Data Architecture & Platforms (DWA-200) Agenda

Prepared for Data & Analytics Training

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1 Introduction

Data architecture is a fundamental, essential activity for every organisation aiming for successful data management. Many organisations neglect data architecture and platforms which hinders the effective use of your data and information.

Data architecture compromises various things including models and business rules or standards that govern what data is collected, and how it is stored, arranged, integrated, and used in organisations. As part of an enterprise or solution architecture, data forms one of the main pillars.

This one-day workshop builds upon our Data Platforms (DW-100) course by looking at data lakes and data warehouses exploring greater detail for each component of the architecture. The course additionally discusses methodology, people, and tools.

1.1 Learning Outcomes

At the end of this course delegates should be able to:

- Understand:
    - The differences between data lakes, data warehouses and other options
    - How to choose between different technologies & approaches
    - The detail of each component or layer in the chosen architecture
    - How to approach building a reliable, effective, and maintainable data platform
- Have high level knowledge of some common tools and their pros and cons
- Recognise common mistakes

2 Example course agenda

#	Topic
1.	**Background Concepts** • Data Platforms recap (Data Ecosystem, Types of Reporting, Data Architecture & Platform definition, Rationale) • Generic Architecture recap (Sources, Extraction, Integration & Transformation, Presentation Layer, Analytics & Reporting, Metadata)
2.	**Typical Patterns** • Data Warehouses • Data Lakes • In memory and virtual options
3.	**Sources & Extraction** • Typical data sources, pros, cons, challenges, and recommendations • Extraction options (e.g. batch vs streaming)
4.	**Integration & Transformation** • Cleansing data • Joining data • Master data • Mapping & Business Rules • Common issues
5.	**Presentation Layer** • Structure • Options (relational, OLAP, data warehouse, BI tool) • Measures

#	Topic
	• Common issues
6.	**Analytics & Reporting** • Modes of operation (governed and exploratory) • Types of reports and dashboards
7.	**Metadata** • Technical • Business • Operational
8.	**How to build a reliable, effective, and maintainable data platform** • Team (skills, roles) • Process (development methodology • Tools (ETL, databases, BI, templates, and others)
9.	**Example tools** • A deeper dive into common current toolsets and their pros and cons
10.	**Common mistakes and references**
11.	**Summary and close**