

# Knowledge Base Management Project Ideas

---

## ❖ General Instructions and Grading Rubric:

- Each team must work on one of the project ideas listed below and implement it using Protégé.
- The ontology must include the following components, and each part will be evaluated based on the rubric below:
  - At least 7 classes (including subclasses) **(2 marks)**
  - At least 5 object properties **(2 marks)**
  - At least 10 data properties **(2 marks)**
  - At least 10 individuals **(2 marks)**
  - Apply conditions or cardinality restrictions **(2 marks)**
  - Use of the reasoner (run any DL Query) **(2 marks)**
  - Write and execute SPARQL queries (at least 2) **(2 marks)**
  - • Use of different Functional, Transitive, Symmetric Properties **(2 marks)**
  - Ontology Visualization **(2 marks)**
  - Question for each student **(2 marks)**

### **1. Library System Ontology**

- Classes like: Book, Person (Reader, Librarian)
- SPARQL: Books by specific authors, overdue borrowings

### **2. Restaurant Reservation System Ontology**

- Classes like: Person (Customer, Chef), Reservation
- SPARQL: Top-rated dishes, reservations by date

### **3. Online Shopping System Ontology**

- Classes like: Product, Customer, Order
- SPARQL: Orders above 1000 EGP, products in a specific category

### **4. Hotel Booking System Ontology**

- Classes like: Guest, Room, Hotel
- SPARQL: Find available rooms, list services by hotel

### **5. Airline Reservation System Ontology**

- Classes like: Person (Passenger), Flight, Ticket
- SPARQL: Flights over X hours, expensive tickets

### **6. Car Rental Service Ontology**

- Classes like: Car, Customer, Rental
- SPARQL: Customers with more than 1 rental, cars by branch

### **7. Museum Management System Ontology**

- Classes like: Guide, Visitor, Tour
- SPARQL: Exhibits in section, visitors per guide