Building and Visualising Enterprise-Ready Knowledge Graphs in the Cloud

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Principal Solutions Engineer
Oracle A-team

Collaboration between Semantic Web Company and Oracle

Safe Harbor Statement

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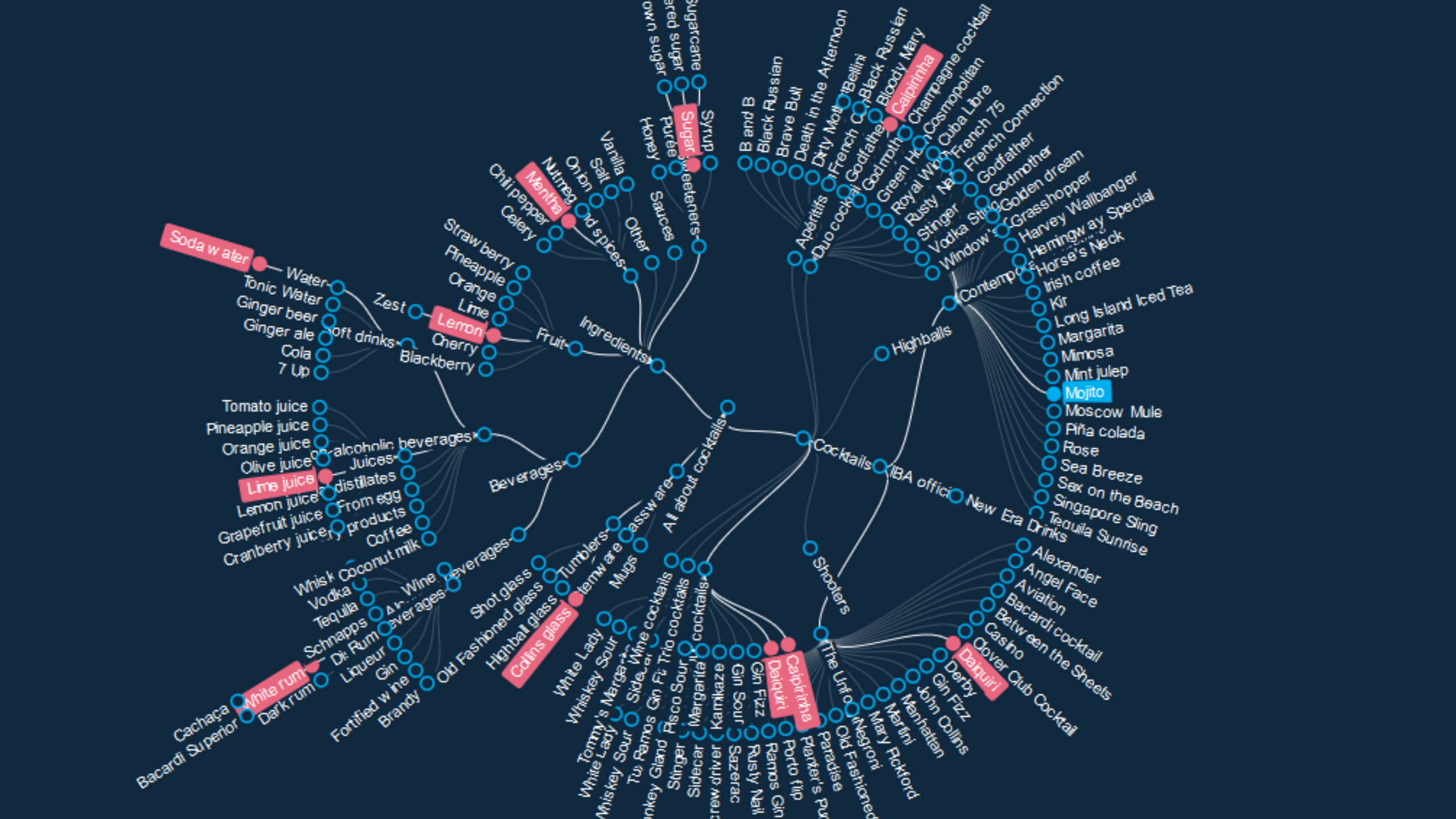
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Tonic Water
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7 Up
Soft drinks
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Syrup
Ingredients
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Highball glass
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Oracle Database RDF Semantic Graph Database

