Assigned: 24 Oct 2024 Due: 31 Oct 2024	KRR Lab Assignment Description Logics and Ontology Design

Exercise 1

Express the following sentences in Description Logics, using:
- The *individual* names **bonnie**, and **clyde**,
- The *concept* names **Person, Honest** and **Crime**
- The *roles* names **reports** (a person reports a crime)**, commits** (a person commits a crime)**, suspects** (a person suspects a person)**,** and **knows** (a person knows a person).

Sentences
- No honest man has committed a crime.
- Bonnie does report Clyde.
- Clyde has committed at least 10 crimes.
- Everybody who knows a suspect (in a given crime) is also a suspect (in that crime).
- Only those who are honest suspects someone.
- If one suspects someone, one reports them.
- Nobody suspects Bonnie.
- Everyone that knows someone that commits a crime also commits a crime.

Exercise 2

Select three real restaurant reviews from any review platform (e.g. Google Reviews), of about 100-200 words each.
Identify and categorize key concepts mentioned in the reviews into an ontology with:
- Classes (e.g., Food, Service, Ambiance, Staff)
- Data Properties (e.g., temperature, speed, friendliness)
- Object Properties (e.g., serves, employs, contains)

Provide in your written report:
1. The three selected reviews
2. A diagram modeling your ontology concepts and the relations between them + an OWL file containing a model of your ontology built using Protege
3. An analysis detailing:
   - Which **kind** of natural language expressions **can be captured** and which **are failed to be captured** by your ontology
   - **Challenges** you encountered in mapping **informal language** to **structured relationships**