Step 1: Creating SKOS

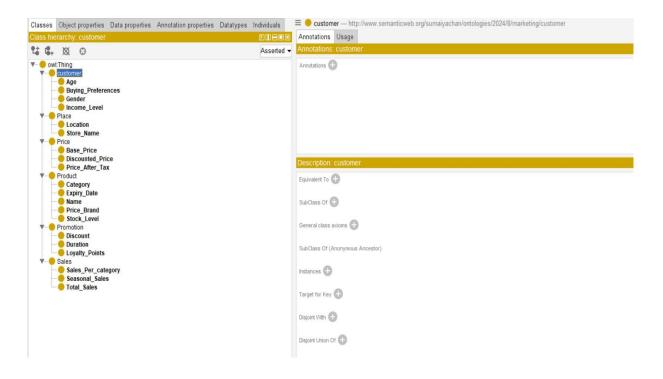


Fig 1

The ontology in the image is about customers and their attributes, such as age, gender, income level, buying preferences, location, and purchase history. The ontology also includes information about products, prices, promotions, and sales.

Step 2: Object Properties

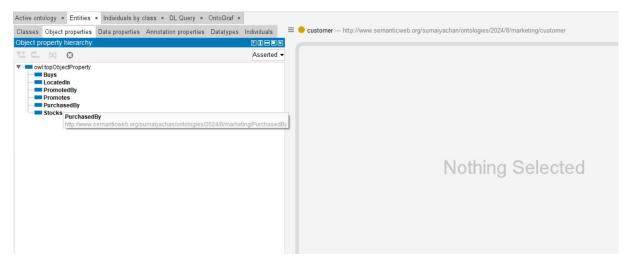


Fig 2

This tab lists all of the object properties defined in the ontology. Object properties are used to relate objects to each other. For example, the PurchasedBy property relates a Sale to a Customer.

Step 3:Data Properties

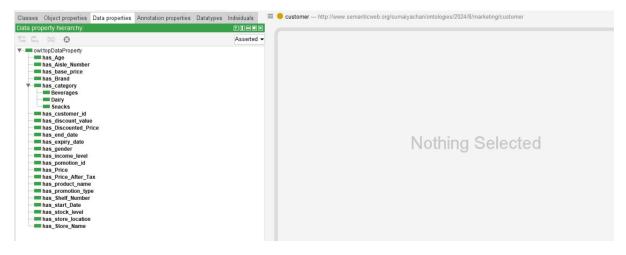


Fig 3

Data properties:

- has_Name: Describes the name of a person, place, or thing.
- has_Address: Describes the address of a location.
- has_BirthDate: Describes the birth date of a person.
- has_PhoneNumber: Describes the phone number of a person or organization.
- has_Email: Describes the email address of a person or organization.
- has_Salary: Describes the salary of an employee.
- has_Price: Describes the price of a product.

Step 4: Visualizing in OntoGraf

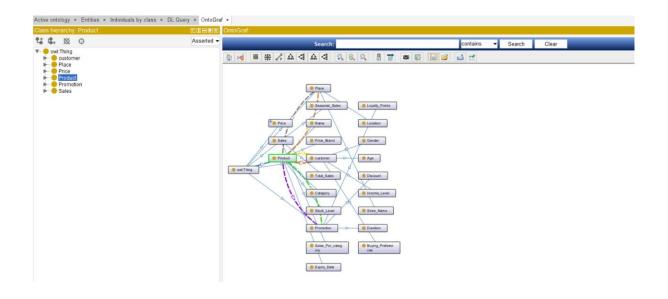


Fig 4.1

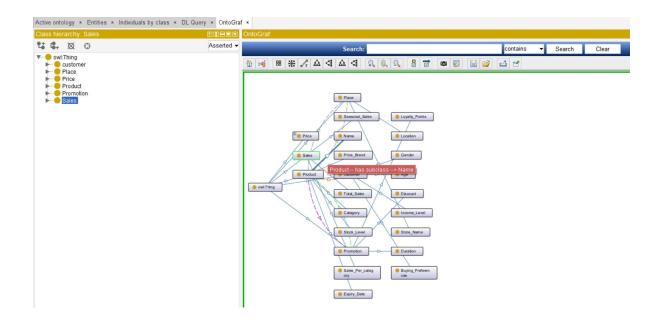


Fig 4.2

Step 5:

Once it's over, need to save the locally and import that file in google colab notebook for Topic Modelling. Once it's done save the file in .csv format.

Google Colab link:

https://colab.research.google.com/drive/1RZ3mf0Jskt9ucvowSs3OJs_GoagDJJWE?usp=sharing