- Parallel load, inference, query
- Compression & partitioning
- Triple-level Label security
- W3C standards compliance
- Semantic Indexing of text
- Enterprise Manager, Data Guard Support, High Availability
- Support for Open Source (Development framework, ontology editing, visualization)
- On-premise, Oracle Database Cloud Service (DBCS), Exadata Cloud Service, Exadata Cloud at Customer

Load / Storage	• Native RDF graph data store • Manages billions of triples • Optimized storage architecture • RDF Views on Relational Data
Query	• SPARQL-Jena/Joseki • SQL/graph query, B-tree indexing • Ontology assisted SQL query
Reasoning	• RDFS, OWL2 RL, EL, SKOS • User-defined rules • Incremental, parallel reasoning • User-defined inferencing • Plug-in architecture

Analytics	• Semantic indexing framework
	• Integration with
	  • OBIEE, Oracle R Enterprise
	  • Oracle Data Mining

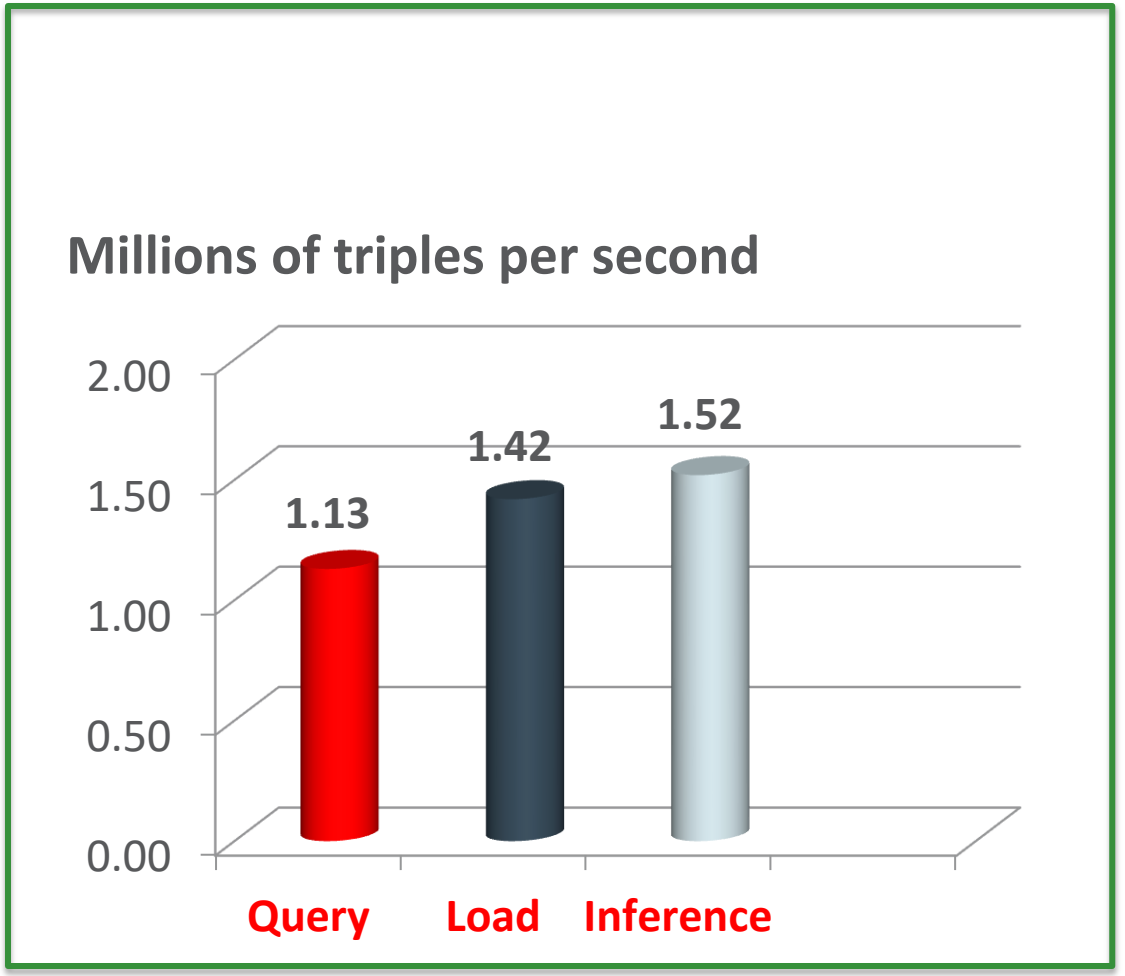
ORACLE

Big Data Graph Benchmark

1 Trillion Triple RDF Benchmark with Oracle Spatial and Graph

- **World's fastest data loading performance**
- **World's fastest query performance**
- **Worlds fastest inference performance**
- **Massive scalability: 1.08 trillion edges**

