

London Metropolitan University



CS7051- Semantic Technologies Coursework –3

Individual Report

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Submitted To:

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1. Introduction

This coursework deals with creating a program to derive inference by using the semantic model implemented in Protégé as reference. In order to read the semantic model written in an XML format, we require a specialized API to parse through the tags and retrieve the information, in this coursework Jena has been chosen as the API to accomplish the task. Unlike XML API, Jena considers a file to be as an RDF/RDFS ontology and uses the respective tags for processing it based on the logic of the tags. IntelliJ has been chosen as the coding environment for its integration with maven, which is used for installing the Jena API. The program created is exported as a jar file so that it can be used as a standalone program which can process files in XML Format and display the content on screen.

2. Drivers

```
import org.apache.jena.ontology.OntClass;  
import org.apache.jena.ontology.OntModel;  
import org.apache.jena.ontology.OntModelSpec;  
import org.apache.jena.query.*;  
import org.apache.jena.rdf.model.Literal;  
import org.apache.jena.rdf.model.ModelFactory;  
  
import java.io.File;  
import java.io.FileReader;  
import java.util.Iterator;
```

The packages required for this program are imported into the program at the beginning of the code, the first 6 packages listed are the Jena packages and the remaining 3 are standard java packages that are used for the development of the program.

```
OntModel model = null;  
try {  
    File file = new File(filename);  
    FileReader reader = new FileReader(file);  
    model = ModelFactory.createOntologyModel(OntModelSpec.OWL_DL_MEM);  
  
    model.read(reader, "RDF/XML");  
} catch (Exception e) {  
    e.printStackTrace();  
}
```

An object for the OntModel is created in the name model and initialised with the value as null. In a try catch block the File and FileReader objects are created to read the input file, a base model is created using the ModelFactory class, and the base model uses the FileReader object to take the input file as input.

3. Formatted output of the Ontology

```
model.write(System.out, "RDF/XML-ABBREV");
```

Using the write function of the model, the entire ontology can be written out, since System.out has been given as input, the ontology will be written in the console log as RDF/XML format since the model uploaded is in that format.

4. Logic Inference and querying the Ontology

Query1: Display all subclasses of the AirCrew Class

```
String queryString = "PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>" +
    "PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>" +
    "select ?uri " +
    "where { " +
    "?uri rdfs:subClassOf"
    "<http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirCrew> " +
    "} \n";
Query query = QueryFactory.create(queryString);

System.out.println("-----");

System.out.println("Query Result Sheet1");

System.out.println("-----");

QueryExecution qe = QueryExecutionFactory.create(query, model);
ResultSet results = qe.execSelect();

ResultSetFormatter.out(System.out, results, query);
qe.close();
```

The SPARQL query is generated as a string input and passed to the QueryFactory to be assigned to a Query object. The Query object contains the SPARQL query in a proper format, the query object is passed into QueryExecutionFactory to be assigned to a QueryExecution object. The execSelect function is used to execute the SPARQL query, the output provided is stored in a ResultSet and ResultSetFormatter is used to display the output.

Output:

```
-----
Query Result Sheet1
-----
-----
| uri |
=====
| <http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pilot> |
| <http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FlightAttendants> |
```

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Query2: Display all the plane id's

```
String queryString2 = "PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>" +
    "PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>" +
    "select * Where { " +
    "?Plane <http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#plane_id> ?x ." +
    "} \n";
Query query2 = QueryFactory.create(queryString2);

System.out.println("-----");
System.out.println("Query Result Sheet2");
System.out.println("-----");

QueryExecution qe2 = QueryExecutionFactory.create(query2,model);
try{
    ResultSet results2 = qe2.execSelect();
    while( results2.hasNext()) {
        QuerySolution soln = results2.nextSolution();
        Literal hasPoints = soln.getLiteral("x");
        System.out.println(hasPoints);
    }
}finally {
    qe2.close();
}
```

Output:

```
-----
Query Result Sheet2
-----
PLA7862^^http://www.w3.org/1999/02/22-rdf-syntax-ns#langString
PLA7856^^http://www.w3.org/1999/02/22-rdf-syntax-ns#langString
PLA1234^^http://www.w3.org/1999/02/22-rdf-syntax-ns#langString
```

5. Formatted Output of Ontology

```

<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:untitled-ontology-6="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#"
  xmlns:swrlb="http://www.w3.org/2003/11/swrlb#"
  xmlns="http://www.semanticweb.org/indra/ontologies/2023/4/untitled-ontology-24#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:swrl="http://www.w3.org/2003/11/swrl#"
  xmlns:swrla="http://swrl.stanford.edu/ontologies/3.3/swrla.owl#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#">
  <owl:Ontology rdf:about="http://www.semanticweb.org/indra/ontologies/2023/4/untitled-ontology-24"/>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WashRoom">
    <rdfs:subClassOf>
      <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Lounge"/>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportSecurity">
    <rdfs:subClassOf>
      <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#GroundCrew"/>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BaggageHandlers">
    <rdfs:subClassOf>
      <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#GroundCrew"/>
    </rdfs:subClassOf>
  </owl:Class>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ControlStation"/>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Domestic">
    <rdfs:subClassOf>

```

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```
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
  </rdfs:subClassOf>
</owl:Class>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
  <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirCrew">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    </owl:Class>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#GroundCrew">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    </owl:Class>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#International">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
    </owl:Class>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Baggage"/>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirTrafficController">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#GroundCrew"/>
    </owl:Class>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DomesticJourney">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
    </owl:Class>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pilot">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirCrew"/>
    </owl:Class>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
    <owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Cafeteria">
      <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Lounge"/>
```

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```
</owl:Class>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#InternationalJourney">
  <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
</owl:Class>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BedRoom">
  <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Lounge"/>
</owl:Class>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FlightAttendants">
  <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirCrew"/>
</owl:Class>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ExternalFactors"/>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportEngineer">
  <rdfs:subClassOf rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#GroundCrew"/>
</owl:Class>
<owl:Class rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airline"/>
<owl:ObjectProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ServesIn">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FlightAttendants"/>
</owl:ObjectProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#airport_name">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#airport_country">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
```


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```
<rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#airline_name">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airline"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#route_startlocation">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#staff_id">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#plane_modelname">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#journey_start">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#plane_id">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#route_destination">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
</owl:DatatypeProperty>
```

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```
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#journey_id">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#cafe_id">
  <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#real"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Cafeteria"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#baggage_id">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Baggage"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#baggage_weight">
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#decimal"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Baggage"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ticket_price">
  <rdfs:range>
    <rdfs:Datatype>
      <owl:oneOf>
        <rdf:List>
          <rdf:rest>
            <rdf:List>
              <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
              <rdf:first>£</rdf:first>
            </rdf:List>
          </rdf:rest>
          <rdf:first>$</rdf:first>
        </rdf:List>
      </owl:oneOf>
    </rdfs:Datatype>
  </rdfs:range>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
</owl:DatatypeProperty>
```

