TECDT130141B

Develop data models

Overview

This standard is about developing data models to discover and visualise organisational requirements for database and related data storage and processing design.

Data modellers discover and document how organisational data is designed, structured and fits together. They are typically responsible for discovering, analysing, and scoping data requirements, and representing and communicating these data requirements through data models.

They develop data models using data modelling tools and industry-standard methods to depict data and enable an organisation to understand its data assets.

Developing data models typically involves using data modelling schemes to model data at three levels of detail: conceptual, logical, and physical. Once a model is built, it needs to be reviewed, approved and maintained.

This standard is for those who need to develop data models as part of their duties.

Performance criteria

You must be able to:

1. engage with stakeholders to identify organisational data requirements essential for guiding data modeling initiatives
2. evaluate existing data types, structures and systems to transform organisational needs into complete data models
3. interpret existing data models to determine necessary relationships and data flows
4. develop conceptual, logical, and physical data models to represent data circulation within organisational information systems
5. maintain data models in line with evolving organisational requirements
6. implement industry standard tools and techniques to facilitate data modelling developments
7. document data model solutions at different levels of abstraction in line with organisational requirements and standards
8. determine data lineage, to show how data flows through the data pipeline
9. reverse engineer data models from operational systems to support the design of new data models
10. provide technical advice and support to database designers and data engineers in line with organisational requirements
11. support the development and integration of data modelling standards and procedures within the organisation

Knowledge and understanding

You need to know and understand:

1. the foundational concepts and principles of data modelling and how to apply them
2. the organisational data types employed within information systems
3. the steps involved in identifying organisational data requirements to inform data modelling activities
4. how to conceptualise and model organisational data flows
5. how to develop and communicate data modelling plans and timescales to key stakeholders
6. how to interpret existing data models to establish relationships and optimise data flows
7. the steps involved in developing conceptual, logical and physical data models and how to apply them
8. the types of data structures and architectures commonly employed by organisations
9. how to apply industry-standard data modelling tools and techniques to data modelling tasks
10. how to document data models using industry standard methods
11. where and when to use different types of data models based on organisational needs
12. how to effectively compare and contrast different data models to determine their suitability for specific scenarios
13. how to reverse-engineer data models from operational systems to enhance understanding and inform new modelling activities
14. data modelling techniques tailored for both on-premises and cloud platforms
15. how to automate data model development
16. organisational data modelling standards and how to implement them
17. how to translate and communicate data modelling concepts into easily understandable forms for diverse stakeholders

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