- **Platform**: Oracle Exadata X4-2 Database Machine
- **Source**: w3.org/wiki/LargeTripleStores



Oracle Database Spatial and Graph Tooling

Transaction Systems

Unstructured Content

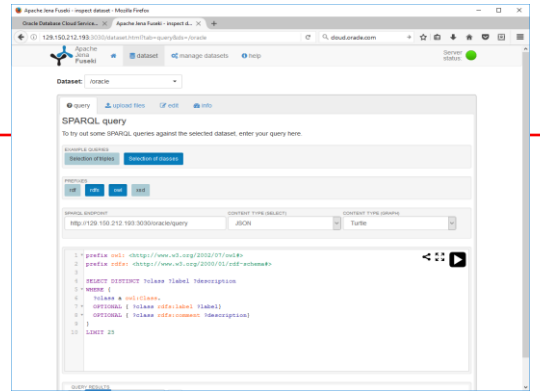
RSS, email

Other Data Formats

Data Sources

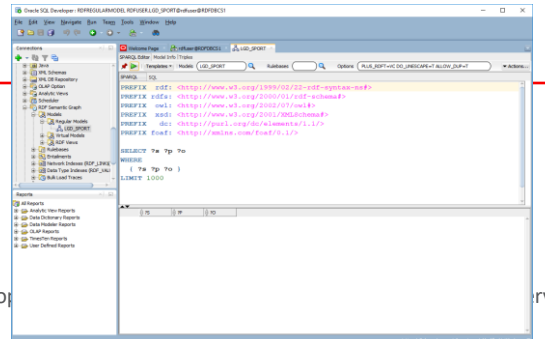
Transform & Modeling Tools

- Relational2RDF (R2RML)
- Support for Protégé
- Support for Apache Jena, Fuseki
- Natural Language Processing Extraction (partners)



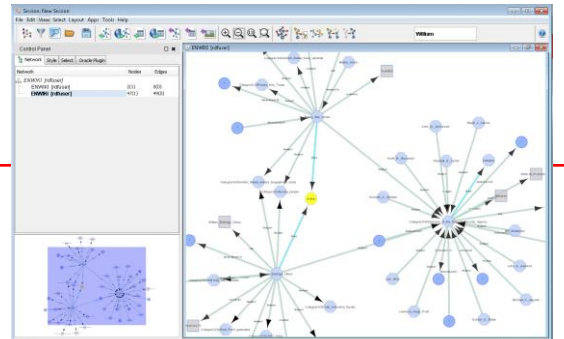
Load, Query & Inference

- RDF/OWL Data Management
- SQL & SPARQL Query
- OWL Inferencing
- Semantic Rules, Semantic Indexing
- Scalability & Security



