

# **TR-102**

## **MASTERING THE SEMANTIC WEB**

### **DAY-13**

#### **Introduction to SPARQL in the Flight Reservation System**

The flight reservation system ontology, represented in Turtle format, models the structure and relationships of core entities in the airline domain, such as airlines, flights, airports, and their connections. This ontology includes:

- Airlines: Entities like IndiGo, Air India, AIX Connect, and Akasa Air, with attributes for names, headquarters, and IATA codes.
- Flights: Details of individual flights, including flight numbers, departure and arrival airports, departure and arrival times, and the airline operating each flight.
- Airports: Information on various airports, each with a name, location, and IATA code, enabling identification and distinction between airports.

SPARQL, as a query language for RDF data, allows for complex data retrieval and analysis across this structured dataset. By using SPARQL queries, we can extract useful information about flight schedules, airline operations, and airport locations, enabling sophisticated data management and insights within the reservation system.

#### **Purpose of SPARQL in the System**

SPARQL's main role in the flight reservation ontology is to:

- Retrieve specific data (e.g., all flights operated by a particular airline or flights departing from a particular airport).
- Enable complex queries by linking entities based on their attributes and relationships, thus allowing detailed insights like flight schedules, airport details, and more.
- Support flexible data access for applications needing real-time, structured data about flights, airlines, and airports, enhancing user experience in airline management and booking systems.

This Turtle file, coupled with SPARQL queries, forms the foundation of a data-driven, query-capable airline system that can be integrated into web applications or databases for various airline industry applications.