

# Learning Content Models for Semantic Search User Manual

Professional Advisor:

Michael Elhadad

Academic Advisor:

Menahem Adler

Team Members:

Eran Peer

Hila Shalom

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# 1. Introduction

The system's goal is to allow the user to explore a repository of textual documents, and discover material of interest even when he is not familiar with the content of the repository.

Existing search engines provide powerful features to identify known documents by using a short description of their content (keywords, name of document). For example, a user wants to find information about a term that he knows, he enters the term's name in a search engine, and the search engine returns the address of the term's value at Wikipedia.

The task we address is what happens when the user does not know the name of the term he is looking for, or when the term the user enters has several meanings. The system that we developed will help the user explore interactively the repository and the terms that are most significant in this repository.

The system is a computerized system for searching articles.

There are two types of users:

1. The search users – Users that use the client side of the project. Those users can enter queries and explore the repository by specific topics or by articles' data.
2. The admin users – Users that use the server side of the project. The system's administrators can add/delete articles, change the article's topics hierarchy and change the algorithm that builds this hierarchy.

# Searcher User Manual

## 2. System Requirements

Browser

A connection to the internet

## 3. Installation

1. The client should contain a browser. In order to install one –

<http://www.google.com/chrome> OR

<http://www.mozilla.com/en-US/firefox/new/> OR

<http://windows.microsoft.com/en-US/internet-explorer/downloads/ie>

2. In the browser, enter the address: <http://<IP:Port>/main>

## 4. Training

### 4.1 Entering a query

The screenshot shows the search interface of the 'Learning Content Models for Semantic Search' application. At the top, the title 'Learning Content Models for Semantic Search' is displayed in a blue header. Below it, a section titled 'Search for articles' contains a text input field with the placeholder text 'Enter Text:'. The input field contains the query 'France's national female hero'. To the right of the input field is a 'Search' button.

### 4.2 Searching in the results by query

The screenshot shows the search results page for the query 'France's national female hero'. The page title is 'Learning Content Models for Semantic Search' and the subtitle is 'Results'. The search results are displayed for the query 'France's national female hero'. On the left side, there is a sidebar with a 'France military' section and a 'Wheel Topics' section. The 'Wheel Topics' section lists various topics with their respective counts: 'Important figures in history (331)', 'History of France (211)', 'French military leaders (188)', 'Wars of France (162)', 'French governors (149)', 'History of Democracy (145)', 'Feminism and history (71)', 'Great women in history (55)', 'Women in war (48)', and 'Modern revolutions (38)'. The main content area displays three search results. The first result is 'Women's suffrage' by Eliyak, dated 27 May 2011. The second result is 'French Revolution' by Xqbot, dated 17 May 2010. The third result is 'French Resistance' by Tataryn77, dated 23 May 2011. A blue arrow points to the 'Search in Results' button in the top right corner of the results section.

## 4.3 Searching in the results by the topics

### 4.3.1 Searching in the results by list of topics

Learning Content Models for Semantic Search

Results

Search results for query "France's national female hero"

New Search Search In Results

Wheel Topics Tree Topics

Hierarchical Topics Tree  
Important figures in history (331)  
History of France (211)  
French military leaders (188)  
Wars of France (162)  
French governors (149)  
History of Democracy (145)  
Feminism and history (71)  
Great women in history (55)  
Women in war (48)  
Modern revolutions (38)

**Women's suffrage**  
Author: Eliyak  
Date: 27 May 2011  
Women's suffrage or woman suffrage is the right of women to vote and to run for office. The expression is also used for the economic and political reform movement aimed at extending these rights to women and without any restrictions or qualifications such as property ownership, payment of tax, or marital status. The movement's modern origins are attributed to 18th century France. In 1893, the British colony of New Zealand became the first self-governing nation to extend the right to vote to all adult women, and the women of the nearby colony of South Australia achieved the same right in 1895 but became the first to obtain also the right to stand (run) for Parliament (women did not win the right to run for the New Zealand legislature until 1919). The first European country to introduce women's suffrage was the Grand Principality of Finland and that country, then a part of the Russian Empire with autonomous powers, produced the world's first female members of parliament as a result of the 1907 parliamentary elections.  
Topics: [Feminism and history](#), [History of Democracy](#), [Politics by issue](#)

**French Revolution**  
Author: Xqbot  
Date: 17 May 2010  
The French Revolution (French: Revolution francaise; 1789–1799) was a period of radical social and political upheaval in French and European history. The absolute monarchy that had ruled France for centuries collapsed in three years. French society underwent an epic transformation as feudal, aristocratic and religious privileges evaporated under a sustained assault from liberal political groups and the masses on the streets. Old ideas about hierarchy and tradition succumbed to new Enlightenment principles of citizenship and inalienable rights.  
Topics: [Modern rebellions](#), [Modern revolutions](#), [History of France](#), [History of Democracy](#)

**French Resistance**  
Author: Tataryn77  
Date: 23 May 2011  
The French Resistance (French: La Resistance francaise) is the name used to denote the collection of French resistance movements that fought against the Nazi German occupation of France and against the collaborationist Vichy regime during World War II. Resistance cells were small groups of armed men and women (called the Maquis in rural areas), who, in addition to their guerrilla warfare activities, were also publishers of underground newspapers, providers of first-hand intelligence information, and maintainers of escape networks that helped Allied soldiers and airmen trapped behind enemy lines. The men and women of the Resistance came from all economic levels and political leanings of the French society, including emigres; from conservative Roman Catholics (including priests), from the Jewish community, and from the ranks of liberals, anarchists, and communists.

