - 1.2 Exploring Primary and Foreign Keys
  - 1.3 Designing Relational Schemas
  - 1.4 Implementing Normalization Techniques
  - 1.5 Executing SQL Queries for Data Retrieval
  - 1.6 Optimizing Relational Database Performance
- **2 Advanced SQL and Query Optimization** — 6 classes
  - 2.1 Understanding Subqueries: Enhancing SQL Queries with Nested Statements
  - 2.2 Exploring Joins: Mastering Complex Data Relationships
  - 2.3 Implementing Indexes: Boosting Query Performance
  - 2.4 Analyzing Execution Plans: Diagnosing and Optimizing Queries
  - 2.5 Utilizing Window Functions: Advanced Data Analysis Techniques
  - 2.6 Refining Queries: Techniques for Reducing Latency and Improving Efficiency
- **3 Database Normalization and Indexing** — 6 classes
  - 3.1 Understanding Database Normalization Principles
  - 3.2 Exploring the Benefits of Normalization
  - 3.3 Identifying Common Normal Forms
  - 3.4 Implementing Normalization Techniques
  - 3.5 Introduction to Database Indexing Concepts
  - 3.6 Applying Indexing for Performance Optimization
- **4 Transactions and Concurrency Control** — 6 classes
  - 4.1 Understanding Database Transactions
  - 4.2 Ensuring Atomicity in Transactions
  - 4.3 Implementing Isolation Levels

4 **Big Data, Business Intelligence and Reporting** 39 chapters · 198 classes **100 marks**

