Course : Building a data warehouse

data quality and BI IS performance

Synthesis course - 3d - 21h00 - Ref. DAW
Price : 2790 CHF E.T.

★★★★⯪   4,1 / 5

Thanks to a structured and pragmatic approach, you will learn how to model a data warehouse based on business needs, feed it and make it reliable and scalable. You will also discover the impact of this modeling on IS architecture and the quality of the enterprise data repository. A practical course that will also give you a first approach to data modeling "en étoile".

◎ Teaching objectives

At the end of the training, the participant will be able to:

- ✓ Understand the strategic stakes and benefits of a BI system
- ✓ Identify the different organizational layers of a decision-making system
- ✓ Modeling a data warehouse at the heart of a business intelligence system
- ✓ Identify the essential steps in building a data warehouse
- ✓ Mastering the roles and deliverables of a data warehouse construction project
- ✓ Gain a comprehensive overview of business intelligence solutions on the market

Intended audience

Data center managers, IT managers, design managers, information systems architects, functional and technical project managers.

Prerequisites

Good knowledge of database management. Basic knowledge of decision analysis.

Course schedule

1. The data warehouse, purpose and principles

- The strategic challenges of a business intelligence system.
- The technical and cultural reasons behind the data warehouse.
- Bill Inmon's definition of a data warehouse.
- Solutions provided by the data warehouse's technical and functional architecture.
- Characteristics of BI system data.
- The Infocenter and decision-support systems.
- Presentation of the different data warehouse and Infocentre approaches, their advantages and disadvantages.

2. The architecture of an enterprise BI system

- The different layers of data warehouse (DW) organization.
- Data collection and integration.
- Operational Data Store and Data Staging area.
- The presentation layer, the decision-making portal.
- Analysis engines Online Analytical Processing (OLAP): (MOLAP) and/or relational OLAP (ROLAP).
- Analysis techniques "data mining": predictive methods, descriptive methods.
- Growth in the volume and nature of data, the challenges of Big Data.
- Documenting DW data: data repository concepts.
- How does DW make data repository management (MDM) more reliable?
- Flow management: source data capture, transformation rules.

Example
Presentation of examples of various decision analysis projects.

3. Data warehouse modeling principles

- Operational and denormalized relational models.
- Hybrid models.
- Generic models.
- Understand the star model and its purpose.
- Understanding the concepts of facts and analysis. Analysis axis hierarchies.
- The flake model.
- The problem of evolving dimensions.
- Management of aggregates and functional perimeter stability.
- Which approach favors details or aggregates? Best practices, questions to ask the business.

Group discussion
Collective construction and enrichment of a star-shaped data model, based on several case studies. Development of the questioning to be proposed to gather the user's needs.

4   The data warehouse construction process

- Identify candidate functional scope. Determine the objective and the management events to be monitored.
- Estimate the volume of the perimeter.
- Functional analysis, collection of user requirements.
- Detailed technical architecture design.
- Establish a generic implementation approach.
- The benefits of an iterative approach, the content of an iteration.
- Choosing the right first iteration or pilot project. Role of sponsor, project owner, project manager, impact on the organization.
- Administration and monitoring of the operational solution.

Storyboarding workshops
Presentation of the data warehouse functional scope design process.

5   Project organization, players and deliverables

- The fundamental role of the sponsor or promoter.
- The steering committee.
- The role of the functional team, the user project group: validate the design of the user environment.
- Skills transfer to end users by the functional team: training and documentation.
- The technical team, the architects.
- The main deliverables of a BI project.

Storyboarding workshops
Presentation of deliverables and who is responsible for them at each stage of the process.

6   Business intelligence tools

- The latest technical developments in RDBMS for business intelligence.
- Overview and typology of BI solutions on the market. SaaS offers.
- Reporting solutions: SSRS, IBM Cognos, SAS, BusinessObjects... Implementation of query tools.
- Server-side and client-side OLAP analysis tools: use, scalability, DataMart approach, response times.
- Data mining analysis solutions: SAS Enterprise Miner, IBM, OBI data mining. Requirements and strengths.
- Extract-transform-load (ETL) solutions: IBM, Informatica, Oracle, SAP, Talend...
- Relational modeling tools: possibilities and limits.

Example
An overview of the possibilities offered by various business intelligence (BI) tools.

7   Summary

- Trends in decision-making systems.
- Best practices for modeling.
- Recommendations for data warehouse project organization.

Dates and locations

REMOTE CLASS

2026 : 2 June, 15 Sep., 24 Nov.