### 4.3.2 Searching in the results by wheel of topics

Learning Content Models for Semantic Search

Results

Search results for query "France national female hero"

New Search Search In Results

Wheel Topics Tree Topics

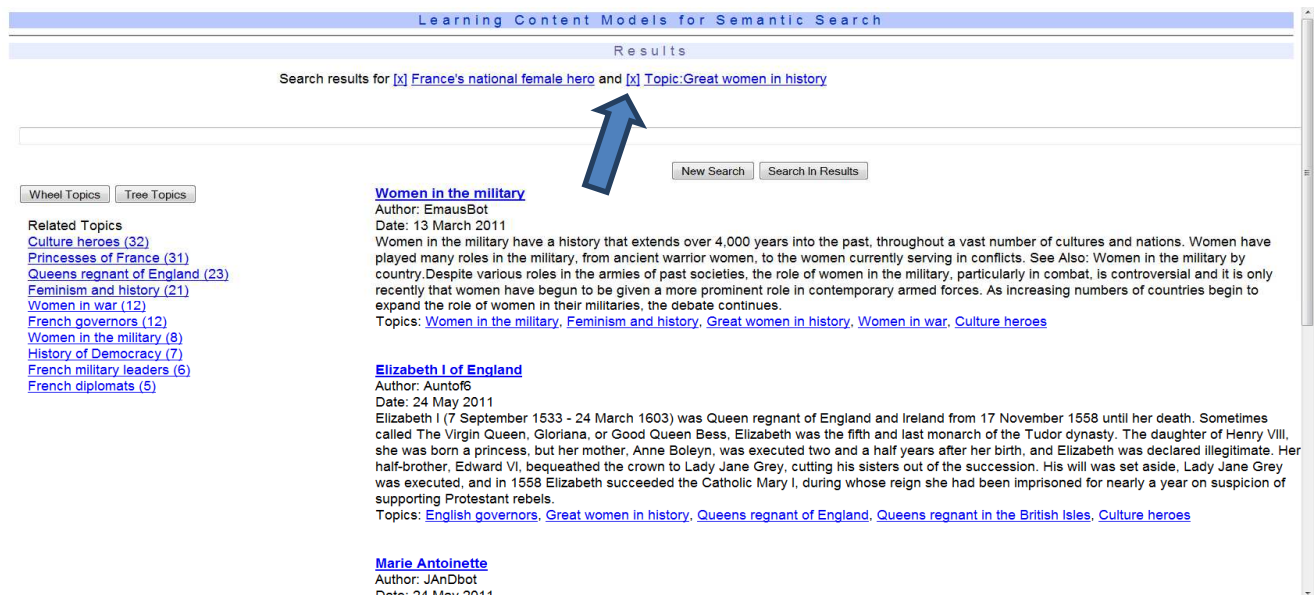
Important figures in history (331)  
History of France (211)  
Great women in history (55)  
Feminism and history (71)  
History of Democracy (145)  
Wars of France (162)  
French governors (149)  
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Topics: [History of France](#), [World war 2](#), [National liberation movements](#), [Guerrilla warfare](#)

## 4.4 Removing parts from the query



The screenshot shows a search interface titled "Learning Content Models for Semantic Search". The search results are for the query "[x] France's national female hero and [x] Topic:Great women in history". A blue arrow points to the search query. The results are displayed in a table with three rows. The first row is titled "Women in the military" and the second row is titled "Elizabeth I of England". The third row is titled "Marie Antoinette".

Search results for [\[x\] France's national female hero](#) and [\[x\] Topic:Great women in history](#)

Related Topics

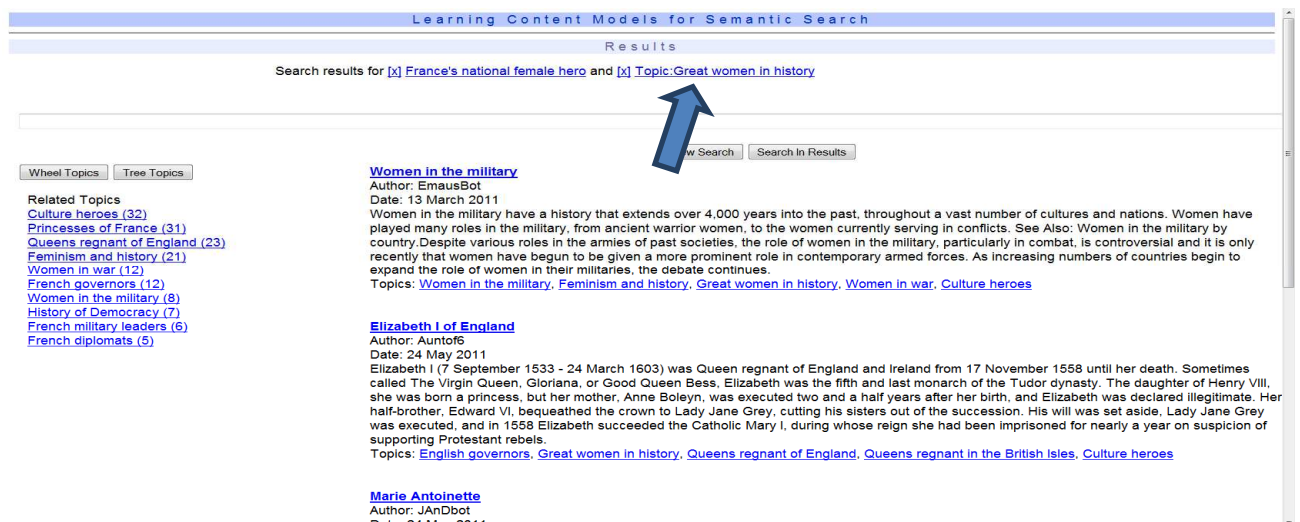
- [Culture heroes \(32\)](#)
- [Princesses of France \(31\)](#)
- [Queens regnant of England \(23\)](#)
- [Feminism and history \(21\)](#)
- [Women in war \(12\)](#)
- [French governors \(12\)](#)
- [Women in the military \(8\)](#)
- [History of Democracy \(7\)](#)
- [French military leaders \(6\)](#)
- [French diplomats \(5\)](#)