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```
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#route_id">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#journey_destination">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#baggage_type">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Baggage"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#journey_stops">
  <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#real"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#staff_name">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#passenger_age">
  <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#real"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ticket_departuretime">
  <rdfs:range rdf:resource="http://www.w3.org/2001/XMLSchema#integer"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#passenger_name">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
```

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```
<rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#EF_name">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ExternalFactors"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#bedroom_id">
  <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#real"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BedRoom"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#airport_code">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#airline_code">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airline"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#washroom_id">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WashRoom"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ticket_type">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#airport_city">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
</owl:DatatypeProperty>
```

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```
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#cafe_name">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Cafeteria"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ticket_number">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
</owl:DatatypeProperty>
<owl:DatatypeProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#cs_code">
  <rdfs:range rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ControlStation"/>
</owl:DatatypeProperty>
<owl:SymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#worksTogether">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FlightAttendants"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pilot"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:SymmetricProperty>
<owl:FunctionalProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasNumberOfStops">
  <rdfs:range>
    <owl:Restriction>
      <owl:someValuesFrom rdf:resource="http://www.w3.org/2002/07/owl#real"/>
      <owl:onProperty rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#journey_stops"/>
    </owl:Restriction>
  </rdfs:range>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:FunctionalProperty>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasGroundCrew">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#GroundCrew"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
```

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```
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasAirControllStaff">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirTrafficController"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ControlStation"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<swrl:Imp>
  <swrl:head>
    <swrl:AtomList>
      <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
      <rdf:first>
        <swrl:IndividualPropertyAtom>
          <swrl:argument2>
            <swrl:Variable rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
          </swrl:argument2>
          <swrl:argument1>
            <swrl:Variable rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
          </swrl:argument1>
          <swrl:propertyPredicate>
            <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasExternalFactors">
              <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ExternalFactors"/>
              <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
              <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
            </owl:AsymmetricProperty>
          </swrl:propertyPredicate>
        </swrl:IndividualPropertyAtom>
      </rdf:first>
    </swrl:AtomList>
  </swrl:head>
  <swrl:body>
    <swrl:AtomList>
```

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```
<rdf:rest>
  <swrl:AtomList>
    <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
    <rdf:first>
      <swrl:ClassAtom>
        <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
        <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ExternalFactors"/>
        </swrl:ClassAtom>
      </rdf:first>
    </swrl:AtomList>
  </rdf:rest>
  <rdf:first>
    <swrl:ClassAtom>
      <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
      <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
      </swrl:ClassAtom>
    </rdf:first>
  </swrl:AtomList>
</swrl:body>
<rdfs:label>S2</rdfs:label>
<rdfs:comment>Some journeys may have an external factor</rdfs:comment>
<swrla:isRuleEnabled rdf:datatype="http://www.w3.org/2001/XMLSchema#boolean"
>true</swrla:isRuleEnabled>
</swrl:Imp>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#loadedInto">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Baggage"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasFlightAttendant">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FlightAttendants"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
```

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```
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<swrl:Imp>
  <swrl:head>
    <swrl:AtomList>
      <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
      <rdf:first>
        <swrl:IndividualPropertyAtom>
          <swrl:argument2 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
          <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
          <swrl:propertyPredicate>
            <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#journeyViaAirports">
              <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
              <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
              <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
              <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
            </owl:AsymmetricProperty>
          </swrl:propertyPredicate>
        </swrl:IndividualPropertyAtom>
      </rdf:first>
    </swrl:AtomList>
  </swrl:head>
  <swrl:body>
    <swrl:AtomList>
      <rdf:rest>
        <swrl:AtomList>
          <rdf:rest>
            <swrl:AtomList>
              <rdf:rest>
                <swrl:AtomList>
                  <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
                  <rdf:first>
                    <swrl:BuiltinAtom>
                      <swrl:arguments>
                        <rdf:List>
                          <rdf:rest>
```


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```
<rdf:List>
  <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
  <rdf:first rdf:datatype="http://www.w3.org/2001/XMLSchema#integer"
    >0</rdf:first>
</rdf:List>
</rdf:rest>
<rdf:first>
  <swrl:Variable
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/n"/>
    </rdf:first>
  </rdf:List>
  </swrl:arguments>
  <swrl:builtin rdf:resource="http://www.w3.org/2003/11/swrlb#greaterThan"/>
  </swrl:BuiltinAtom>
  </rdf:first>
  </swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:IndividualPropertyAtom>
    <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/n"/>
      <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
        <swrl:propertyPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#hasNumberOfStops"/>
          </swrl:IndividualPropertyAtom>
        </rdf:first>
      </swrl:AtomList>
    </rdf:rest>
  </rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
      <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
        </swrl:ClassAtom>
      </rdf:first>
    </swrl:AtomList>
  </rdf:rest>
</rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
```

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```
ontology-6/x"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
    </swrl:ClassAtom>
    </rdf:first>
    </swrl:AtomList>
</swrl:body>
<rdfs:label>S3</rdfs:label>
<rdfs:comment>Every Journey with more than 0 intermediate stops passes via an
airport</rdfs:comment>
    <swrla:isRuleEnabled rdf:datatype="http://www.w3.org/2001/XMLSchema#boolean"
    >true</swrla:isRuleEnabled>
</swrl:Imp>
    <owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#belongsTo">
    <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Passengers"/>
    <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Baggage"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<untitled-ontology-6:Journey
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DJ1">
    <untitled-ontology-6:journey_stops rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
    >1</untitled-ontology-6:journey_stops>
    <untitled-ontology-6:journey_start rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >London</untitled-ontology-6:journey_start>
    <untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >JFK911</untitled-ontology-6:journey_id>
    <untitled-ontology-6:journey_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Luton</untitled-ontology-6:journey_destination>
    <untitled-ontology-6:journeyViaAirports>
    <untitled-ontology-6:Airport
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Oslo">
    <untitled-ontology-6:airport_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Oslo International</untitled-ontology-6:airport_name>
    <untitled-ontology-6:airport_country rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Norway</untitled-ontology-6:airport_country>
```

