The goal behind $S^2N$ is to create a Social Network (SN) portal that utilises Semantic Web technologies.

This assignment is graded out of 100 (however it is equivalent to 40% of the exam grade). The assignment can be performed in groups of 2 to 3 students, however the role and deliverables done by each student have to be clearly delineated and agreed upon. Each group is to send an email to me stating who its members are and describing the role and responsibilities of each member.

**Deadline: Friday 20th January 2012**

1. Introduction

With the advent of Web 2.0, SNs have evolved and became a way through which people moved their personal-social sphere onto the Web.

"A blog post is the new public ego-centric diary entry, writing on someone’s virtual ‘wall’ is the new email, and planning an event can be done within minutes, including sending all invitees their invitations."

[Rowe & Ciravegna 2008]

In any online SN, members need to register and fill in their profile details. Members can then make use of the various features, to share their statuses, thoughts, pictures, friends’ details and any other information item that they post on their page.

In the Semantic Web the user’s social dimension was also given its due importance through the development of various ontologies such as FOAF (Friend-Of-A-Friend) [1] and SIOC (Semantically Interlinked Online Communities) [3,4]. The aim of the former was to create machine-readable pages describing people, the links between them and the things they create and do. In other words, a person can create a profile describing herself, the people she knows, her interests and other things as defined in the FOAF ontology specification [2]. On the other hand through the SIOC project [3,4], one can interlink online communities, such as weblogs, wikis, message boards, together. SIOC is an attempt to describe the information that communities have about their structure and contents, and to find related information and new connections between content items and other community objects [5].

The idea behind $S^2N$ is that of creating a semantic social network which apart from allowing users to register, also allows them to share information related to i) their research, by sharing read papers or own publications, ii) their lifestyle, for example information about movies they’ve seen or still want to see.

2. User Profile Page

The user’s profile is an important component in every SN. In $S^2N$ this information can be captured through FOAF. Details such as given name, family name, email, birthday, location (take a look at the GEO ontology [7]), interests, image and webpages could be described. Other information that one can capture through FOAF, can be found in [2].

In $S^2N$ new users need to be able to either create a FOAF profile by manually entering relevant information or else by registering through their facebook account [6]. Various libraries such as [8] can be used to implement this feature.

Whenever a user adds a friend or some new interest to his $S^2N$, her FOAF profile has to be updated, and all the information pertaining to the user needs to be appropriately displayed on member’s home page.
3. Favourites Pages

In S²N users have different pages (similar to the pages on Facebook) through which they can share information with their friends. These in turn, are able to provide feedback, via the like/dislike buttons or by posting a comment in relation to that shared item.

S²N should provide at least two shareable pages:

i) Research page: which allows for sharing of read papers or own publications,

ii) Lifestyle page: which could for example allow for sharing of information about movies the users have seen or still want to see

Research Page

Through this page users can share papers that they find interesting for their research work. The information about each paper should include amongst other things: topic, authors, important references, title, year of publication, conference submitted to etc. The user needs to be able to add new papers (when she is logged in) and to search for papers, by title, topic and by author. A link to the paper has to be provided (if it is online), as well as the possibility to view its bibtex format (check example below), thus making the generation of references easier.

Information that indicates that someone (from her friends) likes a particular paper needs to also be allowed. An ontology for the domain of research papers needs to be designed.

Example:

@book{breslin_social_2009,address = {Heidelberg}, author = {John Breslin and Alexandre Passant and Stefan Decker}, publisher = {{Springer-Verlag}}, title = {The Social Semantic Web}, year = 2009, keywords = {semanticweb social sweo}, added-at = {2009-03-24T09:43:34.000+0100}, isbn = {978-3-642-01171-9}, biburl={http://www.bibsonomy.org/bibtex/2837508c64343072cf58389163b64efc9/ivan_herman}, abstract = {The Social Web (including services such as {MySpace,} Flickr, last.fm, and {WordPress}) has captured the attention of millions of users as well as billions of dollars in investment and acquisition. Social websites, evolving around the connections between people and their objects of interest.}}

For ideas about how this feature could be designed check [10,11].

Lifestyle Page

On this page the users are allowed to share information about light stuff that they like. For example, this page could be about movies and/or TV series. Similarly to the Research page, users need to be able to add information about the movies that they saw or still have to see. This information could be extracted from specialised sites such as IMDB [12] and could include: title of the movie, director, list of actors, date of release, rating and synopsis, amongst other things. Various services or libraries can be used to extract this information automatically [13,14].
Friends are allowed to give feedback through comments and the like/dislike buttons, for each movie entry. It is expected that an ontology related to the movies’ domain is developed and used. Searching by title, actor and director has to be provided.

Optional

One can make S2N more interesting by considering possible extensions to the FOAF ontology such as extending the different types of relationships between known people, allowing for descriptions of places that the users has visited and more (see [9] for examples of how this ontology have been extended).

Deliverables

i. Artefact should include:
   a. S2N portal with the requested functionality
   b. Ontologies: implementation (use RDF/S as the underlying language, protégé can be used)
   c. Querying (searching) facilities (use SPARQL)
   d. Storage of RDF triples: MySQL can be used

ii. Documentation must be clearly written, marked up (figures and tables) and checked for spelling and grammar. It should include:
   a. descriptions of the designed ontologies
   b. design and description of the artefact; third party libraries used and any other aspect which is deemed relevant.
   c. testing performed

The report must not exceed 20 A4 pages (excluding diagrams).

iii. Apart from a hard copy of the documentation a CD with both the artefact and the report have to be submitted.

iv. Each group will be allotted a 10-minute slot to demonstrate their working artefact.

REFERENCES

[8] https://github.com/fernandezpablo85/scribe-java
[10] www.mendeley.com