Debugging Experiment

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Contents

- Debugging experiment
  - Motivation
  - How to make an experiment where we look for a validation of a set of hypotheses
  - Experiment setup

Motivation

- Current ontology debugging tools are still hard to use for DL newbies
  - Explanations are hard to understand
  - Debugging takes too much time in large ontologies (hours in some cases)
  - Lots of dependencies between errors that are not clearly seen.
- We have proposed
  - A set of guidelines to help users in the ontology debugging (hence in the ontology development) process
  - Focused on common anti-patterns from a set of ontologies created by domain experts.
  - With a proposed workflow of debugging activities to improve the debugging process

Motivation (II)

- Work hypotheses
  - The use of our guidelines, in combination with existing debugging tools, reduces the time needed to debug an ontology
  - The use of our guidelines will still allow debugging the ontology in cases where the computation of justifications takes too much time
  - The results obtained will be of better quality
    - Natural language definitions will be more precise and will align better with formal definitions
    - The intended meaning of the final debugged ontology will still remain the same as the one intended by the user

Hypotheses' Validation and Experiment Setup

- Analysis of pre-existing knowledge
  - Questionnaire 1 that you have already filled in
  - Objective 1: detect the pre-existing knowledge, so as to characterise the types of users that will perform the validation.
  - Objective 2: divide into two groups of similar expertise, so that comparisons can be done in similar conditions between people using the new tools/guidelines and people not using them.
- Generally speaking, this is the result obtained
  - Good knowledge of software debugging
  - Basic knowledge of the Protégé tool
  - Very basic knowledge of DL and OWL
  - Little interest in Geography

Hypotheses' Validation and Experiment Setup

- Creation of two groups
  - Group 1 (use of existing ontology debugging tools only)
    - Luis Pelayo, Yolanda Sanz, Jaime Fernández, Pedro Luis, María Teresa Trigo, Farooque, Umer, Manuel Vargas
  - Group 2 (use of existing tools and of our guidelines)
    - Aday Francisco, Pablo Chico, Alberto Moreno, Alberto Arteta, José María Larrea, Eldora, José Alonso Gaytán
- Group 1 will not be able to attend the second part of this session, nor will they have access to our guidelines.

Hypotheses' Validation and Experiment Setup

- Quantitative measures
  - Time to perform specific tasks
  - Correctness and completeness of the proposed solutions
- Qualitative measures
  - Perceived amount of correctness

Hypotheses' Validation and Experiment Setup

- Tasks to be done:
  - Phase I (2 weeks). Understanding of the ontology without the need to use reasoners
    - Group 1. Without guidelines
    - Group 2. With guidelines
  - Phase II (2 weeks later). Solving problems in the ontology using all tools available.
    - Group 1.Without guidelines
    - Group 2. With guidelines

- Questionnaires will be made available in due time in the wiki.

- **The student providing the best comments (as a combination of precision in the answers, and as additional comments sent to us by e-mail) will be included as an author of the paper (to be submitted to the International Semantic Web Conference 2009).**