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Infosys Leverages Grakn for Data Lineage & Metadata Management

Industry
IT Services

Use Case
Metadata Management

Challenge
To model complex metadata that requires a hypergraph structure

Solution
Storing integrated metadata in graph format with Grakn

Result
An application that enables internal users of large organisations to find their required data with certification information and cognitive linkages

Infosys is a global leader in next-generation digital services and consulting. They enable clients in 45 countries to navigate their digital transformation. With over three decades of experience in managing the systems and workings of global enterprises, they expertly steer their clients through their digital journey. Infosys does this by enabling the enterprise with an AI-powered core that helps prioritize the execution of change.

For Infosys's Data Governance Workbench, Grakn was leveraged as a hyper-relational knowledge base to store integrated metadata in graph format. Rajan Padmanabhan, AVP & Senior Principal Technology Architect, says: "this enables ontology-based cognitive metadata search with NLP, which is continuously improved with AI, which allows connecting the unconnected, such as how weather affects store sales."

Challenge

Infosys Consumption Workbench (CWB) including the Data Café module and the Infosys Data Governance Workbench (DGW), including the Metadata Hub module, are Infosys solutions that leverage Grakn. For this, Rajan and his team built a data model that required the modelling of unlimited relationships and nodes in order to realistically depict the meta data of an organization, including technical, business, and operational metadata. The complexity of the model is derived from the complex many to many relationships between datasets, entities and attributes.

To represent and query this type of meta data, Rajan & his team recognised the challenges they faced when working with traditional database systems, for example relational or property graph databases. To address these challenges, the Infosys team chose to use Grakn.

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Rajan Padmanabhan, AVP & Senior Principal Technology Architect
Infosys

Why Grakn

Infosys chose Grakn because it can have a flexible yet well-defined data model based on hyper-relationships, which makes it possible to define metadata of an organization in terms of data sets, attributes, entities, code components, and so on, and to further extend it to depict their relationships with each other, with enterprise applications & systems, and also users. As the team explains: "This data model approach makes querying easier and gives compatibility with visualisation tools such as Tableau/QlikView and Linkurius."

They further chose Grakn because the data model ensures support for dynamic ontologies, where business terms and hierarchies may change over time and contexts. Grakn's built-in AI-functions enabled the Infosys team to orchestrate complex relationships easier, such as parent-child based meta data searches, and bring out the unknown relationship within the data, it allows them to connect unconnected data.

Benefits

Using Grakn enabled the Infosys team to provide cognitive search via a portal to internal users of any organization who need different data sets for various purposes, like reporting, analytics, regulatory compliance etc. As Rajan explains: "Grakn enables users (business users, stewards, IT users) to find their required data with certification information and cognitive linkages, i.e. what are the related data sets and the data set they are searching, just like Google Search. The use of Grakn for such linkages enable users to discover unknown relationships and dark data (less frequently analyzed data sets together)".

Finally, Grakn enabled Infosys to build a Data Marketplace Solution to find related data and manage its publication, subscription, and monetising data assets better.

Grakn is the knowledge graph to organise complex networks of data and making it queryable, by performing knowledge engineering. Rooted in Knowledge Representation and Automated Reasoning, Grakn provides the knowledge foundation for cognitive and AI systems, by providing an intelligent language for modelling, transactions and analytics. Being a distributed database, Grakn is designed to scale over a network of computers through partitioning and replication.

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