**Women in the military**  
Author: EmausBot  
Date: 13 March 2011  
Women in the military have a history that extends over 4,000 years into the past, throughout a vast number of cultures and nations. Women have played many roles in the military, from ancient warrior women, to the women currently serving in conflicts. See Also: Women in the military by country. Despite various roles in the armies of past societies, the role of women in the military, particularly in combat, is controversial and it is only recently that women have begun to be given a more prominent role in contemporary armed forces. As increasing numbers of countries begin to expand the role of women in their militaries, the debate continues.  
Topics: [Women in the military](#), [Feminism and history](#), [Great women in history](#), [Women in war](#), [Culture heroes](#)

**Elizabeth I of England**  
Author: Auntof6  
Date: 24 May 2011  
Elizabeth I (7 September 1533 - 24 March 1603) was Queen regnant of England and Ireland from 17 November 1558 until her death. Sometimes called The Virgin Queen, Gloriana, or Good Queen Bess, Elizabeth was the fifth and last monarch of the Tudor dynasty. The daughter of Henry VIII, she was born a princess, but her mother, Anne Boleyn, was executed two and a half years after her birth, and Elizabeth was declared illegitimate. Her half-brother, Edward VI, bequeathed the crown to Lady Jane Grey, cutting his sisters out of the succession. His will was set aside, Lady Jane Grey was executed, and in 1558 Elizabeth succeeded the Catholic Mary I, during whose reign she had been imprisoned for nearly a year on suspicion of supporting Protestant rebels.  
Topics: [English governors](#), [Great women in history](#), [Queens regnant of England](#), [Queens regnant in the British Isles](#), [Culture heroes](#)

**Marie Antoinette**  
Author: JAndBot  
Date: 24 May 2011

## 4.5 Choosing parts from the query



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Search results for [\[x\] France's national female hero](#) and [\[x\] Topic:Great women in history](#)

Related Topics

- [Culture heroes \(32\)](#)
- [Princesses of France \(31\)](#)
- [Queens regnant of England \(23\)](#)
- [Feminism and history \(21\)](#)
- [Women in war \(12\)](#)
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Topics: [Women in the military](#), [Feminism and history](#), [Great women in history](#), [Women in war](#), [Culture heroes](#)

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**Marie Antoinette**  
Author: JAndBot  
Date: 24 May 2011



## 4.6 Choosing an article

Learning Content Models for Semantic Search

Results

Search results for [\[X\] France's national female hero](#) and [\[X\] Topic:Great women in history](#) and [\[X\] Topic:French military leaders](#)

[New Search](#) [Search In Results](#)

[Wheel Topics](#) [Tree Topics](#)

**Related Topics**  
[Culture heroes \(4\)](#)  
[Women in war \(3\)](#)  
[Feminism and history \(2\)](#)  
[Important figures in history \(2\)](#)  
[History of France \(2\)](#)  
[Queens regnant of England \(2\)](#)  
[Princesses of France \(2\)](#)  
[French military leaders \(1\)](#)  
[Executed French women \(1\)](#)  
[French governors \(1\)](#)

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Topics: [Women in the military](#), [Feminism and history](#), [Great women in history](#), [Women in war](#), [Culture heroes](#)

**Joan of Arc**  
Author: Nono64  
Date: 19 May 2011  
Saint Joan of Arc, nicknamed The Maid of Orleans (French: "Jeanne d'Arc"; 1412 - 30 May 1431) is considered a national heroine of France and a Catholic saint. A peasant girl born in eastern France who claimed divine guidance, she led the French army to several important victories during the Hundred Years' War, which paved the way for the coronation of Charles VII. She was captured by the Burgundians, sold to the English, tried by an ecclesiastical court, and burned at the stake when she was 19 years old. Twenty-five years after the execution, Pope Callixtus III examined the trial, pronounced her innocent and declared her a martyr. Joan of Arc was beatified in 1909 and canonized in 1920. She is - along with St. Denis, St. Martin of Tours, St. Louis IX, and St. Theresa of Lisieux - one of the patron saints of France.  
Topics: [Women in the military](#), [Great women in history](#), [Women in war](#), [Culture heroes](#), [French military leaders](#), [Executed French women](#), [History of France](#)

