# Developing A Modern Business Intelligence System Training

Duration: **4 Day**

BILGINC IT Academy
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Business Intelligence (BI) systems are the heart of any company's analytical capability. This course introduces the delegate to all the necessary terminology, architectures, approaches, skills, techniques, and infrastructure necessary to design and implement a successful BI system. The course focuses on the generic skills that are necessary to create an effective BI system and will teach you the skills that underpin good BI development no matter which software platform you use.

A BI system has the potential to revolutionise your business. It can turn the mass of data that sits in your operational systems (Finance, HR, Sales etc.) into high quality, well-defined information. This information allows you to move from a 'gut-feel' approach of decision making to a proper, evidence-based approach. A well-designed BI system collects the appropriate data from your operational systems and move it into a data warehouse. There it is restructured and organised for analytical purposes and often deployed to data marts. The approach, methodology and design techniques required to build a BI system differ significantly from those required to build operational systems and include ETL (Extract, Transform and Load), dimensional modelling and OLAP (On-Line Analytical Processing).

**Target Audience**

This course is made up of a mix of theory and vendor-neutral practicals that allow delegates to apply the principles they have learnt. It is ideal for developers, software engineers, database administrators, data analysts, system analysts or application designers who will be involved in designing, building or maintaining a BI system. Please note delegates who have previously attended CSWARDE2 - Effective Data Warehouse Construction should not attend this course.

## Prerequisites

Basic understanding of IT and how business systems use IT; this would be gained by at least a year's experience in IT or business systems development.
Some exposure to Relational Databases and Database Modelling. Database modelling skills can be acquired on QA's Database Analysis and Design course.
Systems/Application programming experience would also be an advantage.

**Please note:**

Delegates who have previously attended:

'CSWARDE2 - Effective Data Warehouse Construction'

and/or

'QADM - Dimension Modelling'

- Should not attend this course due to duplication of content.

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## What You Will Learn

At the end of this course you will be able to:

- Make a business case, assemble a project team, and lay the infrastructure necessary for the BI system construction to begin
- Design, implement, utilise, maintain, and administer the BI system
- Understand dimensional modelling
- Talk to users and create a logical model from their analytical requirements
- Turn those logical models into a star schema
- Extract data from one or more operational systems
- Transform, condition, and cleanse the data
- Load the data into the data warehouse using a variety of mechanisms
- Query, drill-down, and report the data
- Understand the role of technologies such as OLAP and data mining
- Assess your organisation's readiness to embark on a BI project

## Training Outline

**Introduction**

Data overview, Historical background; What is a BI System and why do we need it? OLTP versus OLAP; Benefits to the business; Benefits to IT; Reasons for failure; The processes of building and running BI systems

BI Architectures

Centralised Data Warehouse; Independent or Federated Data Marts; Hybrid approach; Standards

**The Project**

Top down vs. bottom up development; Ownership & funding; Methodology; Scoping and requirements gathering

**Requirement Analysis**

Review of modelling terminology and techniques; How a Warehouse is different; Logical and physical modelling; 3NF vs. denormalisation, Questions to ask in determining requirements; Sun modelling

**Dimensional Modelling Basics**

The dimensional model; The fact table; The dimension tables; Modelling Attributes in the Dimensions; Steps in design

**Dimensional Modelling Further Considerations**

Conformed Dimensions; Synonym Dimensions; Mini Dimensions; Snowflaking; Slowly changing dimension types 0-4; Junk dimensions; Degenerate dimensions; Aggregations; The importance of Surrogate Keys

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**Data Extraction**

Extraction method; The meaning of the data, The Data Quality Assessment Process

**Data Transformation**

The case for data quality; Transformation; Cleansing; Conditioning; Specific data type issues; Transformation methods

**Data Loading**

How to identify what has changed; Snapshot vs. detail data; Full Refresh vs. Delta Capture; Load methodology; Load techniques

**Querying the Data**

Canned queries; Report writers; ROLAP and OLAP tools; Data visualisation; Drilldown analysis; End user training; Performance

**Data Mining and Exploration**

Data mining methodology; Data mining algorithms; Interpreting the output; Formulating a strategy

**Operating and Maintaining the System**

Processes and procedures; Change control; User and privilege administration; Service level agreements; Archive and recovery