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```
<untitled-ontology-6:airport_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Os123</untitled-ontology-6:airport_code>
  <untitled-ontology-6:airport_city rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Oslo</untitled-ontology-6:airport_city>
    <untitled-ontology-6:hasGroundCrew>
      <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH3">
        <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
          >Scott</untitled-ontology-6:staff_name>
          <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
            >S12</untitled-ontology-6:staff_id>
            <untitled-ontology-6:worksFor>
              <untitled-ontology-6:Airport
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin">
                <untitled-ontology-6:airport_name rdf:datatype=
                  "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                    >Rome City</untitled-ontology-6:airport_name>
                    <untitled-ontology-6:airport_code rdf:datatype=
                      "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                        >DUB111</untitled-ontology-6:airport_code>
                        <untitled-ontology-6:airport_name rdf:datatype=
                          "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                            >Dublin City Airport</untitled-ontology-6:airport_name>
                            <untitled-ontology-6:airport_country rdf:datatype=
                              "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                                >Ireland</untitled-ontology-6:airport_country>
                                <untitled-ontology-6:airport_city rdf:datatype=
                                  "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                                    >Dublin</untitled-ontology-6:airport_city>
                                    <untitled-ontology-6:hasGroundCrew>
                                      <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE1">
                                        <untitled-ontology-6:staff_name rdf:datatype=
                                          "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                                            >Nad</untitled-ontology-6:staff_name>
                                            <untitled-ontology-6:staff_id rdf:datatype=
                                              "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                                                >S1</untitled-ontology-6:staff_id>
```

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```
<untitled-ontology-6:worksFor>
  <untitled-ontology-6:Airport
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Rome">
  <untitled-ontology-6:airport_name rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Rome City</untitled-ontology-6:airport_name>
  <untitled-ontology-6:airport_country rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Italy</untitled-ontology-6:airport_country>
  <untitled-ontology-6:airport_code rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Rom567</untitled-ontology-6:airport_code>
  <untitled-ontology-6:airport_city rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Rome</untitled-ontology-6:airport_city>
  <untitled-ontology-6:hasGroundCrew>
    <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH5">
    <untitled-ontology-6:staff_name rdf:datatype=
      "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >Andy</untitled-ontology-6:staff_name>
    <untitled-ontology-6:staff_id rdf:datatype=
      "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >S111</untitled-ontology-6:staff_id>
    <untitled-ontology-6:worksFor>
      <untitled-ontology-6:Airport
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Reykjavik">
        <untitled-ontology-6:airport_name
          rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Reykjavik</untitled-ontology-6:airport_name>
        <untitled-ontology-6:airport_country
          rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Iceland</untitled-ontology-6:airport_country>
        <untitled-ontology-6:airport_code
          rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Rey987</untitled-ontology-6:airport_code>
        <untitled-ontology-6:airport_city
          rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Reykjavik</untitled-ontology-6:airport_city>
        <untitled-ontology-6:hasGroundCrew>
          <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH4">
```

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```
<untitled-ontology-6:staff_name
  rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Dwight</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id
  rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>S110</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
  <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#BaggageHandlers"/>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:GroundCrew>
  </untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
  <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS4">
    <untitled-ontology-6:staff_name
      rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >Joey</untitled-ontology-6:staff_name>
    <untitled-ontology-6:staff_id
      rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >S104</untitled-ontology-6:staff_id>
    <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
      <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
        <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirportSecurity"/>
          <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
        </untitled-ontology-6:GroundCrew>
      </untitled-ontology-6:hasGroundCrew>
    <untitled-ontology-6:hasGroundCrew>
      <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE4">
        <untitled-ontology-6:staff_name
          rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Emiru</untitled-ontology-6:staff_name>
        <untitled-ontology-6:staff_id
```

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```
        rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >S101</untitled-ontology-6:staff_id>
    <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
    <untitled-ontology-6:maintainsAirport
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirportEngineer"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:GroundCrew>
    </untitled-ontology-6:hasGroundCrew>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:Airport>
    </untitled-ontology-6:worksFor>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#BaggageHandlers"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:GroundCrew>
    </untitled-ontology-6:hasGroundCrew>
    <untitled-ontology-6:hasGroundCrew>
    <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS5">
    <untitled-ontology-6:staff_name rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >Monica</untitled-ontology-6:staff_name>
    <untitled-ontology-6:staff_id rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >S105</untitled-ontology-6:staff_id>
    <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Reykjavik"/>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirportSecurity"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
```

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```
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
  <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE5">
  <untitled-ontology-6:staff_name rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Alpha</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >S102</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Reykjavik"/>
  <untitled-ontology-6:maintainsAirport
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Reykjavik"/>
  <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
  <rdf:type
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirportEngineer"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:GroundCrew>
  </untitled-ontology-6:hasGroundCrew>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Airport>
  </untitled-ontology-6:worksFor>
  <untitled-ontology-6:maintainsAirport
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Rome"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#AirportEngineer"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:GroundCrew>
  </untitled-ontology-6:hasGroundCrew>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  <untitled-ontology-6:hasGroundCrew>
  <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH1">
  <untitled-ontology-6:staff_name rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
```

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```
>Pam</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>S10</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Rome"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BaggageHandlers"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS1">
<untitled-ontology-6:staff_name rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Racheal</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>S4</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Rome"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportSecurity"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
</untitled-ontology-6:Airport>
</untitled-ontology-6:worksFor>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BaggageHandlers"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:GroundCrew
```


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```
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS3">
  <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Ross</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >S6</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#AirportSecurity"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
  <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE3">
  <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Redni</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >S3</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
    <untitled-ontology-6:maintainsAirport
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#AirportEngineer"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Airport>
</untitled-ontology-6:journeyViaAirports>
<untitled-ontology-6:hasRoute>
  <untitled-ontology-6:Route
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DR1">
```

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```
<untitled-ontology-6:route_startlocation rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Sudtyrol</untitled-ontology-6:route_startlocation>
<untitled-ontology-6:route_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>USA7893</untitled-ontology-6:route_id>
<untitled-ontology-6:route_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Rome</untitled-ontology-6:route_destination>
<untitled-ontology-6:landsOn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Rome"/>
<untitled-ontology-6:hasExternalFactors>
<untitled-ontology-6:ExternalFactors
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#EF_NONE">
<untitled-ontology-6:EF_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Clear</untitled-ontology-6:EF_name>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:ExternalFactors>
</untitled-ontology-6:hasExternalFactors>
<untitled-ontology-6:hasControlTower>
<untitled-ontology-6:ControlStation
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS1">
<untitled-ontology-6:cs_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>CS1</untitled-ontology-6:cs_code>
<untitled-ontology-6:hasAirControllStaff>
<untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ATC1">
<untitled-ontology-6:staff_name rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Deaas</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>S7</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS1"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#AirTrafficController"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
```

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```
</untitled-ontology-6:hasAirControllStaff>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:ControlStation>
</untitled-ontology-6:hasControlTower>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Domestic"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Route>
</untitled-ontology-6:hasRoute>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DomesticJourney"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Journey>
<owl:AnnotationProperty
rdf:about="http://swrl.stanford.edu/ontologies/3.3/swrla.owl#isRuleEnabled"/>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR6">
  <untitled-ontology-6:bedroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >BR6</untitled-ontology-6:bedroom_id>
  <untitled-ontology-6:infrastructureOf>
    <untitled-ontology-6:Airport
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Vienna">
      <untitled-ontology-6:airport_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Vienna city airport</untitled-ontology-6:airport_name>
      <untitled-ontology-6:airport_country rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Austria</untitled-ontology-6:airport_country>
      <untitled-ontology-6:airport_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >VIE333</untitled-ontology-6:airport_code>
      <untitled-ontology-6:airport_city rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Vienna</untitled-ontology-6:airport_city>
      <untitled-ontology-6:hasGroundCrew>
        <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH6">
          <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
            >Kevin</untitled-ontology-6:staff_name>
          <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
            >S112</untitled-ontology-6:staff_id>
```

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```
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Vienna"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BaggageHandlers"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS6">
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Chandler</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>S106</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Vienna"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportSecurity"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:hasGroundCrew>
<untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE6">
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Beta</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>S103</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Vienna"/>
<untitled-ontology-6:maintainsAirport
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Vienna"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
```