[List of women warriors in folklore](#)  
Author: Andrew Jones

## 4.7 Searching by article's meta-data

Learning Content Models for Semantic Search

Results

**Joan of Arc**

See more Articles:  
[Author: Nono64](#)  
[Date year: 2011](#)

**Topics:**  
[Women in the military](#),  
[Great women in history](#),  
[Women in war](#),  
[Culture heroes](#),  
[French military leaders](#),  
[Executed French women](#),  
[History of France](#)

Author: Nono64  
Date: 19 May 2011

Topics: [Women in the military](#), [Great women in history](#), [Women in war](#), [Culture heroes](#), [French military leaders](#), [Executed French women](#), [History of France](#)

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**Background**

The historian Kelly DeVries describes the period preceding her appearance in the following terms: "If anything could have discouraged her, the state of France in 1429 should have." The Hundred Years' War had begun in 1337 as a succession dispute over the French throne with intermittent periods of relative peace. Nearly all the fighting had taken place in France, and the English army's use of chevauchee tactics (similar to scorched earth strategies) had devastated the economy. The French population had not recovered from the Black Death of the previous century and its merchants were isolated from foreign markets. At the outset of Jeanne d'Arc's appearance, the English had nearly achieved their goal of a dual monarchy under English control and the French army had not achieved any major victories for a generation. In DeVries's words, "The kingdom of France was not even a shadow of its thirteenth-century prototype." The French king at the time of Joan's birth, Charles VI, suffered bouts of insanity and was often unable to rule. The king's brother Duke Louis of Orleans and the king's cousin John the Fearless, Duke of Burgundy, quarreled over the regency of France and the guardianship of the royal children. This dispute escalated to accusations of

## 4.8 Searching by article's topics

### 4.8.1 In the article

Learning Content Models for Semantic Search

Results

# Joan of Arc

See more Articles:  
[Author: Nono64](#)  
[Date year: 2011](#)

Topics:  
[Women in the military](#),  
[Great women in history](#),  
[Women in war](#),  
[Culture heroes](#),  
[French military leaders](#),  
[Executed French women](#),  
[History of France](#)

Author: Nono64  
Date: 19 May 2011

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### 4.8.2 In the results

Learning Content Models for Semantic Search

Results

Search results for [\[x\] France's national female hero](#) and [\[x\] Topic:Great women in history](#) and [\[x\] Topic:French military leaders](#)

Wheel Topics

Tree Topics

Related Topics

- [Culture heroes \(4\)](#)
- [Women in war \(3\)](#)
- [Feminism and history \(2\)](#)
- [Important figures in history \(2\)](#)
- [History of France \(2\)](#)
- [Queens regnant of England \(2\)](#)
- [Princesses of France \(2\)](#)
- [French military leaders \(1\)](#)
- [Executed French women \(1\)](#)
- [French governors \(1\)](#)

New Search

Search In Results

[Women in the military](#)

Author: EmausBot  
Date: 13 March 2011

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[List of women warriors in folklore](#)

Author: Andrius...

## 5. Reference

### 5.1 Entering a query

The user can enter a query in free language and search by it.

### 5.2 Searching in the results by query

The user can enter a query in order to search in the given results.

### 5.3 Searching in the results by the topics

The user can choose a topic in order to focus his will in the given results.

#### 5.3.1 Searching in the results by list of topics

The user can choose a topic from the topics' list in order to focus his will in the given results.

#### 5.3.2 Searching in the results by wheel of topics

The user can choose a topic from the topics' wheel in order to focus his will in the given results.

### 5.4 Removing parts from the query

The user can choose to remove parts from the query.

### 5.5 Choosing parts from the query

The user can choose to search by one of the query's parts.

### 5.6 Choosing an article

The user can choose to view one of the result's articles.

### 5.7 Searching by article's meta-data

The user can choose to search by one of the result's articles' data (ex. author, date).

### 5.8 Searching by article's topics

The user can choose to search by one of the result's articles' articles.

#### 5.8.1 In the article

In the article page, the user can choose to search by one of the articles' topics.

### 5.8.2 In the results

In the results page, the user can choose to search by one of the articles' topics.

# Administrator Manual

## 2. System Requirements

Java JRE version 1.6

Apache tomcat server 6.0.18 preconfigured

Apache SolR 1.4.1

## 3. Installation

1. The server should contain a **Java platform** (version 1.6). In order to install Java JRE - <http://www.java.com>-> Downloads.

2. **Install apache SolR 1.4.1** on the server hardware - Download from <http://off.co.il/apache//lucene/solr/1.4.1/apache-solr-1.4.1.zip> and open the war file in the some library.

Verify that it works:

- Open command window
- Go to (with cd) the library where the solr is \apache-solr-1.4.1\example
- Write -jar start.jar
- Open browser with the URL <http://localhost:8983/solr/admin/>

3. **Download the project's code** on the server hardware at some library - Download from (as source code) [http://code.google.com/p/semantic-search2011/downloads/detail?name=server\\_project.zip&can=2&q=#makechanges](http://code.google.com/p/semantic-search2011/downloads/detail?name=server_project.zip&can=2&q=#makechanges)

Unzip the "server\_project.zip" file into the project's library.