Step 6: Create a Graph DB in Neo4j

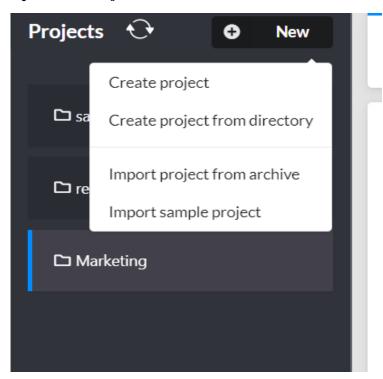


Fig 6

Step 6.1: Name the file as Marketing and active the Database

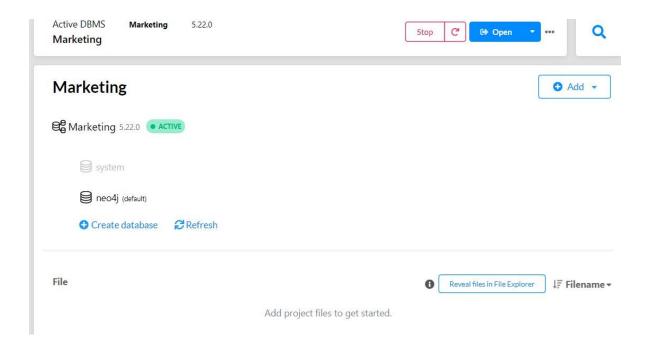


Fig 6.1

Step 6.2: Import the csv file in the required path

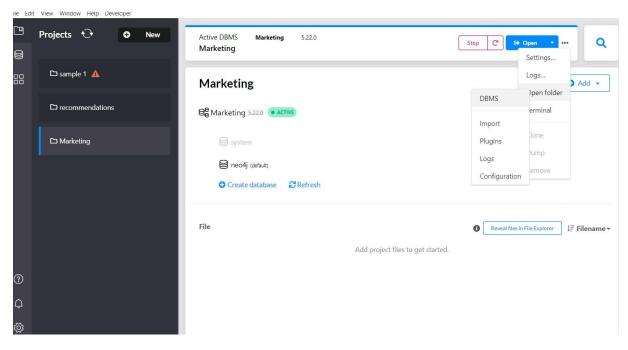


Fig 6.2

Step 6.3 : Click open to get the Neo4j Browser page

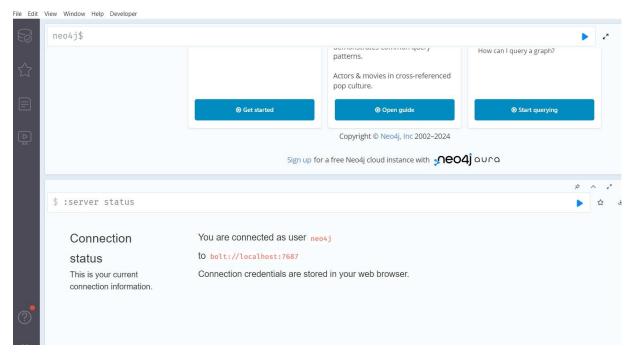


Fig 6.3

Step 6.4: Connect the classes, subclasses, object property, data property

```
1 LOAD CSV WITH HEADERS FROM 'file:///combined_data.csv' AS row
2 WITH row
3 WHERE row.Type = 'Class'
4 MERGE (c:Class {name: row.Class});

Added 26 labels, created 26 nodes, set 26 properties, completed after 347 ms.
```

Fig 6.4.1

```
LOAD CSV WITH HEADERS FROM 'file:///combined_data.csv' AS row

WITH row

WHERE row.Type = 'Subclass'

MERGE (sc:Subclass {name: row.Subclass})

MERGE (c:Class {name: row.Class})

MERGE (sc)-[:SUBCLASS_OF] → (c);

Added 20 labels, created 20 nodes, set 20 properties, created 20 relationships, completed after 128 ms.
```

Fig 6.4.2

```
1 // Data Properties
2 LOAD CSV WITH HEADERS FROM 'file:///combined_data.csv' AS row
3 WITH row
4 WHERE row.Type = 'Data Property'
5 MERGE (d:DataProperty {name: row['Data Property']})
6 MERGE (dom:Domain {name: row.Domain})
7 MERGE (ran:Range {name: row.Range})
8 MERGE (d)-[:HAS_DOMAIN] → (dom)
9 MERGE (d)-[:HAS_RANGE] → (ran);

Added 32 labels, created 32 nodes, set 32 properties, created 44 relationships, completed after 169 ms.
```

Fig 6.4.3

Fig 6.4.4

Step 6.5: View the Entire graph

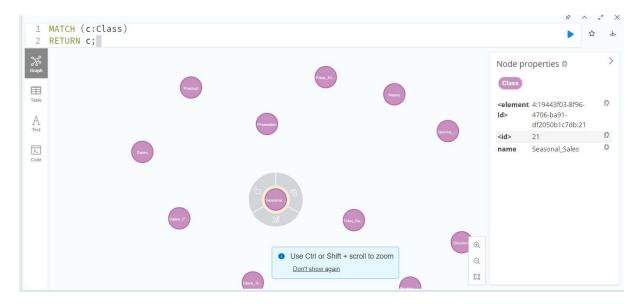


Fig 6.5.1

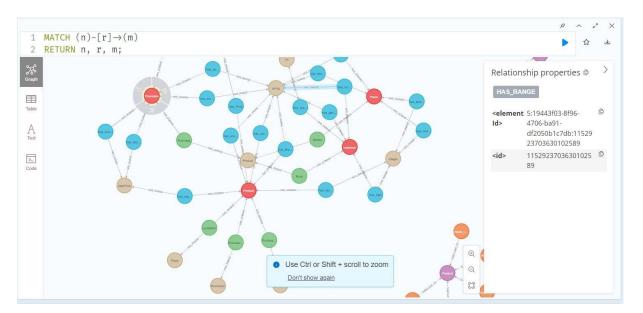


Fig 6.5.2

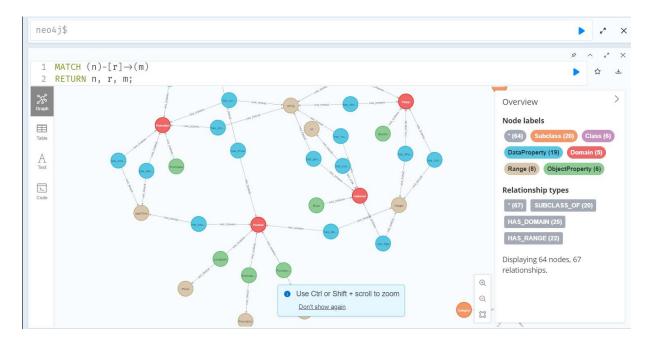


Fig 6.5.3