

Introduction:

The **Data Management, Security, and Warehousing** course is designed for professionals and organizations aiming to harness the full potential of **Big Data**. With businesses increasingly relying on data analytics and data science to innovate, reduce costs, and enhance service delivery, effective data management has become crucial.

In the age of **Big Data**, simply having access to data is no longer enough. Proper **data management** is an administrative process that involves acquiring, validating, storing, protecting, and processing data to ensure its accessibility, reliability, and timeliness for decision-makers. This course will guide participants in understanding the fundamentals of data management, security, and warehousing, and how to implement the right data strategies in the **Big Data era**.

The course covers essential data warehousing and security solutions, which have become indispensable as organizations look for secure and effective ways to store, retrieve, and manage massive volumes of data. Choosing the right approach for managing data warehousing and ensuring data security are some of the most critical challenges businesses face today.

Targeted Groups:

- Systems Analysts
- Programmers
- Data Analysts
- Database Administrators
- Project Leaders
- Software Engineers
- Managers
- Professionals involved in Data Analytics

Course Objectives:

By the end of this course, participants will:

- Understand how to plan and execute steps in a data warehousing project.

- Recognize the growing need for strategic information and data management.
- Address key issues in data management and warehousing.
- Learn and implement data security strategies suitable for next-generation data warehousing.
- Gain the knowledge to effectively manage data in the Big Data era.

Targeted Competencies:

Upon completion of this course, participants will be proficient in:

- Understanding the difference between **Operational Systems** and **Decision Support Systems**.
- Extracting **Strategic Information** from a data warehouse.
- Recognizing the significance of **Data Management** in the Big Data era.
- Implementing **Data Security Strategies** for next-gen data warehouses.
- Mastering the **Extract-Transform-Load (ETL)** process.

Course Content:

Unit 1: Agile Enterprise Data Warehousing

- Understanding the **Agile Manifesto** and its relevance in data warehousing.
- Exploring **Scrum Method** and **Extreme Programming** approaches for data management.
- The importance of **Lean Software Development** for efficient data warehousing.
- Identifying key **sources for data warehousing standards**.

Unit 2: Data Security Strategies

- Determining how to trust your data with **data integrity and validation**.
- Learning about **ISO Standard 17728** and its application to data security.
- Understanding the **EU General Data Protection Regulation (GDPR)**.

- Implementing **data protection** practices to secure the data warehouse.
- Analyzing the **lifecycle of a dataset** to ensure continuous security.

Unit 3: Data Warehouse: The Building Blocks

- Defining essential features of data in a warehouse.
- Understanding the distinction between **data warehouses** and **data marts**.
- An overview of **data warehouse components** and their roles.
- Applying **dimensional analysis** to structure and organize data efficiently.
- Understanding how **requirements** drive the design and development of a data warehouse.

Unit 4: Data Warehouse Architecture and Infrastructure Requirements

- Understanding the hardware and operating systems requirements for data warehousing.
- Choosing appropriate **database software** for data warehousing.
- Automating routine warehousing tasks for efficiency.
- The role of **business conceptual models**, **logical data models**, and **physical data models** in data warehousing architecture.

Unit 5: Data Management, Security, and Warehousing Implementation

- The **ETL process**: Extracting, transforming, and loading data effectively.
- The role of **data design** and **dimensional modeling** in structuring data.
- Ensuring **data quality** by evaluating and matching data to user needs.
- Implementing **Online Analytical Processing (OLAP)** for complex data analysis.
- Managing **Big Data** in **cloud environments**, leveraging scalability and flexibility for modern businesses.

Conclusion:

In the **Data Management, Security, and Warehousing** course, participants gain a profound understanding of data management practices, security protocols, and how to implement effective data warehousing strategies. By mastering these skills, participants will be equipped to handle the complexities of modern data ecosystems, ensuring that they can protect and manage data effectively while meeting organizational needs.

Graduates of this course will receive a **Data Management Certificate**, validating their expertise in managing, securing, and warehousing data in the Big Data era. Whether seeking a career in **data management** or pursuing **certification**, this course empowers professionals with the tools and knowledge to excel in their roles and contribute to the growth and success of their organizations.