There you can also find all the demos you need.

**OR** Download from (as jar)

[http://code.google.com/p/semantic-search2011/downloads/detail?name=server\\_jar%20and%20ant\\_file.zip&can=2&q=#makechanges](http://code.google.com/p/semantic-search2011/downloads/detail?name=server_jar%20and%20ant_file.zip&can=2&q=#makechanges)

Unzip the "server\_jar and ant\_file.zip" file into the project's library.

If you choose to download as jar, you can't change the code. Therefore steps 5-10 aren't relevant.

- Open command window
- Go to (with cd) the project's library
- Run the jar file: java -jar server.jar [-search or -index or -tag] [server-port] [solr-port] [optional corpus-path]
  - search: To run the server only for search.
  - index: To run the server with new tags for the articles.
  - tag: To run the server with new corpus.
- The system is now up ☺

4. Put your Corpus articles as library in **some folder**. Those files can be in any format you want (**Demo corpus file you can find at the end of this document**).

5. Put the articles' metadata files as library in **the same folder as the corpus**. Each metadata file must have the same name as the parallel article file. Those files have to be in the following format: The\_field's\_name == The\_field's\_value

If the field has more than one value then

The\_field's\_name == [The\_field's\_value, The\_field's\_value, ...]

***(Demo metadata file, for the demo corpus file, you can find at the end of this document).***

**6. Implement the interfaces (Demo implementation you can find at the end of this document):**

```
package Corpus;
import java.util.*;
import DataObjects.*;
import Main.*;
public interface Corpus {
    //returns a collection of strings, that represent the names of the Metadata - like "author,
    date".
    //The first String is the metadata's name in SolR
    //The second String is the real metadata's name
    //The third in the Threesome is the metadata's type
    public Vector<Threesome<String,String,MetadataType>> getAllMetadataNames();
    //returns the path of the directory where all the corpus's files are.
    public String getArticlesPath();
    //makes an initial process on the corpus's files
    public void init();
    //returns iterator for all the articles and their location
    public Iterator<Pair<Article,String>> getIteratorForTheArticles();
}
```

This interface represents the corpus of the search. It needs to know the path of the metadata and the articles (for example, getting it in the constructor).

```
package Tagger;
import java.util.*;
import DataObjects.*;
public interface Tagger {
    //gets the location of the corpus and returns an HashMap of the Topic Model - Integer:
    the Topic ID, Topic: the Topic
    public HashMap<Integer, Topic> tagCorpus(String corpusPath);
    //gets an article and adds to the article it's topics
    public void addArticleTopics(Article article,String fileName);
    //returns a hash of all the topics
    public HashMap<Integer, Topic> getAllTopics();
}
```

When the corpusPath can be received by calling the corpus's function `public String getArticlesPath();`

7. Put your implementations in the Corpus and Tagger packages respectively (in the src folder).

8. In the Main class, change the corpus and tagger to your implementation (***Demo Main class you can find at the end of this document***).

9. Compile the ant file:

- Open command window
- Go to (with cd) the project's library
- Run the ant file: ant

11. Run the program:

- Open command window
- Go to (with cd) the project's library
- Run the jar file: java -jar server.jar [-search or -index or -tag] [server-port] [solr-port] [optional corpus-path]

-search: To run the server only for search.

-index: To run the server with new tags for the articles.

-tag: To run the server with new corpus.

