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# IBM Cognos Framework Manager: Design Metadata Models (v11.0)

## Information

<b>Length:</b>	40.0 Hours
<b>__Ref:</b>	B6052G □
<b>Delivery method:</b>	Classroom
<b>Price:</b>	AUD

## Overview

This course provides participants with introductory to advanced knowledge of metadata modeling concepts, and how to model metadata for predictable reporting and analysis results using Framework Manager. Participants will learn the full scope of the metadata modeling process, from initial project creation, to publishing of metadata to the Web, enabling end users to easily author reports and analyze data.

## Public

Developers who design metadata models for use in IBM Cognos Analytics.

## Prerequisites

- Knowledge of common industry-standard data structures and design.
- Experience with SQL
- Experience gathering requirements and analyzing data.
- IBM Cognos Analytics: Author Reports Fundamentals (recommended)

## Objective

Please refer to course overview

## Topics

1. Introduction to IBM Cognos Analytics
  - Describe IBM Cognos Analytics and its position within an analytics solution
  - Describe IBM Cognos Analytics components
  - Describe IBM Cognos Analytics at a high level
  - Explain how to extend IBM Cognos
2. Identifying common data structures
  - Define the role of a metadata model in Cognos Analytics
  - Distinguish the characteristics of common data structures
  - Understand the relative merits of each model type
  - Examine relationships and cardinality

- Identify different data traps
  - Identify data access strategies
3. Defining requirements
- Examine key modeling recommendations
  - Define reporting requirements
  - Explore data sources to identify data access strategies
  - Identify the advantages of modeling metadata as a star schema
  - Model in layers
4. Creating a baseline project
- Follow the IBM Cognos and Framework Manager workflow processes
  - Define a project and its structure
  - Describe the Framework Manager environment
  - Create a baseline project
  - Enhance the model with additional metadata
5. Preparing reusable metadata
- Verify relationships and query item properties
  - Create efficient filters by configuring prompt properties
6. Modeling for predictable results: Identifying reporting Issues
- Describe multi-fact queries and when full outer joins are appropriate
  - Describe how IBM Cognos uses cardinality
  - Identify reporting traps
  - Use tools to analyze the model
- 7: Modeling for predictable results: Virtual star schemas
- Understand the benefits of using model query subjects
  - Use aliases to avoid ambiguous joins
  - Merge query subjects to create as view behavior
  - Resolve a recursive relationship
  - Create a complex relationship expression
8. Modeling for predictable results: consolidate metadata
- Create virtual dimensions to resolve fact-to-fact joins
  - Create a consolidated modeling layer for presentation purposes
  - Consolidate snowflake dimensions with model query subjects
  - Simplify facts by hiding unnecessary codes
9. Creating calculations and filters
- Use calculations to create commonly-needed query items for authors
  - Use static filters to reduce the data returned
  - Use macros and parameters in calculations and filters to dynamically control the data returned
10. Implementing a time dimension
- Make time-based queries simple to author by implementing a time dimension
  - Resolve confusion caused by multiple relationships between a time dimension and another table

## 11. Specifying determinants

- Use determinants to specify multiple levels of granularity and prevent double-counting

## 12. Creating the presentation view

- Identify the dimensions associated with a fact table
- Identify conformed vs. non-conformed dimensions
- Create star schema groupings to provide authors with logical groupings of query subjects
- Rapidly create a model using the Model Design Accelerator
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## 13. Working with different query subject types

- Identify the effects of modifying query subjects on generated SQL
- Specify two types of stored procedure query subjects
- Use prompt values to accept user input

## 14. Setting Security in Framework Manager

- Examine the IBM Cognos security environment
- Restrict access to packages
- Create and apply security filters
- Restrict access to objects in the model

## 15. Creating Analysis objects

- Apply dimensional information to relational metadata to enable OLAP-style queries
- Sort members for presentation and predictability
- Define members and member unique names
- Identify changes that impact a MUN

## 16. Managing OLAP Data Sources

- Connect to an OLAP data source (cube) in a Framework Manager project
- Publish an OLAP model
- Publish a model with multiple OLAP data sources
- Publish a model with an OLAP data source and a relational data source

## 17. Advanced generated SQL concepts and complex queries

- Governors that affect SQL generation
- Stitch query SQL
- Conformed and non-conformed dimensions in generated SQL
- Multi-fact/multi-grain stitch query SQL
- Variances in IBM Cognos Analytics - Reporting generated SQL
- Dimensionally modeled relational SQL generation
- Cross join SQL
- Various results sets for multi-fact queries

## 18. Using advanced parameterization techniques in Framework Manager

- Identify environment and model session parameters
- Leverage session, model, and custom parameters
- Create prompt macros

- Leverage macro functions associated with security
19. Model maintenance and extensibility
- Perform basic maintenance and management on a model
  - Remap metadata to another source
  - Import and link a second data source
  - Run scripts to automate or update a model
  - Create a model report
20. Optimizing and tuning Framework Manager models
- Identify how minimized SQL affects model performance
  - Use governors to set limits on query execution
  - Identify the impact of rollup processing on aggregation
  - Apply design mode filters
  - Limit the number of data source connections
  - Use the quality of service indicator
21. Working in a Multi-Modeler Environment
- Segment and link a project
  - Branch a project and merge results
22. Managing packages in Framework Manager
- Specify package languages and function sets
  - Control model versioning
  - Nest packages
- Appendix A. Additional modeling techniques
- Leverage a user defined function
  - Identify the purpose of query sets
  - Use source control to manage Framework Manager files
- Appendix B. Modeling multilingual metadata
- Customize metadata for a multilingual audience