Applications & Analysis Tools

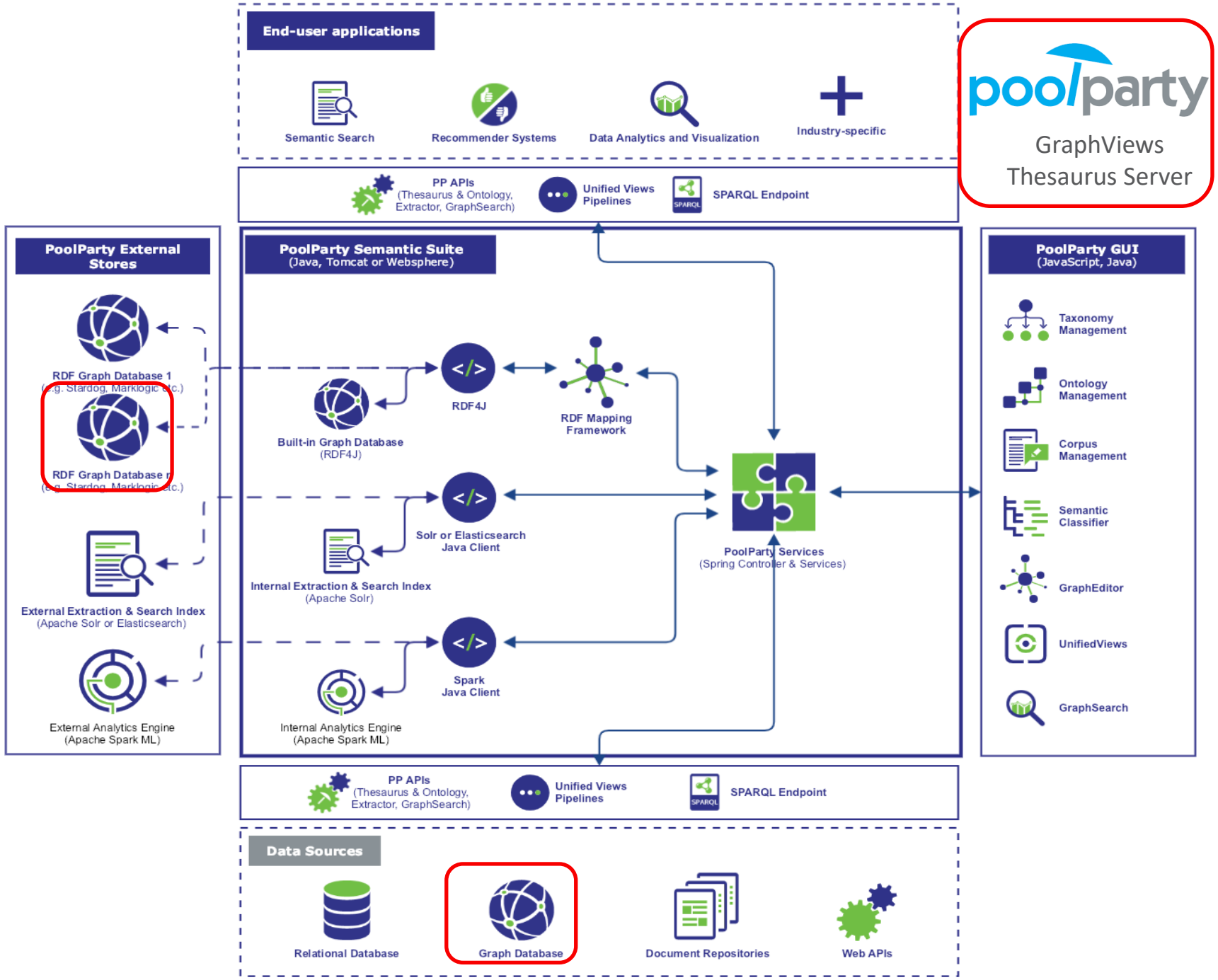
- Java, HTTP access, JSON, XML output, SPARKL Graph visualization (Cytoscape)
- Oracle Advanced Analytics (R, Mining), Oracle Business Intelligence (OBIEE)
- Map (GIS) Visualization