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```
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportEngineer"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasGroundCrew>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Airport>
</untitled-ontology-6:infrastructureOf>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BedRoom"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
<untitled-ontology-6:InternationalJourney
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IJ1">
  <untitled-ontology-6:hasRoute
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DR1"/>
  <untitled-ontology-6:hasRoute>
    <untitled-ontology-6:Route
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IR1">
      <untitled-ontology-6:route_startlocation rdf:datatype=
        "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
      >rome</untitled-ontology-6:route_startlocation>
      <untitled-ontology-6:route_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
      >MEA1345</untitled-ontology-6:route_id>
      <untitled-ontology-6:route_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
      >Oslo</untitled-ontology-6:route_destination>
      <untitled-ontology-6:landsOn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Oslo"/>
      <untitled-ontology-6:hasExternalFactors>
        <untitled-ontology-6:ExternalFactors
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#EF_Lightning">
          <untitled-ontology-6:EF_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
          >Lightning</untitled-ontology-6:EF_name>
          <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
        </untitled-ontology-6:ExternalFactors>
      </untitled-ontology-6:hasExternalFactors>
      <untitled-ontology-6:hasControlTower>
        <untitled-ontology-6:ControlStation
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS4">
          <untitled-ontology-6:cs_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
```

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```
ns#langString"
    >CS4</untitled-ontology-6:cs_code>
    <untitled-ontology-6:hasAirControllStaff>
        <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ATC4">
        <untitled-ontology-6:staff_name rdf:datatype=
            "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
        >Max</untitled-ontology-6:staff_name>
        <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
        >S107</untitled-ontology-6:staff_id>
        <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS4"/>
        <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
        <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#AirTrafficController"/>
        <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
        </untitled-ontology-6:GroundCrew>
    </untitled-ontology-6:hasAirControllStaff>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:ControlStation>
    </untitled-ontology-6:hasControlTower>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#International"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:Route>
    </untitled-ontology-6:hasRoute>
    <untitled-ontology-6:journeyViaAirports
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Rome"/>
    <untitled-ontology-6:journey_start rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Sudtyrol</untitled-ontology-6:journey_start>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    <untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >IUK1894</untitled-ontology-6:journey_id>
    <untitled-ontology-6:journey_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Oslo</untitled-ontology-6:journey_destination>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Journey"/>
    <untitled-ontology-6:journey_stops rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
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```
>1</untitled-ontology-6:journey_stops>
</untitled-ontology-6:InternationalJourney>
<untitled-ontology-6:Baggage
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ba3">
  <untitled-ontology-6:baggage_weight rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >10.9</untitled-ontology-6:baggage_weight>
    <untitled-ontology-6:baggage_type rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
      >bag</untitled-ontology-6:baggage_type>
      <untitled-ontology-6:baggage_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
        >BA3</untitled-ontology-6:baggage_id>
        <untitled-ontology-6:loadedInto>
          <untitled-ontology-6:Plane
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pl3">
            <untitled-ontology-6:loadedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE3"/>
              <untitled-ontology-6:plane_modelname rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
                >Booeing</untitled-ontology-6:plane_modelname>
                <untitled-ontology-6:plane_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
                  >PLA7862</untitled-ontology-6:plane_id>
                  <untitled-ontology-6:loadedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH3"/>
                    <untitled-ontology-6:loadedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS3"/>
                      <untitled-ontology-6:guidedBy>
                        <untitled-ontology-6:ControlStation
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS3">
                          <untitled-ontology-6:cs_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
                            >CS2</untitled-ontology-6:cs_code>
                            <untitled-ontology-6:hasAirControllStaff>
                              <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ATC3">
                                <untitled-ontology-6:staff_name rdf:datatype=
                                  "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
                                  >Alan</untitled-ontology-6:staff_name>
                                  <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
                                    >S9</untitled-ontology-6:staff_id>
                                    <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS3"/>
```

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```
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirTrafficController"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasAirControllStaff>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:ControlStation>
</untitled-ontology-6:guidedBy>
<untitled-ontology-6:onInternationalJourney>
<untitled-ontology-6:Journey
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IJ3">
<untitled-ontology-6:journey_stops rdf:datatype="http://www.w3.org/2001/XMLSchema#int">
>0</untitled-ontology-6:journey_stops>
<untitled-ontology-6:journey_start rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString">
>dublin</untitled-ontology-6:journey_start>
<untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString">
>MEA5432</untitled-ontology-6:journey_id>
<untitled-ontology-6:journey_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString">
>Vienna</untitled-ontology-6:journey_destination>
<untitled-ontology-6:hasRoute>
<untitled-ontology-6:Route
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IR3">
<untitled-ontology-6:route_startlocation rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString">
>Dublin</untitled-ontology-6:route_startlocation>
<untitled-ontology-6:route_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString">
>FRE1945</untitled-ontology-6:route_id>
<untitled-ontology-6:route_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString">
>Vienna</untitled-ontology-6:route_destination>
<untitled-ontology-6:landsOn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Vienna"/>
<untitled-ontology-6:hasExternalFactors
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#EF_NONE"/>
<untitled-ontology-6:hasControlTower>
<untitled-ontology-6:ControlStation
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS6">
```


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```
<untitled-ontology-6:cs_code rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>CS6</untitled-ontology-6:cs_code>
<untitled-ontology-6:hasAirControllStaff>
  <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ATC6">
  <untitled-ontology-6:staff_name rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Phil</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >S109</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS6"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirTrafficController"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasAirControllStaff>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:ControlStation>
</untitled-ontology-6:hasControlTower>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#International"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Route>
</untitled-ontology-6:hasRoute>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#InternationalJourney"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Journey>
</untitled-ontology-6:onInternationalJourney>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Plane>
</untitled-ontology-6:loadedInto>
<untitled-ontology-6:belongsTo>
  <untitled-ontology-6:Plane
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pa_Vassilev">
  <untitled-ontology-6:passenger_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
```

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```
ns#langString"
  >Vassilev</untitled-ontology-6:passenger_name>
  <untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca3">
  <untitled-ontology-6:cafe_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Cafe3</untitled-ontology-6:cafe_name>
    <untitled-ontology-6:cafe_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
      >CA3</untitled-ontology-6:cafe_id>
      <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
        <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Cafeteria"/>
        <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
      </untitled-ontology-6:Lounge>
    </untitled-ontology-6:passengerAccess>
  <untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:WashRoom
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR3">
  <untitled-ontology-6:washroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >W3</untitled-ontology-6:washroom_id>
    <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
      <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Lounge"/>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:WashRoom>
  </untitled-ontology-6:passengerAccess>
  <untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR3">
  <untitled-ontology-6:bedroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >BR3</untitled-ontology-6:bedroom_id>
    <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
      <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#BedRoom"/>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
```

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```
</untitled-ontology-6:Lounge>
</untitled-ontology-6:passengerAccess>
<untitled-ontology-6:passenger_age rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>50</untitled-ontology-6:passenger_age>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Passengers"/>
<untitled-ontology-6:passengerAccess>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca1">
<untitled-ontology-6:cafe_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Cafe1</untitled-ontology-6:cafe_name>
<untitled-ontology-6:cafe_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>CA1</untitled-ontology-6:cafe_id>
<untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Rome"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Cafeteria"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
</untitled-ontology-6:passengerAccess>
<untitled-ontology-6:passengerAccess>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR2">
<untitled-ontology-6:bedroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>BR2</untitled-ontology-6:bedroom_id>
<untitled-ontology-6:infrastructureOf>
<untitled-ontology-6:Airport
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Kiev">
<untitled-ontology-6:hasGroundCrew
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE1"/>
<untitled-ontology-6:airport_code rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Ki777</untitled-ontology-6:airport_code>
<untitled-ontology-6:hasGroundCrew
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS1"/>
<untitled-ontology-6:airport_country rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Ukraine</untitled-ontology-6:airport_country>
<untitled-ontology-6:airport_code rdf:datatype=
```