- **1 Understanding the Basics of Big Data** — 4 classes
  - 1.1 Exploring the Fundamentals of Big Data
  - 1.2 Identifying Key Characteristics and Components of Big Data
  - 1.3 Understanding Big Data's Importance and Impact
  - 1.4 Applying Basic Big Data Concepts to Real-World Examples
- **2 Big Data Technologies and Tools** — 4 classes
  - 2.1 Exploring Big Data Frameworks: Hadoop and Spark
  - 2.2 Understanding Data Storage Options: NoSQL and Data Lakes
  - 2.3 Analyzing Data Processing Techniques: Batch vs. Stream Processing
  - 2.4 Applying Big Data Tools: Hands-On with Popular Software
- **3 Applications and Implications of Big Data Analytics** — 4 classes
  - 3.1 Exploring Real-World Applications of Big Data Analytics
  - 3.2 Understanding the Ethical Implications of Big Data
  - 3.3 Examining Privacy Concerns in Big Data Usage
  - 3.4 Evaluating the Impact of Big Data on Decision-Making
- **1 Understanding Big Data Storage Fundamentals** — 4 classes
  - 1.1 Exploring Key Concepts in Big Data Storage
  - 1.2 Identifying Components of Big Data Storage Systems
  - 1.3 Analyzing Data Storage Methodologies
  - 1.4 Applying Big Data Storage Solutions to Real-World Scenarios
- **2 Exploring Distributed File Systems and Databases** — 4 classes
  - 2.1 Understanding the Basics of Distributed File Systems
  - 2.2 Examining Key Characteristics of Distributed Databases
  - 2.3 Comparing Use Cases for File Systems and Databases
  - 2.4 Applying Distributed Storage Concepts to Real-World Scenarios
- **3 Implementing Big Data Storage Solutions in Practice** — 4 classes
  - 3.1 Understanding the Architecture of Big Data Storage
  - 3.2 Exploring Data Storage Technologies and Their Applications
  - 3.3 Configuring Big Data Storage Solutions for Optimal Performance
  - 3.4 Evaluating and Selecting the Right Storage Solution for Big Data Needs
- **1 Understanding Big Data Ecosystems** — 4 classes
  - 1.1 Exploring the Components of Big Data Ecosystems
  - 1.2 Distinguishing Big Data Tools and Technologies
  - 1.3 Analyzing the Architecture of Big Data Platforms
  - 1.4 Applying Big Data Solutions to Real-World Scenarios
- **2 Exploring Big Data Tools and Technologies** — 4 classes
  - 2.1 Discovering Key Big Data Platforms
  - 2.2 Understanding Distributed Computing with Hadoop
  - 2.3 Exploring Cloud-Based Data Solutions
  - 2.4 Analyzing Data with Apache Spark
- **3 Leveraging Cloud Platforms for Big Data Solutions** — 4 classes
  - 3.1 Understanding Cloud Infrastructure for Big Data
  - 3.2 Exploring Key Cloud Service Providers for Big Data
  - 3.3 Integrating Big Data Tools with Cloud Platforms
  - 3.4 Implementing Big Data Solutions in the Cloud
- **1 Chapter 1 — Understanding Data Workflow Principles** — 4 classes
  - 1.1 Exploring the Fundamentals of Data Workflows
  - 1.2 Identifying Components of Effective Data Workflows
  - 1.3 Analyzing Data Flow Patterns and Structures
  - 1.4 Applying Workflow Principles to Real-World Scenarios
- **2 Chapter 2 — Tools and Techniques for Data Workflow Design** — 4 classes
  - 2.1 Exploring Essential Data Workflow Tools
  - 2.2 Understanding Data Transformation Techniques
  - 2.3 Implementing Data Collection Strategies
  - 2.4 Optimising Workflow Efficiency through Automation
- **3 Chapter 3 — Implementing and Optimizing Data Workflows** — 4 classes
  - 3.1 Understanding Data Workflows in Big Data
  - 3.2 Building Efficient Data Pipelines
  - 3.3 Applying Optimization Techniques to Data Workflows
  - 3.4 Evaluating and Iterating Data Workflow Performance
- **1 Chapter 1 — Fundamentals of Data Reporting** — 5 classes
  - 1.1 Understanding the Basics of Data Reporting
  - 1.2 Identifying Key Components of Effective Data Reports
  - 1.3 Exploring Different Formats and Structures for Data Reporting
  - 1.4 Recognizing the Role of Audience in Data Communication
  - 1.5 Crafting Clear and Concise Data Narratives
- **2 Chapter 2 — Designing Effective Data Visualizations** — 5 classes
  - 2.1 Understanding the Principles of Effective Data Visualizations
  - 2.2 Identifying Appropriate Chart Types for Your Data
  - 2.3 Applying Design Best Practices to Enhance Clarity
  - 2.4 Utilizing Color and Fonts to Improve Readability
  - 2.5 Creating Interactive Visualizations for Enhanced Engagement
- **3 Chapter 3 — Storytelling with Data** — 5 classes
  - 3.1 Understanding the Elements of Data Storytelling
  - 3.2 Crafting Narratives for Data Insights
  - 3.3 Visualizing Data to Support Your Story
  - 3.4 Engaging Your Audience with Compelling Data Narratives
  - 3.5 Applying Storytelling Techniques to Real Data Scenarios
- **4 Chapter 4 — Tools and Technologies for Data Communication** — 5 classes
  - 4.1 Data Visualization Tools Overview
  - 4.2 Effective Data Storytelling Techniques
  - 4.3 Interactive Dashboards and Reports
  - 4.4 Data Communication Best Practices
  - 4.5 Using Infographics for Data Presentation
- **1 Understanding the Fundamentals of Strategic Business Intelligence** — 6 classes
  - 1.1 Defining Strategic Business Intelligence
  - 1.2 Exploring the Key Components of Business Intelligence
  - 1.3 Analyzing the Role of Data in Strategic Decision Making
  - 1.4 Identifying Business Intelligence Tools and Technologies
  - 1.5 Examining Case Studies in Successful Business Intelligence
  - 1.6 Applying Strategic Insights to Business Scenarios
- **2 Data Collection and Integration for Business Intelligence** — 6 classes
  - 2.1 Understanding Data Sources in Business Intelligence
  - 2.2 Exploring Data Collection Techniques
  - 2.3 Analyzing Challenges in Data Integration
  - 2.4 Implementing Data Integration Strategies
  - 2.5 Assessing Data Quality for Business Insights
  - 2.6 Leveraging Integrated Data for Strategic Decision Making
- **3 Advanced Data Analytics and Visualization Techniques** — 6 classes
  - 3.1 Understanding the Role of Advanced Analytics in Business Intelligence
  - 3.2 Exploring Key Data Visualization Techniques
  - 3.3 Leveraging Predictive Analytics for Strategic Decision Making
  - 3.4 Implementing Data Visualization Tools and Software
  - 3.5 Analyzing Complex Data Sets Using Machine Learning Algorithms
  - 3.6 Integrating Visualization Techniques into Business Intelligence Reports
- **4 Strategic Implementation of Business Intelligence Systems** — 6 classes
  - 4.1 Understanding the Core Components of BI Systems
  - 4.2 Identifying Business Needs and BI Solutions
  - 4.3 Designing a Strategic BI Implementation Plan
  - 4.4 Mapping Data Sources for Business Intelligence Integration
  - 4.5 Implementing Data Governance Frameworks
  - 4.6 Monitoring and Evaluating BI System Performance
- **5 Governance and Ethical Considerations in Business Intelligence** — 6 classes
  - 5.1 Exploring Data Governance Principles
  - 5.2 Understanding Ethical Considerations in Business Intelligence
  - 5.3 Assessing Legal and Compliance Issues in Data Management
  - 5.4 Analyzing the Impact of Bias in Business Intelligence
  - 5.5 Implementing Data Governance Frameworks Effectively
  - 5.6 Evaluating Case Studies on Ethical Data Usage
- **1 Introduction to Cloud Databases** — 6 classes

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