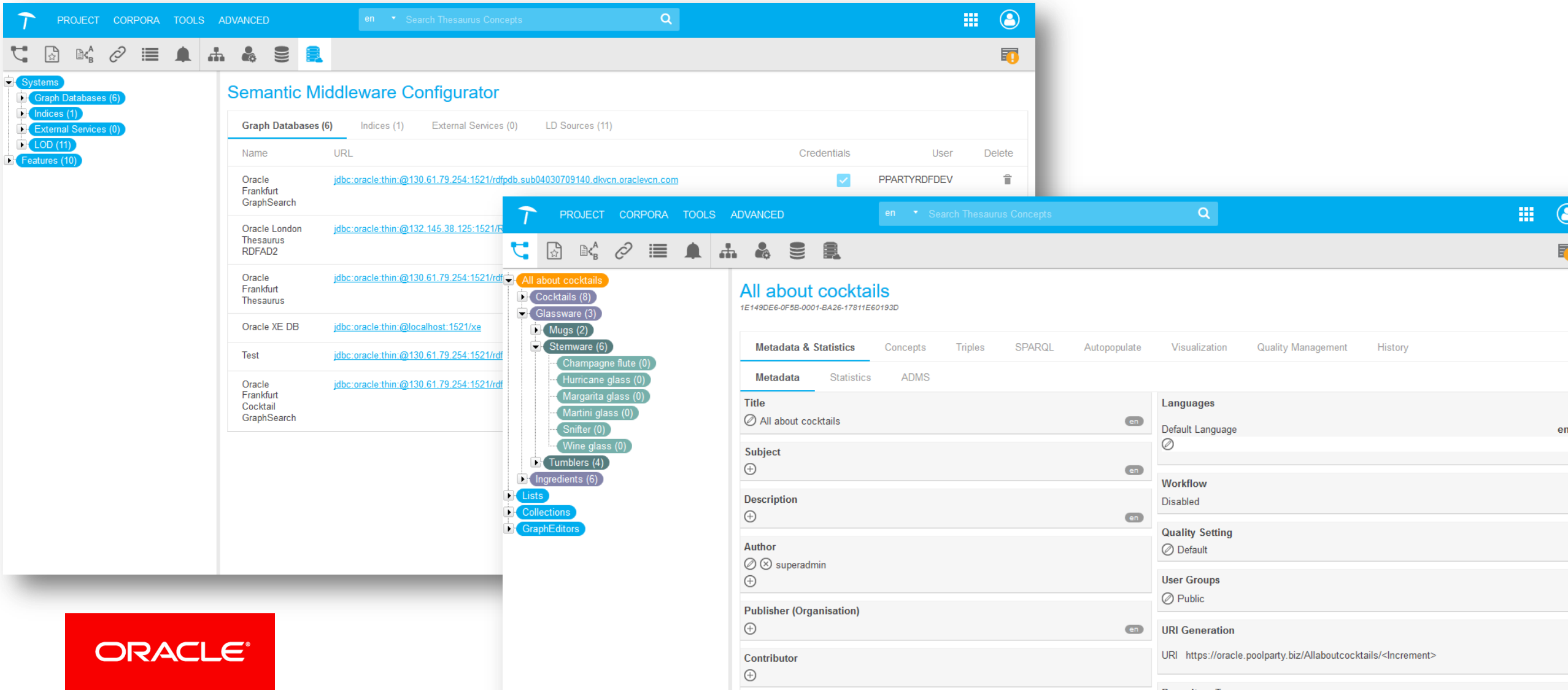
Demo

Semantic Graph Visualisation with **Oracle RDF** and **PoolParty** Thesaurus Server and Graphviews

