Introduction

The **Data Management, Security, and Warehousing** course is tailored for professionals and organizations that aim to harness the full potential of **Big Data**. As companies increasingly rely on **Data Analytics** and **Data Science** to make informed decisions and innovate, this course provides essential insights into effectively managing, securing, and warehousing data. The rise of Big Data has brought about a new era, often referred to as **Industrial Revolution 4.0**, where the ability to process and secure vast amounts of data is critical to success.

This course delves into **data management**, which is the administrative process involving the acquisition, validation, storage, protection, and processing of data to ensure its accessibility, reliability, and timeliness. It focuses on the best practices for **data warehousing** and securing data in today's data-driven landscape.

Targeted Groups

This course is ideal for professionals involved in data-related roles, including:

- **Systems Analysts**
- **Programmers**
- **Data Analysts**
- **Database Administrators**
- **Project Leaders**
- **Software Engineers**
- **Managers**
- Any professional involved in **Data Analytics**

Course Objectives

By the end of this course, participants will be able to:

- Plan and execute steps in a **data warehousing project**.
- Understand the growing need for **strategic information** and its significance in the modern business environment.
- Grasp the fundamental challenges in **data management** and **data warehousing**.
- Learn effective strategies for **data security** in data warehousing.
- Understand how to handle and secure data in the **Big Data** era.

Targeted Competencies

Upon completing the course, participants will have competencies in:

- Differentiating between **Operational** and **Decision Support Systems**.
- Extracting **Strategic Information** from data warehouses.
- Addressing the challenges of **Data Management** in the Big Data era.
- Applying **Data Security** strategies for next-generation data warehouses.

- Mastering the **Extract-Transform-Load (ETL)** process.

Course Content

Unit 1: Agile Enterprise Data Warehousing

- Introduction to **Agile Methodologies**: **Agile Manifesto**, **Scrum Method**, and **Extreme Programming Approach**.
- **Lean Software Development** and its application in data warehousing.
- Overview of **Data Warehousing Standards**.

Unit 2: Data Security Strategies

- Determining the **trustworthiness** of data.
- Understanding **ISO/IEC 17728** and **GDPR** regulations.
- **Protecting the Data Warehouse** and managing the **Data Lifecycle**.

Unit 3: Data Warehouse: The Building Blocks

- Key **Data Defining Features** and understanding **Data Warehouses** and **Data Marts**.
- Overview of **Data Warehouse Components**.
- **Dimensional Analysis of Data** and how requirements drive data warehousing decisions.

Unit 4: Data Warehouse: Architecture and Infrastructure Requirements

- The role of **Hardware** and **Operating Systems** in data warehousing.
- Choosing **Database Software** and automating warehousing tasks.
- Understanding the **Business Conceptual Model**, **Logical Data Model**, and **Physical Data Model** for data warehousing architecture.

Unit 5: Data Management, Security, and Warehousing Implementation

- The process of **Data Extraction**, **Transformation**, and **Loading (ETL)**.
- **Data Design** and **Dimensional Modeling**.
- Addressing **Data Quality** issues and aligning information with user needs.
- The role of **On-Line Analytical Processing (OLAP)**.
- **Big Data Processing** in **Cloud Environments**.

Conclusion

Upon completion of the **Data Management, Security, and Warehousing** course, participants will gain a solid understanding of **data management**, **data warehousing**, and **data security** practices. The course equips learners with the skills to efficiently manage, secure, and warehouse data in today’s complex Big Data ecosystem.

Participants will earn a **data management certificate**, validating their expertise in managing data and implementing effective security strategies. This course is an essential training for professionals seeking to advance their skills in data management and warehousing, ensuring they are prepared

to handle the challenges of modern data environments while prioritizing security.