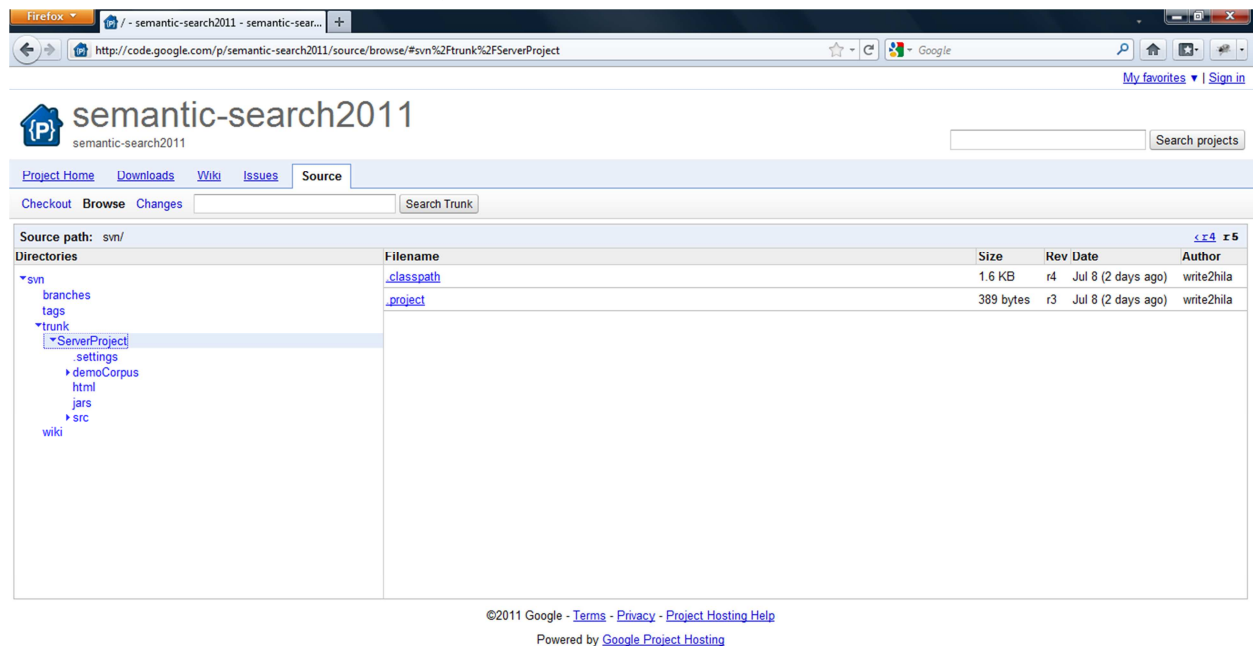
12. The system is now up ☺

By default the demo corpus is English, if you want the Hebrew one – you need to change the demoCorpus folder content with the hebDemoCorpus folder content.



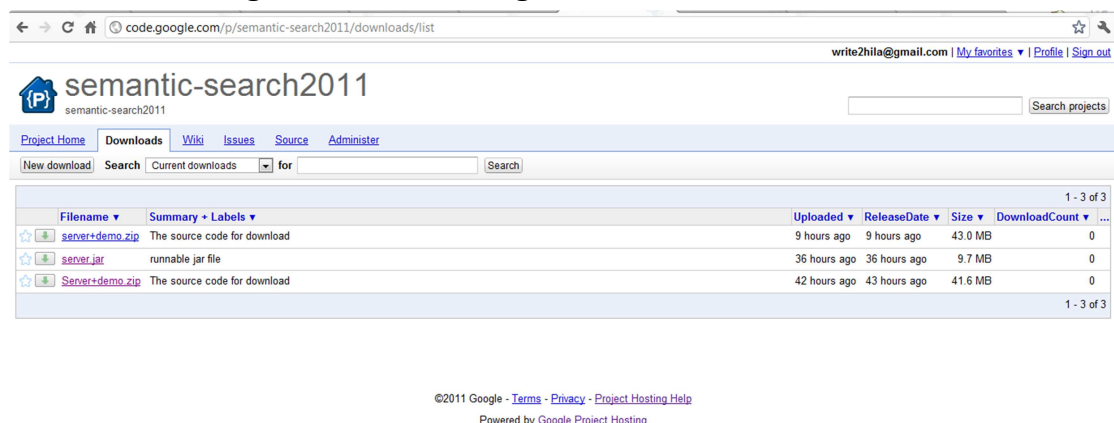
## 4. Training

### 4.1 Viewing the code at Google code



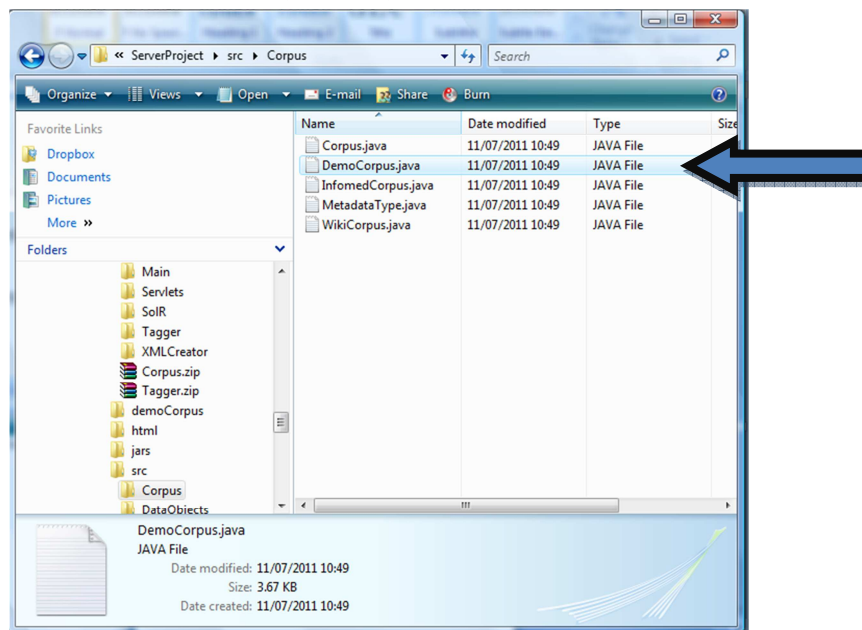
The screenshot shows the Google Code project page for **semantic-search2011**. The browser address bar shows the URL <http://code.google.com/p/semantic-search2011/source/browse/#svn%2Ftrunk%2FServerProject>. The page has a navigation bar with links: [Project Home](#), [Downloads](#), [Wiki](#), [Issues](#), and [Source](#) (selected). Below the navigation bar, there are tabs for [Checkout](#), [Browse](#), and [Changes](#). The **Source** tab is active, showing a directory tree on the left and a file list on the right. The directory tree includes `svn`, `branches`, `tags`, `trunk`, `ServerProject` (selected), `settings`, `demoCorpus`, `html`, `jars`, `src`, and `wiki`. The file list shows two files: `classpath` (1.6 KB, rev r4, Jul 8 (2 days ago), written by write2hila) and `project` (389 bytes, rev r3, Jul 8 (2 days ago), written by write2hila). The footer of the page includes copyright information: ©2011 Google - [Terms](#) - [Privacy](#) - [Project Hosting Help](#), and it is powered by [Google Project Hosting](#).