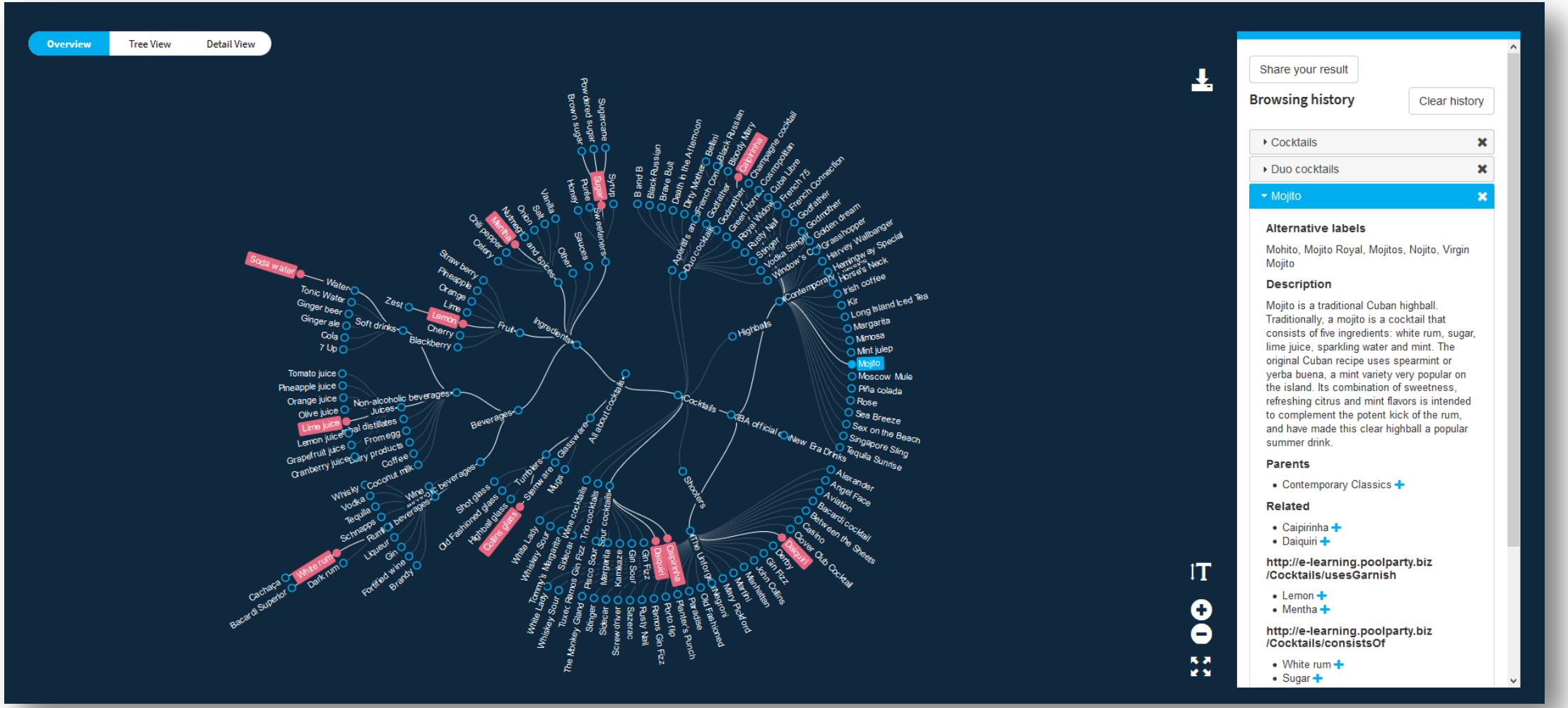
RDF Graph on Oracle Cloud



Semantic Middleware Configurator – Thesaurus Editor



Semantic GraphViews with Oracle RDF and PoolParty



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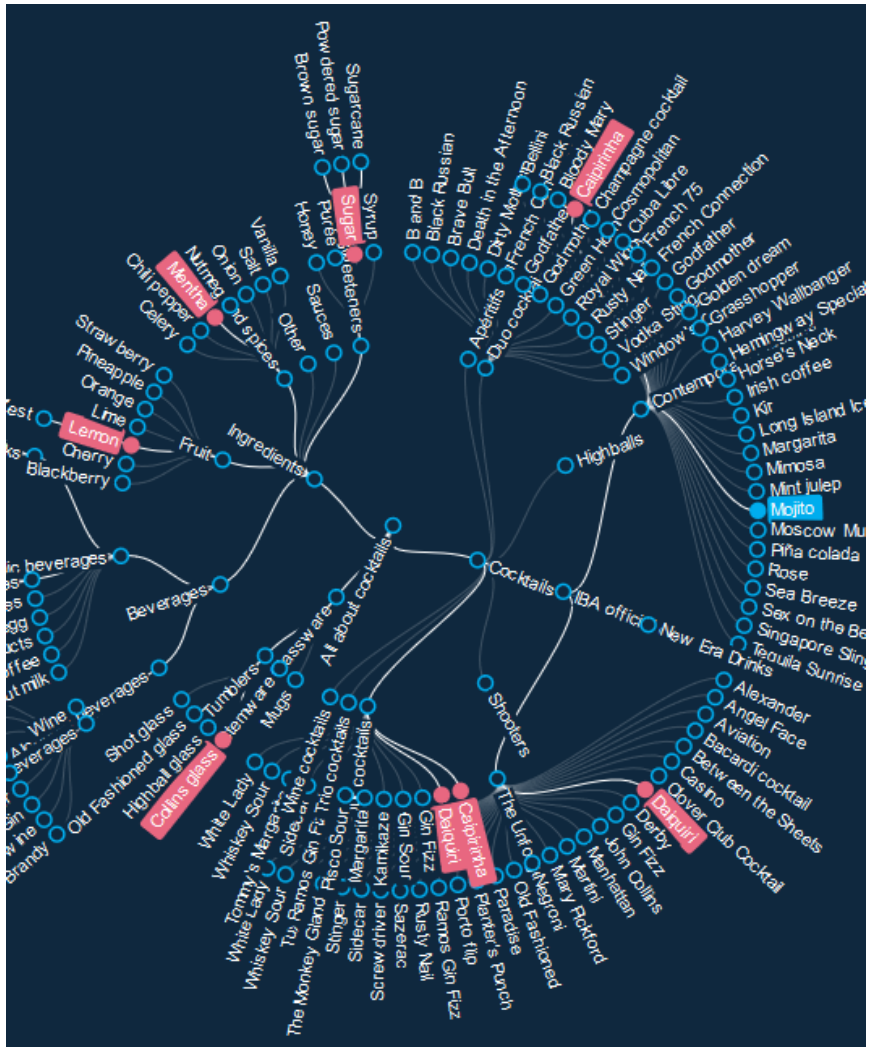