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"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Os123</untitled-ontology-6:airport_code>
<untitled-ontology-6:airport_city rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Kiev</untitled-ontology-6:airport_city>
<untitled-ontology-6:hasGroundCrew
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH1"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
<untitled-ontology-6:airport_name rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Kiev City Airport</untitled-ontology-6:airport_name>
</untitled-ontology-6:Airport>
</untitled-ontology-6:infrastructureOf>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#BedRoom"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
</untitled-ontology-6:passengerAccess>
<untitled-ontology-6:passengerAccess>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca2">
<untitled-ontology-6:cafe_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Cafe2</untitled-ontology-6:cafe_name>
<untitled-ontology-6:cafe_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>CA2</untitled-ontology-6:cafe_id>
<untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Kiev"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Cafeteria"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
</untitled-ontology-6:passengerAccess>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
<untitled-ontology-6:hasTicket>
<untitled-ontology-6:Ticket
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ti3">
<untitled-ontology-6:ticket_type>Economy</untitled-ontology-6:ticket_type>
<untitled-ontology-6:ticket_price
rdf:datatype="http://www.w3.org/2001/XMLSchema#decimal"
>60</untitled-ontology-6:ticket_price>
<untitled-ontology-6:ticket_number rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
```

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```
ns#langString"
    >129T</untitled-ontology-6:ticket_number>
    <untitled-ontology-6:ticket_departuretime rdf:datatype=
    "http://www.w3.org/2001/XMLSchema#integer">1400</untitled-ontology-
6:ticket_departuretime>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:Ticket>
</untitled-ontology-6:hasTicket>
    <untitled-ontology-6:onInternationalJourney
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IJ3"/>
    <untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:WashRoom
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR1">
    <untitled-ontology-6:washroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >W1</untitled-ontology-6:washroom_id>
    <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Rome"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Lounge"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:WashRoom>
</untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR1">
    <untitled-ontology-6:bedroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >BR1</untitled-ontology-6:bedroom_id>
    <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Rome"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#BedRoom"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:Lounge>
</untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:passengerAccess>
    <untitled-ontology-6:WashRoom
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR2">
    <untitled-ontology-6:washroom_id>W2</untitled-ontology-6:washroom_id>
    <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Kiev"/>
```

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```
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Lounge"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:WashRoom>
</untitled-ontology-6:passengerAccess>
</untitled-ontology-6:Plane>
</untitled-ontology-6:belongsTo>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Baggage>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR5">
  <untitled-ontology-6:bedroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >BR5</untitled-ontology-6:bedroom_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Reykjavik"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BedRoom"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
  <owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasControlTower">
    <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ControlStation"/>
    <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
  </owl:AsymmetricProperty>
  <owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#worksFor">
    <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
    <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airline"/>
    <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
  </owl:AsymmetricProperty>
<untitled-ontology-6:Baggage
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ba2">
  <untitled-ontology-6:baggage_weight
rdf:datatype="http://www.w3.org/2001/XMLSchema#decimal"
```

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```
>13.7</untitled-ontology-6:baggage_weight>
<untitled-ontology-6:baggage_type rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Suitcase</untitled-ontology-6:baggage_type>
<untitled-ontology-6:baggage_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>BA2</untitled-ontology-6:baggage_id>
<untitled-ontology-6:loadedInto>
<untitled-ontology-6:Plane
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#P12">
  <untitled-ontology-6:plane_modelname rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Mini</untitled-ontology-6:plane_modelname>
  <untitled-ontology-6:plane_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >PLA7856</untitled-ontology-6:plane_id>
  <untitled-ontology-6:loadedBy>
  <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH2">
  <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Jim</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >S11</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Kiev"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#BaggageHandlers"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:loadedBy>
<untitled-ontology-6:loadedBy>
<untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS2">
  <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Phoebe</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >S5</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
```

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rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Kiev"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportSecurity"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:GroundCrew>
</untitled-ontology-6:loadedBy>
<untitled-ontology-6:loadedBy>
    <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE2">
    <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >Lissav</untitled-ontology-6:staff_name>
    <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >S2</untitled-ontology-6:staff_id>
    <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Kiev"/>
    <untitled-ontology-6:maintainsAirport
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport_Kiev"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
    <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportEngineer"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
    </untitled-ontology-6:GroundCrew>
</untitled-ontology-6:loadedBy>
<untitled-ontology-6:guidedBy>
    <untitled-ontology-6:ControlStation
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS2">
    <untitled-ontology-6:cs_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >CS2</untitled-ontology-6:cs_code>
    <untitled-ontology-6:hasAirControllStaff>
    <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ATC2">
    <untitled-ontology-6:staff_name rdf:datatype="
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
    >Lewap</untitled-ontology-6:staff_name>
    <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
```


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>S8</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS2"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirTrafficController"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasAirControllStaff>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:ControlStation>
</untitled-ontology-6:guidedBy>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Plane>
</untitled-ontology-6:loadedInto>
<untitled-ontology-6:belongsTo>
  <untitled-ontology-6:Passengers
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pa_Vassil">
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca1"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca2"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR3"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR2"/>
  <untitled-ontology-6:hasTicket>
  <untitled-ontology-6:Ticket
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ti2">
  <untitled-ontology-6:ticket_type rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >First Class</untitled-ontology-6:ticket_type>
  <untitled-ontology-6:ticket_price
rdf:datatype="http://www.w3.org/2001/XMLSchema#decimal"
  >150</untitled-ontology-6:ticket_price>
  <untitled-ontology-6:ticket_number rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >147Q</untitled-ontology-6:ticket_number>
  <untitled-ontology-6:ticket_departuretime rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >1600</untitled-ontology-6:ticket_departuretime>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Ticket>
```

