Developing Data Models with LookML

Course Duration: 40 Hours **Course code: DDML**

1. Course Overview

This course focuses on building robust, scalable, and governed data models using LookML in Google Cloud Looker. It enables learners to transform raw data into meaningful business insights by creating reusable semantic layers. The course emphasizes best practices in modeling, performance optimization, version control, and enterprise-grade BI development.

2. What you'll learn?

By the end of the course, you will be able to:

- Understand Looker architecture and LookML development lifecycle
- Build semantic data models using LookML
- Define dimensions, measures, and relationships effectively
- Create scalable and reusable data models
- Optimize query performance and reduce costs
- Implement data governance and access control
- Use Git for version control in LookML projects
- Develop dashboards and analytics using LookML models

3. Target Audience

- Data Analysts and BI Developers
- Analytics Engineers
- Data Engineers
- SQL Developers
- Professionals working with Looker or BI tools

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4. Pre-Requisites

Before taking this course, you should have:

- Strong understanding of SQL
- Basic knowledge of data modeling concepts
- Familiarity with relational databases
- Basic understanding of Google Cloud (preferred)

5. Course content

Module 1: Course Introduction

- Course objectives and structure
- Introduction to Looker and LookML
- Role of semantic modeling in BI

Module 2: Looker Platform and Architecture

- Overview of Looker platform
- LookML project structure
- Development vs production environments
- Git-based workflow in Looker

Module 3: LookML Basics

- Introduction to LookML syntax
- Understanding views, models, and explores
- File structure and organization
- Writing basic LookML code

Module 4: Creating Views in LookML

- Defining dimensions and dimension groups
- Creating measures and aggregations
- SQL snippets in LookML
- Best practices for view design

Module 5: Building Explores and Joins

- Creating explores
- Joining multiple views
- Join types and relationships
- Controlling join behavior

Module 6: Advanced Data Modeling Techniques

- Derived tables (SQL-based modeling)
- Persistent Derived Tables (PDTs)
- Native Derived Tables (NDTs)
- Handling complex schemas

Module 7: Reusable and Scalable Models

- Extending views and explores
- Using includes and refinements
- Modular LookML design
- Reusability strategies

Module 8: Performance Optimization

- Query optimization strategies
- Aggregate awareness
- Caching mechanisms
- Reducing query cost and latency

Module 9: Data Governance and Security

- User attributes and access filters
- Row-level and column-level security
- Role-based access control
- Data governance best practices

Module 10: Testing and Debugging LookML

- Validating LookML code
- Debugging errors
- Testing data accuracy
- Using Looker IDE tools

Module 11: Version Control with Git

- Git integration in Looker
- Branching and merging strategies
- Managing development workflows
- Collaboration best practices

Module 12: Building Dashboards and Reports

- Creating Looks and dashboards
- Using LookML models for visualization
- Designing effective dashboards
- Sharing and collaboration

Module 14: Deployment and Maintenance

- Deploying LookML projects to production
- Monitoring performance
- Maintaining data models
- Handling updates and changes

Module 15: Real-World Use Cases and Capstone Project

- Business intelligence scenarios
- End-to-end LookML data modeling project
- Best practices and design patterns

- Final evaluation

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