**SOR – Social recommender**

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1. **Start to know SOR.**

Social recommender is an application that is able to recommend certain people/events/things of interest according to a given FOAF graph build with information from a social network( for now Facebook, but later on it has the possibility to be extended with more information from other social networks like Linked in, Twitter, etc...) and external resources. The information from the social networks are about the client's features, interests, likes/dislikes, events/things, heard/liked music, artists, profession, knowledge, places he/she visited, played games, persons he/she knows and interacts with.

1. **Objectives and constraints.**

Create an application that recommends (random or on request) to user certain people/events/things of interesting according to social networks(Facebook).

Application constraints:

* The application should be a responsive application
* Service oriented application
* Restful API
* An application built on the existing social and semantic Web technologies
* The code-source and specific content must be available under the terms of the open source licenses
* To be discussed

1. **Register**

First step to create an user account is to **register**. The registration requires filling in a form with personal information about the client so that when the user first checks the application, some preferences would already be displayed on the start page.

Note: The Username and password are unique for every user.

1. **Sign in**

Using the information from the registration step, like username and a password, the user can sign in into a defined account already containing random recommendations based on details provided in the registration form.

1. **Homepage**

Homepage is the staring pave of the application and contains either results of random recommendations based on a social network (Facebook) if the user does not have saved preferences, or results of saved preferences if the user indicated some preferences (likes/dislikes).

**6.** **Resources**:

Resources are used to get accurate recommendations for the user.

The following resources are examples of resources that could be used for this application:

- **Dbpedia** 'is a crowd-sourced community effort to extract structured information from Wikipedia and make this information available on the Web'.

<http://wiki.dbpedia.org/>

- **GeoNames.org** ‘The geographical database covers all countries and contains over eight million place names that are available for download free of charge.’

http://www.geonames.org/

- **Linked Data** " is about using the Web to connect related data that wasn't previously linked, or using the Web to lower the barriers to linking data currently linked using other methods. More specifically, Wikipedia defines Linked Data as "a term used to describe a recommended best practice for exposing, sharing, and connecting pieces of data, information, and knowledge on the Semantic Web using URIs and RDF.""

http://linkeddata.org/

- **Schema.org** ‘is a collaborative, community activity with a mission to create, maintain, and promote schemas for structured data on the Internet, on web pages, in email messages, and beyond.'

- **Freebase** ' was a large collaborative knowledge base consisting of data composed mainly by its community members.'

https://www.freebase.com/

- **BabelNet** 'is a multilingual lexicalized semantic network and ontology'

http://babelnet.org/

- **Wikidata** 'is a collaboratively edited knowledge base'.

https://www.wikidata.org/wiki/Wikidata:Main\_Page

- and so on...

**Note**: This list of resources is not final and the definitions of the resources are taken from the main sites.

**7. Social networks: Facebook**

The FOAF graph will be constructed based on information from Facebook. The user must be connected to Facebook in order to create the graph and then be provided with the random or requested recommendations.

8. **FOAF graph**

FOAF graph (friend of a friend) is a RDF file that stores personal information taken from a social network (Facebook).

Personal information means information from Facebook profile, including client's friends: likes, likes/dislikes, events, things, professions, music, artists, work places, educational institutes, domains of work, stores, electronics, clothes and so on.

**8.1** **Creation of FOAF graph**

FOAF graph is created first when the client logs in on a social network in a RDF format. The client has the possibility to update the content of the graph every time he/she requests so.

Even if the client does not request an update of the graph, the application will be programmed to update the graph in the background using **Thor** every 2 days.

Note: Time limit of updating the graph can be changed if necessary.

**8.2** **Storage of FOAF graph**

FOAF graph will be loaded on the server side every time it is created/updated. There will be a RDF graph or more for each user that has an account for this application.

**8.3 Usage of FOAF graph**

The graph is used for:

- random generated recommendations displayed on homepage

- on user request generated recommendations.

**9. API specifications**

RAML file is used to describe API specifications

**9.1 RAM file**

**RAML file describes the API specifications of the application. The file contains:**

- /search/people, /search/events etc - used for searches of information from the homepage form, filled in by the user. 5 different forms are needed for this.

- /recommendations?item\_type=person etc...- used for random recommendation based on similarities from graph (without queries) which will appear on the wall. A drop-down with 5 recommendations will be available, serving as a filter that the client can chose the type of recommendation to see.

- graph?item\_type=person etc - display of all resources from the RDF graph, filtered by categories.

- the RAML file also contains sorting criterias ( by name, date, ...), types of sorting( ascending, descending).

- /saved-items?item\_type=person... - this path gets preferences saved( likes/dislikes)

**9.2** **Link to RAML file**

**10.** **Results - limited display of results**

Results are query results from a given RDF graph and can be taken from external resources as well. See link to resources. [link]

Results are displayed in Homepage, containing:

- name of the results

- description

- others, according to the selected criterias or according to the recommendations( random or requested).

The constraints of the number of items displayed are:

-minimum number of results: 5

-maximum number of results: 50

- Default: 10

**11. Caching**

Queries used by the user are saved on the user side.

**12. User preferences**

A list of preferences will be saved in the user profile by the user that indicates the results liked by the user.

Beside this list, SOR also creates a black list of results that should not be included in the displayed results. In this way SOR becomes more accurate each time it is used.

Two checks will be available for each result one with ‘+’ meaning to include this result in the user profile, and one with ’ –**‘**, meaning to exclude this result when receiving a recommendation.

Preferences are by default kept from the first time the user signed in his account, but there is a checklist available where the user can select the period of time the preferences were added.

**13. Conclusion**

Social recommender is a web application that user social networks (Facebook) and other external resources to recommend the user certain people, events, things, music, books and so on.

**14. Bibliography**

DBpedia: http://wiki.dbpedia.org/

FOAF: http://www.foaf-project.org/

RAML: http://raml.org/

Facebook: https://www.facebook.com/

Security schemas: https://api.yaas.io/patterns/v1/security-schema-basic.yaml

Schema.org: https://schema.org/

Wikipedia: https://wikipedia.com/

Web project page: http://profs.info.uaic.ro/~busaco/teach/courses/wade/web-projects.html