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</untitled-ontology-6:hasTicket>
<untitled-ontology-6:passenger_age rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>18</untitled-ontology-6:passenger_age>
<untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR1"/>
<untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca3"/>
<untitled-ontology-6:passenger_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Vassil</untitled-ontology-6:passenger_name>
<untitled-ontology-6:onInternationalJourney>
<untitled-ontology-6:Journey
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IJ2">
<untitled-ontology-6:journey_stops rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
>0</untitled-ontology-6:journey_stops>
<untitled-ontology-6:journey_start rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Kiev</untitled-ontology-6:journey_start>
<untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>GRT1479</untitled-ontology-6:journey_id>
<untitled-ontology-6:journey_destination rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Oslo</untitled-ontology-6:journey_destination>
<untitled-ontology-6:hasRoute>
<untitled-ontology-6:Route
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#IR2">
<untitled-ontology-6:route_startlocation rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Kiev</untitled-ontology-6:route_startlocation>
<untitled-ontology-6:route_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>SUM7617</untitled-ontology-6:route_id>
<untitled-ontology-6:route_destination rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Reykjavik</untitled-ontology-6:route_destination>
<untitled-ontology-6:landsOn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Kiev"/>
<untitled-ontology-6:hasExternalFactors
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#EF_Lightning"/>
<untitled-ontology-6:hasControlTower>
```

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```
<untitled-ontology-6:ControlStation
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS5">
  <untitled-ontology-6:cs_code rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >CS5</untitled-ontology-6:cs_code>
  <untitled-ontology-6:hasAirControllStaff>
    <untitled-ontology-6:GroundCrew
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ATC5">
  <untitled-ontology-6:staff_name rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Stuart</untitled-ontology-6:staff_name>
  <untitled-ontology-6:staff_id rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >S108</untitled-ontology-6:staff_id>
  <untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS5"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Crew"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirTrafficController"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:GroundCrew>
</untitled-ontology-6:hasAirControllStaff>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:ControlStation>
</untitled-ontology-6:hasControlTower>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#International"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Route>
</untitled-ontology-6:hasRoute>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#InternationalJourney"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Journey>
</untitled-ontology-6:onInternationalJourney>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR2"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR3"/>
  <untitled-ontology-6:passengerAccess
```

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```
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR1"/>
  </untitled-ontology-6:Passengers>
  </untitled-ontology-6:belongsTo>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Baggage>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR4">
  <untitled-ontology-6:bedroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >BR4</untitled-ontology-6:bedroom_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#BedRoom"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
<untitled-ontology-6:Baggage
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ba1">
  <untitled-ontology-6:baggage_weight
rdf:datatype="http://www.w3.org/2001/XMLSchema#decimal"
  >14.5</untitled-ontology-6:baggage_weight>
  <untitled-ontology-6:baggage_type rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >bag</untitled-ontology-6:baggage_type>
  <untitled-ontology-6:baggage_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >BA1</untitled-ontology-6:baggage_id>
  <untitled-ontology-6:loadedInto>
  <untitled-ontology-6:Plane
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#P11">
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  <untitled-ontology-6:loadedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AS1"/>
  <untitled-ontology-6:onDomesticJourney>
  <untitled-ontology-6:Journey
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DJ2">
  <untitled-ontology-6:journey_stops rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
  >0</untitled-ontology-6:journey_stops>
  <untitled-ontology-6:journey_start rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Linz</untitled-ontology-6:journey_start>
  <untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >HET7862</untitled-ontology-6:journey_id>
```

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```
<untitled-ontology-6:journey_destination rdf:datatype=
"http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
>Vienna</untitled-ontology-6:journey_destination>
<untitled-ontology-6:hasRoute>
  <untitled-ontology-6:Route
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DR3">
  <untitled-ontology-6:route_startlocation rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Belfast</untitled-ontology-6:route_startlocation>
  <untitled-ontology-6:route_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >IN1345</untitled-ontology-6:route_id>
  <untitled-ontology-6:route_destination rdf:datatype=
    "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Dublin</untitled-ontology-6:route_destination>
  <untitled-ontology-6:landsOn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Dublin"/>
  <untitled-ontology-6:hasExternalFactors
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#EF_Lightning"/>
  <untitled-ontology-6:hasControlTower
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS3"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Domestic"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Route>
</untitled-ontology-6:hasRoute>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#DomesticJourney"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Journey>
</untitled-ontology-6:onDomesticJourney>
  <untitled-ontology-6:plane_modelname rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Airbus</untitled-ontology-6:plane_modelname>
  <untitled-ontology-6:guidedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS1"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Passengers"/>
  <untitled-ontology-6:loadedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BH1"/>
  <untitled-ontology-6:plane_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >PLA1234</untitled-ontology-6:plane_id>
```

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```
<untitled-ontology-6:loadedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AE1"/>
</untitled-ontology-6:Plane>
</untitled-ontology-6:loadedInto>
<untitled-ontology-6:belongsTo>
<untitled-ontology-6:Plane
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pa_John">
  <untitled-ontology-6:passenger_age rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >35</untitled-ontology-6:passenger_age>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR1"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR2"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  <untitled-ontology-6:passenger_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >John</untitled-ontology-6:passenger_name>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca1"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR1"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR2"/>
  <untitled-ontology-6:onDomesticJourney
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DJ2"/>
  <untitled-ontology-6:guidedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS3"/>
  <untitled-ontology-6:guidedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS1"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BR3"/>
  <untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR3"/>
  <untitled-ontology-6:hasTicket>
  <untitled-ontology-6:Ticket
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ti1">
    <untitled-ontology-6:ticket_type rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Business</untitled-ontology-6:ticket_type>
    <untitled-ontology-6:ticket_price
rdf:datatype="http://www.w3.org/2001/XMLSchema#decimal"
    >123.25</untitled-ontology-6:ticket_price>
    <untitled-ontology-6:ticket_number rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
```

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```
>123B</untitled-ontology-6:ticket_number>
<untitled-ontology-6:ticket_departuretime rdf:datatype=
"http://www.w3.org/2001/XMLSchema#integer">2100</untitled-ontology-
6:ticket_departuretime>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Ticket>
</untitled-ontology-6:hasTicket>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Passengers"/>
<untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca2"/>
<untitled-ontology-6:passengerAccess
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca3"/>
<untitled-ontology-6:guidedBy
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS2"/>
</untitled-ontology-6:Plane>
</untitled-ontology-6:belongsTo>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Baggage>
<untitled-ontology-6:ExternalFactors
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#EF_Snowstorm">
<untitled-ontology-6:EF_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Snowstorm</untitled-ontology-6:EF_name>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:ExternalFactors>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#onInternationalJourney">
<rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#InternationalJourney"/>
<rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Plane"/>
<rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Passengers"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<swrl:Imp>
<swrl:head>
<swrl:AtomList>
<rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
<rdf:first>
<swrl:IndividualPropertyAtom>
```

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```
<swrl:argument2>
  <swrl:Variable rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
</swrl:argument2>
  <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
  <swrl:propertyPredicate>
    <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#passengerAccess">
      <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Lounge"/>
      <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
      <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
    </owl:AsymmetricProperty>
  </swrl:propertyPredicate>
</swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</swrl:head>
<swrl:body>
  <swrl:AtomList>
    <rdf:rest>
      <swrl:AtomList>
        <rdf:rest>
          <swrl:AtomList>
            <rdf:rest>
              <swrl:AtomList>
                <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
                <rdf:first>
                  <swrl:IndividualPropertyAtom>
                    <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
                      <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
                    <swrl:propertyPredicate>
                      <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasTicket">
                        <rdfs:range
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
                        <rdfs:domain
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
```


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```
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
</swrl:propertyPredicate>
</swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Lounge"/>
    </swrl:ClassAtom>
  </rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
    </swrl:ClassAtom>
  </rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6/x"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
    </swrl:ClassAtom>
  </rdf:first>
</swrl:AtomList>
</swrl:body>
<rdfs:label>S6</rdfs:label>
<rdfs:comment>A passenger with a valid ticket has access to Lounge</rdfs:comment>
<swrla:isRuleEnabled rdf:datatype="http://www.w3.org/2001/XMLSchema#boolean"
>true</swrla:isRuleEnabled>
</swrl:Imp>
```