### 4.2 Downloading the code at Google code

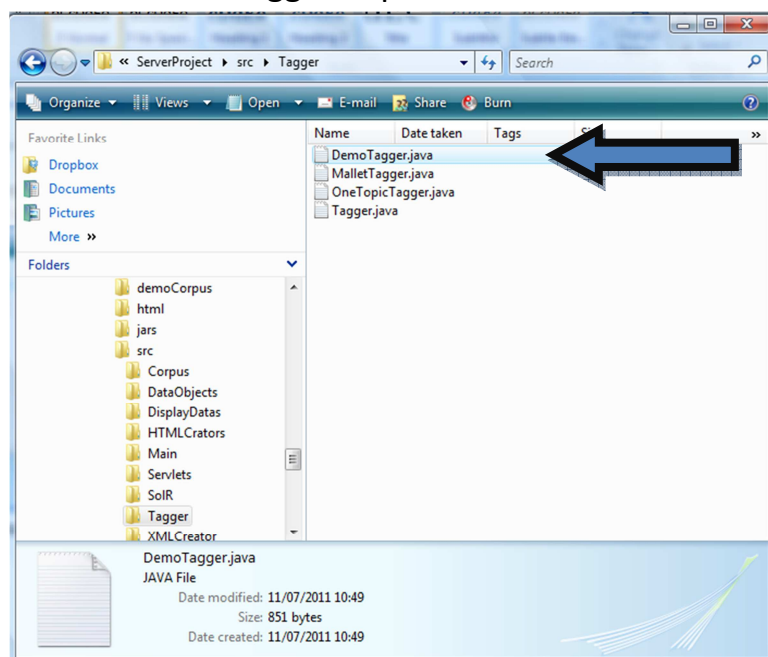


The screenshot shows the Google Code project page for **semantic-search2011**, specifically the **Downloads** tab. The browser address bar shows the URL <http://code.google.com/p/semantic-search2011/downloads/list>. The page has a navigation bar with links: [Project Home](#), [Downloads](#) (selected), [Wiki](#), [Issues](#), [Source](#), and [Administer](#). Below the navigation bar, there are tabs for [New download](#), [Search](#), [Current downloads](#), and [for](#). The **Downloads** tab is active, showing a list of available downloads. The list has columns for `Filename`, `Summary + Labels`, `Uploaded`, `ReleaseDate`, `Size`, and `DownloadCount`. There are three downloads listed: `server+demo.zip` (The source code for download, 9 hours ago, 43.0 MB, 0 downloads), `server.jar` (runnable jar file, 36 hours ago, 9.7 MB, 0 downloads), and `Server+demo.zip` (The source code for download, 42 hours ago, 41.6 MB, 0 downloads). The footer of the page includes copyright information: ©2011 Google - [Terms](#) - [Privacy](#) - [Project Hosting Help](#), and it is powered by [Google Project Hosting](#).

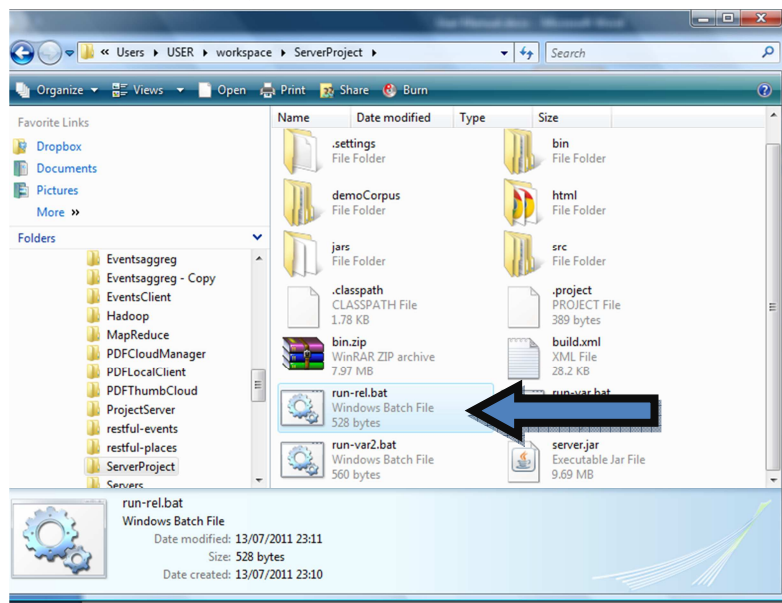
#### 4.3 Add a new Corpus implementation



#### 4.4 Add a new Tagger implementation



## 4.5 Run the program



## 5. Reference

### 5.1 Viewing the code at Google code

The admin can view the project's code at Google code

<http://code.google.com/p/semantic-search2011/source/browse/#svn%2Ftrunk%2FServerProject>

### 5.2 Downloading the code at Google code

Download the project's code at Google code with SVN:

- Download SVN from <http://tortoisesvn.net/downloads.html>
- Create a folder for the project somewhere.
- Right click it.
- Choose the option "SVN Checkout". This will open a dialog box.
- Paste the URL: <https://semantic-search2011.googlecode.com/svn> in the first textbox of that dialog box.
- Click "OK"

**OR** download the project's code at Google code

<http://code.google.com/p/semantic-search2011/downloads/list>

by clicking at the wanted file

### 5.3 Add a new Corpus implementation

The admin can add a new implementation of the Corpus interface. This new implementation has to be in the Corpus package of the code (in src folder).