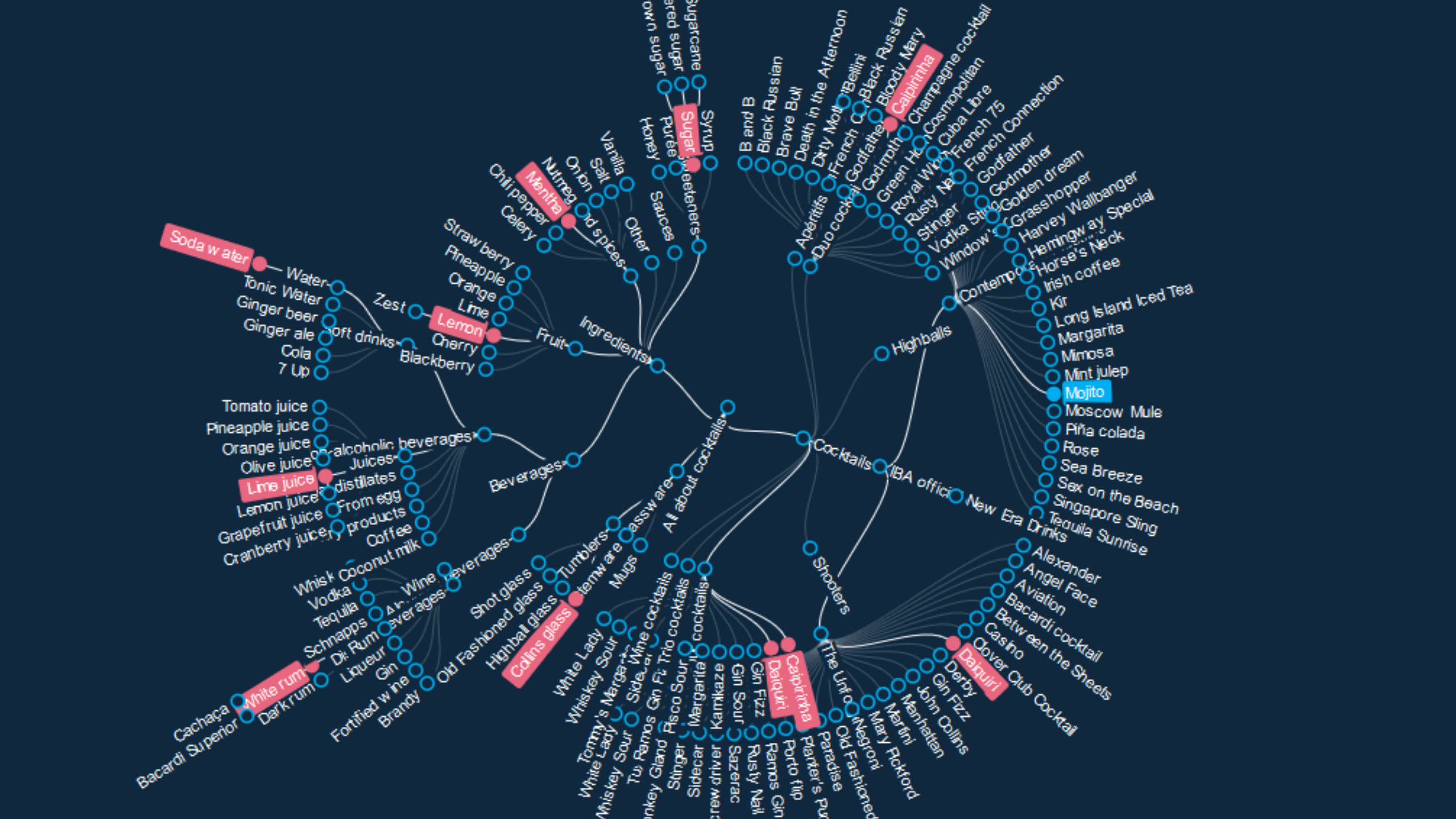
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