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```
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasPilot">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pilot"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airline"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<swrl:Imp>
  <swrl:head>
    <swrl:AtomList>
      <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
      <rdf:first>
        <swrl:IndividualPropertyAtom>
          <swrl:argument2 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
          <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
          <swrl:propertyPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#worksTogether"/>
        </swrl:IndividualPropertyAtom>
      </rdf:first>
    </swrl:AtomList>
  </swrl:head>
  <swrl:body>
    <swrl:AtomList>
      <rdf:rest>
        <swrl:AtomList>
          <rdf:rest>
            <swrl:AtomList>
              <rdf:rest>
                <swrl:AtomList>
                  <rdf:rest>
                    <swrl:AtomList>
                      <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
                      <rdf:first>
                        <swrl:IndividualPropertyAtom>
                          <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
                          <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
                        </swrl:IndividualPropertyAtom>
                      </rdf:first>
                    </swrl:AtomList>
                  </rdf:rest>
                </swrl:AtomList>
              </rdf:rest>
            </swrl:AtomList>
          </rdf:rest>
        </swrl:AtomList>
      </rdf:rest>
    </swrl:body>
  </swrl:Imp>
```

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```

    <swrl:propertyPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ServesIn"/>
    </swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:IndividualPropertyAtom>
        <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
        <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
        <swrl:propertyPredicate>
            <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Flies">
                <rdfs:range
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
                <rdfs:domain
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pilot"/>
                <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
                <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
            </owl:AsymmetricProperty>
        </swrl:propertyPredicate>
    </swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:ClassAtom>
        <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
        <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
        </swrl:ClassAtom>
    </rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:ClassAtom>
        <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
        <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FlightAttendants"/>

```

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```
</swrl:ClassAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pilot"/>
    </swrl:ClassAtom>
    </rdf:first>
    </swrl:AtomList>
  </swrl:body>
  <rdfs:label>S5</rdfs:label>
  <rdfs:comment>Pilot and flightattendants work together in a flight</rdfs:comment>
  <swrla:isRuleEnabled rdf:datatype="http://www.w3.org/2001/XMLSchema#boolean"
>true</swrla:isRuleEnabled>
</swrl:Imp>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#loadedBy">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#BaggageHandlers"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#maintainsAirport">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirportEngineer"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#consistsOf">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Airport"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
```

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```
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<untitled-ontology-6:WashRoom
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR4">
  <untitled-ontology-6:washroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >W4</untitled-ontology-6:washroom_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Lounge"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:WashRoom>
<untitled-ontology-6:WashRoom
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR5">
  <untitled-ontology-6:washroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >W5</untitled-ontology-6:washroom_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Reykjavik"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Lounge"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:WashRoom>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#landsOn">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Route"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<untitled-ontology-6:WashRoom
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#WR6">
  <untitled-ontology-6:washroom_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >WR6</untitled-ontology-6:washroom_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Vienna"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Lounge"/>
```

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```
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:WashRoom>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca6">
  <untitled-ontology-6:cafe_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Cafe6</untitled-ontology-6:cafe_name>
  <untitled-ontology-6:cafe_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >CA6</untitled-ontology-6:cafe_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Vienna"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Cafeteria"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca5">
  <untitled-ontology-6:cafe_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >Cafe5</untitled-ontology-6:cafe_name>
  <untitled-ontology-6:cafe_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
  >CA5</untitled-ontology-6:cafe_id>
  <untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Reykjavik"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Cafeteria"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
<swrl:Imp>
  <swrl:head>
    <swrl:AtomList>
      <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
      <rdf:first>
        <swrl:IndividualPropertyAtom>
          <swrl:argument2 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6/z"/>
          <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6/x"/>
          <swrl:propertyPredicate>
            <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#guidedBy">
```

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```
<rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ControlStation"/>
<rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
</swrl:propertyPredicate>
</swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</swrl:head>
<swrl:body>
<swrl:AtomList>
<rdf:rest>
<swrl:AtomList>
<rdf:rest>
<swrl:AtomList>
<rdf:rest>
<swrl:AtomList>
<rdf:rest>
<swrl:AtomList>
<rdf:rest>
<swrl:AtomList>
<rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
<rdf:first>
<swrl:IndividualPropertyAtom>
<swrl:argument2>
<swrl:Variable
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/w"/>
</swrl:argument2>
<swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
<swrl:propertyPredicate>
<owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasRoute">
<rdfs:range
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
<rdfs:domain
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
```

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```

        </swrl:propertyPredicate>
    </swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:IndividualPropertyAtom>
        <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
        <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
        <swrl:propertyPredicate>
            <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#onDomesticJourney">
                <rdfs:range
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DomesticJourney"/>
                <rdfs:domain
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
                <rdfs:domain
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
                <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
                <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
            </owl:AsymmetricProperty>
        </swrl:propertyPredicate>
    </swrl:IndividualPropertyAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:ClassAtom>
        <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
        <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ControlStation"/>
    </swrl:ClassAtom>
</rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:ClassAtom>
        <swrl:argument1
```


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```
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
    </swrl:ClassAtom>
    </rdf:first>
    </swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:ClassAtom>
    <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
    </swrl:ClassAtom>
    </rdf:first>
    </swrl:AtomList>
</rdf:rest>
<rdf:first>
    <swrl:ClassAtom>
    <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/w"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Route"/>
    </swrl:ClassAtom>
    </rdf:first>
    </swrl:AtomList>
</swrl:body>
<rdfs:label>S4</rdfs:label>
<rdfs:comment>Every plane in a journey is guided by a control tower guiding it</rdfs:comment>
<swrla:isRuleEnabled rdf:datatype="http://www.w3.org/2001/XMLSchema#boolean"
>true</swrla:isRuleEnabled>
</swrl:Imp>
<swrl:Imp>
    <swrl:head>
    <swrl:AtomList>
    <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
    <rdf:first>
    <swrl:ClassAtom>
    <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
    </swrl:ClassAtom>
```

