

# INTEGRATING KNOWLEDGE GRAPHS WITH TRADITIONAL BI TOOLS

## PROJECT INITIATION

START

Database design to store in Triples (Subject-Predicate-Object) structures, which form the building blocks of semantic data

Do you know what RDF triple store is?

Subject Predicate Object  
Avatar hasDirector Chris

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Researching what Knowledge Graph is?

Knowledge Graph is a structured network of interconnected data, entities and relationships that enhances search, analysis, and contextual understanding

## DATABASE & DATASET SELECTION

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Which datasets should we select for this project?

You can choose any datasets. The integration and visualisation methods are the main focus.

Why choose GraphDB over the others?

For the multiple resources on GraphDB such as Guides. Simple Inference capability and user interface suits our medium size organization

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## INTEGRATION METHODS



We explored two options:

- (1) Configuring SQL tables via JDBC-ODBC or
- (2) Using a Python script to extract data through SPARQL and load CSVs.

We are considering using custom visuals like the ZoomCharts and NetworkX to display graph data.

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## VISUALISATION METHODS

Excellent! Keep exploring the options.

Well done! But...

I wonder how the visual charts in graphDB works?

### GraphDB

GraphDB is a database that organises data as a network of connected entities, making it easy to find relationships and patterns between them.

Great question! We'll research how the visual charts in GraphDB work and get back to you.

### NetworkX Dashboard Improvement Ideas...

- Can we use distinct colors for each node?
- Can we adjust node sizes based on data volume?
- Can we limit data and apply double filters for faster retrieval networked graph?

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## USER INTERACTION

### USER GROUPS

1. Zoomcharts + GraphDB
2. NetworkX + GraphDB

### Power BI Dashboard with ZoomCharts & NetworkX

- Users appreciated having both traditional and network graphs together.
- They felt this was more engaging and interactive.
- Navigation was easy and straightforward.

At first, we felt clueless about SPARQL queries in GraphDB, but later used ChatGPT to help query and finally got the hang of it

### GraphDB

Users felt overwhelmed by too many steps. Everything wasn't in one place, making it hard to navigate.

Switching back to traditional tools or getting support brought relief to the users

- I'm excited to see where I can use this in my future work place.
- This project elevated my Power BI skills and taught me new visuals for networked graphs!
- I want to leverage knowledge graphs with Power BI to unlock deeper insights and drive innovative data solutions.
- New to knowledge graphs, this project has expanded my understanding for future work!

FINISH