

ASSIGNMENT FOR UNIT 1

MODELING KNOWLEDGE PATTERNS AND DEVELOPING AN ONTOLOGY NETWORK

Part I: The objective is to model a **collection of situations**¹ using the n-ary relation pattern.

Situations are given as sentences in natural language. Students should generalize the situations (if necessary) and formalize such general situations using the following ontology editors (according to what is **specified in the assignment file**²):

- WebProtégé (<https://webprotege.stanford.edu/>)
- WebVOWL (<http://editor.visualdataweb.org/>)

Students should provide the following outcomes for each situation:

- The functional representation of the situation.
- The graphical representation of the model (concept and relations) in the corresponding editor (WebProtégé or WebVOWL).
- The OWL code from the corresponding ontology editor (WebProtégé or WebVOWL).

Part II: The objective is to **develop an ontology network** (implemented in OWL) in a particular **domain**³.

This part is divided into the following tasks:

- **Task A:** To develop an ontology (from the scratch) with at least 30 elements (concepts and properties) in the assigned domain.
 - This task should be performed with two different editors: WebProtégé and WebVOWL.
 - Students should provide the following outcomes:
 - The graphical representation of the model in WebProtégé and WebVOWL.
 - The OWL code from WebProtégé and WebVOWL.
- **Task B:** To apply the **reuse approach** for developing an ontology network in the same specific domain as Task A.

Students have to use the ontology developed in Task A and update it with other existing ontologies and/or ontology design patterns in the similar or related domains. The increase in number of elements (concepts and properties) in this ontology network should be considerable with respect to the ontology developed in Task A.

- This task has to be performed using Protégé Desktop (<https://protege.stanford.edu/products.php#desktop-protege>).
- Students have to provide the OWL code of the ontology network from Protégé Desktop.

¹ See "SituationsAssignedToGroups" file

² See "EditorsMappedWithSituations" file

³ See "DomainAssignedToGroups" file

GENERAL INSTRUCTIONS

- This assignment should be performed in groups composed of 4 or 5 students.
- Only one member of each group should deliver the assignment.
- The assignment delivery should include
 - a PDF file containing the document that explains the work done in the assignment (both parts).
 - In order to describe Part I, the document should include functional representation, graphical representation and OWL Code for all the n-ary relation patterns modeled.
 - In order to describe Part II, the list of reused resources explaining how they were found and why they were selected. In addition, the document should include the main design decisions taken during the ontology development as well as any comment or consideration you consider useful.
 - a set of files or links that contains the patterns (Part I) and the ontologies (Part II).
- All the students have to fill out a questionnaire related to the assignment.
 - A task in Moodle will be available for filling out the questionnaire.