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```
</rdf:first>
</swrl:AtomList>
</swrl:head>
<swrl:body>
  <swrl:AtomList>
    <rdf:rest>
      <swrl:AtomList>
        <rdf:rest>
          <swrl:AtomList>
            <rdf:rest>
              <swrl:AtomList>
                <rdf:rest rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#nil"/>
                <rdf:first>
                  <swrl:IndividualPropertyAtom>
                    <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/x"/>
                    <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
                    <swrl:propertyPredicate>
                      <owl:AsymmetricProperty
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#ticketOf">
                        <rdfs:range
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Journey"/>
                        <rdfs:domain
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
                        <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
                        <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
                      </owl:AsymmetricProperty>
                    </swrl:propertyPredicate>
                  </swrl:IndividualPropertyAtom>
                </rdf:first>
              </swrl:AtomList>
            </rdf:rest>
          <rdf:first>
            <swrl:IndividualPropertyAtom>
              <swrl:argument2
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
              <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
              <swrl:propertyPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#hasTicket"/>
                </swrl:IndividualPropertyAtom>
              </rdf:first>
```

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```
</swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/y"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
    </swrl:ClassAtom>
  </rdf:first>
</swrl:AtomList>
</rdf:rest>
<rdf:first>
  <swrl:ClassAtom>
    <swrl:argument1 rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6/z"/>
    <swrl:classPredicate
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ticket"/>
    </swrl:ClassAtom>
  </rdf:first>
</swrl:AtomList>
</swrl:body>
<rdfs:label>S1</rdfs:label>
<rdfs:comment>Every passenger with a ticket is on a journey</rdfs:comment>
<swrla:isRuleEnabled rdf:datatype="http://www.w3.org/2001/XMLSchema#boolean"
>true</swrla:isRuleEnabled>
</swrl:Imp>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#boardsIn">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Plane"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Passengers"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<untitled-ontology-6:Lounge
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Ca4">
  <untitled-ontology-6:cafe_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >Cafe4</untitled-ontology-6:cafe_name>
  <untitled-ontology-6:cafe_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
  >CA4</untitled-ontology-6:cafe_id>
```

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```
<untitled-ontology-6:infrastructureOf
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Cafeteria"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Lounge>
<untitled-ontology-6:Journey
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DJ3">
  <untitled-ontology-6:hasRoute>
    <untitled-ontology-6:Route
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#DR2">
      <untitled-ontology-6:route_startlocation rdf:datatype=
        "http://www.w3.org/1999/02/22-rdf-syntax-ns#langString"
      >Crimea</untitled-ontology-6:route_startlocation>
      <untitled-ontology-6:route_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
      >IN1345</untitled-ontology-6:route_id>
      <untitled-ontology-6:route_destination rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
      >Kiev</untitled-ontology-6:route_destination>
      <untitled-ontology-6:landsOn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Kiev"/>
        <untitled-ontology-6:hasExternalFactors
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#EF_NONE"/>
        <untitled-ontology-6:hasControlTower
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#CS2"/>
        <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Domestic"/>
        <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
      </untitled-ontology-6:Route>
    </untitled-ontology-6:hasRoute>
    <untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >California</untitled-ontology-6:journey_id>
    <untitled-ontology-6:journeyViaAirports
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport_Oslo"/>
      <untitled-ontology-6:journey_start rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
      >New York</untitled-ontology-6:journey_start>
      <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#DomesticJourney"/>
      <untitled-ontology-6:journey_stops rdf:datatype="http://www.w3.org/2001/XMLSchema#int"
```

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```
>1</untitled-ontology-6:journey_stops>
<untitled-ontology-6:hasExternalFactors>
  <untitled-ontology-6:ExternalFactors
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#EF_Flooding">
  <untitled-ontology-6:EF_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Flooding</untitled-ontology-6:EF_name>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:ExternalFactors>
</untitled-ontology-6:hasExternalFactors>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  <untitled-ontology-6:journey_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >POP7651</untitled-ontology-6:journey_id>
</untitled-ontology-6:Journey>
<owl:AsymmetricProperty rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#infrastructureOf">
  <rdfs:range rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airport"/>
  <rdfs:domain rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Lounge"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#FunctionalProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#ObjectProperty"/>
</owl:AsymmetricProperty>
<untitled-ontology-6:Airline
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airline_BritishAirways">
  <untitled-ontology-6:airline_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >British Airways</untitled-ontology-6:airline_name>
  <untitled-ontology-6:airline_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >BA131</untitled-ontology-6:airline_code>
  <untitled-ontology-6:hasPilot>
    <untitled-ontology-6:Pilot
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pi1">
      <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
        >Avdol</untitled-ontology-6:staff_name>
      <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
        >S16</untitled-ontology-6:staff_id>
      <untitled-ontology-6:worksTogether>
        <untitled-ontology-6:FlightAttendants
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA1">
```

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```
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Ayirp</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>S13</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksTogether
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pi1"/>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airline_BritishAirways"/>
<untitled-ontology-6:ServesIn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#P11"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-
ontology-6#AirCrew"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:FlightAttendants>
</untitled-ontology-6:worksTogether>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airline_BritishAirways"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirCrew"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Pilot>
</untitled-ontology-6:hasPilot>
<untitled-ontology-6:hasFlightAttendant
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA1"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Airline>
<untitled-ontology-6:FlightAttendants
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA2">
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>S14</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Ben</untitled-ontology-6:staff_name>
<untitled-ontology-6:worksTogether>
<untitled-ontology-6:Pilot
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pi2">
```

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```
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Joseph</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>S17</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksTogether
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA2"/>
<untitled-ontology-6:worksFor>
<untitled-ontology-6:Airline
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airline_JetAirways">
<untitled-ontology-6:airline_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>JetAirways</untitled-ontology-6:airline_name>
<untitled-ontology-6:airline_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>JA141</untitled-ontology-6:airline_code>
<untitled-ontology-6:hasPilot
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pi2"/>
<untitled-ontology-6:hasFlightAttendant
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA2"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Airline>
</untitled-ontology-6:worksFor>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirCrew"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Pilot>
</untitled-ontology-6:worksTogether>
<untitled-ontology-6:worksFor
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airline_JetAirways"/>
<untitled-ontology-6:ServesIn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#PI2"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Crew"/>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirCrew"/>
<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:FlightAttendants>
<untitled-ontology-6:FlightAttendants
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA3">
```

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```
<untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>Samuel</untitled-ontology-6:staff_name>
<untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
>S15</untitled-ontology-6:staff_id>
<untitled-ontology-6:worksTogether>
  <untitled-ontology-6:Pilot
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pi3">
    <untitled-ontology-6:staff_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >Jotaro</untitled-ontology-6:staff_name>
    <untitled-ontology-6:staff_id rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >S18</untitled-ontology-6:staff_id>
    <untitled-ontology-6:worksTogether
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA3"/>
    <untitled-ontology-6:worksFor>
    <untitled-ontology-6:Airline
rdf:about="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Airline_QatarAirways">
    <untitled-ontology-6:airline_name rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
ns#langString"
    >QatarAirways</untitled-ontology-6:airline_name>
    <untitled-ontology-6:airline_code rdf:datatype="http://www.w3.org/1999/02/22-rdf-syntax-
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    >QA151</untitled-ontology-6:airline_code>
    <untitled-ontology-6:hasPilot
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    <untitled-ontology-6:hasFlightAttendant
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#FA3"/>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
  </untitled-ontology-6:Airline>
</untitled-ontology-6:worksFor>
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Crew"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#AirCrew"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
</untitled-ontology-6:Pilot>
</untitled-ontology-6:worksTogether>
<untitled-ontology-6:ServesIn
rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#Pi3"/>
  <rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-
6#Crew"/>
```


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```
<rdf:type rdf:resource="http://www.semanticweb.org/indra/ontologies/2023/3/untitled-ontology-6#AirCrew"/>
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<rdf:type rdf:resource="http://www.w3.org/2002/07/owl#NamedIndividual"/>
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</rdf:RDF>
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