### 5.4 Add a new Tagger implementation

The admin can add a new implementation of the Tagger interface. This new implementation has to be in the Tagger package of the code (in src folder).

### 5.5 Run the program

The admin can run the program by double clicking the bat file "run-rel.bat" (if using the open source) **OR** by double clicking the bat file "run.bat" (if using jar file).

### 5.6 Change the code

The admin can change and edit the code, each change leads to rerun of the code.

1. If any code that related to the Corpus is changed – the all program must be rerun.

- Open command window
- Go to (with cd) the project's library
- Run the jar file: `java -jar server.jar -tag [server-port] [solr-port] [optional corpus-path]`
- The system is now up ☺

2. If any code that related to the Tagger is changed – the all program, but the Corpus code, must be rerun.

- Open command window
- Go to (with cd) the project's library
- Run the jar file: `java -jar server.jar -index [server-port] [solr-port] [optional corpus-path]`
- The system is now up ☺

3. Else there is no need to rerun the Corpus or the Tagger code.

- Open command window
- Go to (with cd) the project's library
- Run the jar file: `java -jar server.jar -search [server-port] [solr-port] [optional corpus-path]`
- The system is now up ☺

## 5.7 Change the Corpus (articles or metadata)

The admin can change and edit the Corpus (It's articles or metadata), each change leads to rerun of the all program as described at section 5.6 part 1.

The Corpus indexing is up to the administrator.

We recommend indexing the articles with different id numbers, when each article file is named after the article's id.

We also recommend giving names with the same length. We do that by adding zeros in the start of each file name – if needed.

## 6. Demo implementations

### 6.1 Demo Corpus file

In Greek mythology, Achilles (Ancient Greek: , Achilleus) was a Greek hero of the Trojan War, the central character and the greatest warrior of Homer's Iliad. Achilles also has the attributes of being the most handsome of the heroes assembled against Troy.

Later legends (beginning with a poem by Statius in the 1st century AD) state that Achilles was invulnerable in all of his body except for his heel. Since he died due to a poisonous arrow shot into his heel, the term "Achilles' heel" has come to mean a person's principal weakness.

### 6.2 Demo metadata file

```
author == Orphan Wiki
last_modified == 2011-01-13T18:14:13Z
title == Achilles
cat == [Characters in the Iliad, Kings of the Myrmidons, Greek mythological hero cult,
Greek mythology, Pederastic heroes and deities, People of the Trojan War,
Thessalians in the Trojan War]
```

### 6.3 Demo Corpus implementation

```
package Corpus;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.util.Iterator;
import java.util.LinkedList;
import java.util.Vector;
import DataObjects.Article;
import Main.Pair;
import Main.String2;
import Main.Threesome;
public class DemoCorpus implements Corpus{
    private static String[] ids={"0305","0308","0569","0594","0620"};

    private class MyIterator implements Iterator<Pair<Article,String>>{

        private int index=0;

        @Override
        public boolean hasNext() {
            return index<ids.length-1;
        }
        private Article makeArticle(String name){
            name=name+".txt";
            String title="";
            LinkedList<Pair<String,Object>> metadata=new LinkedList<Pair<String,Object>>();
            File textFile=new File("demoCorpus\\Text\\"+name);
```

```

File metadataFile=new File("demoCorpus\\metadata\\"+name);
try {

    FileReader reader=new FileReader(metadataFile);
    BufferedReader buf=new BufferedReader(reader);
    String line=buf.readLine();
    while(line!=null && !line.trim().equals("")){
        String[] splited=line.split(" == ");
        if (splited[0].equals("title")){
            title=splited[1];
        }
        else if (splited[1]==null || splited[1].equals("null")){
            metadata.add(new Pair<String, Object>(splited[0], "Unknown"));
        }
        else if (splited[0].equals("cat")){
            if (splited[1].equals("")){
                metadata.add(new Pair<String,
Object>(splited[0], "Unknown"));
            }
            else{
                Vector<String> cats=String2.split(splited[1].substring(1,
splited[1].length()-1), ", ");
                for(String cat : cats){
                    metadata.add(new Pair<String, Object>(splited[0], cat));
                }
            }
        }
        else{
            metadata.add(new Pair<String, Object>(splited[0], splited[1]));
        }
        line=buf.readLine();
    }
    buf.close();
    reader.close();
    String text="";
    reader=new FileReader(textFile);
    buf=new BufferedReader(reader);
    line=buf.readLine();
    while(line!=null){
        text+=line+"\n";
        line=buf.readLine();
    }
    if (text.trim().equals(""))
        System.out.println("text id: "+Integer.parseInt(String2.split(name, ".").get(0)));
    buf.close();
    reader.close();
    return new Article(Integer.parseInt(String2.split(name, ".").get(0)), title, text,
metadata);
} catch (FileNotFoundException e) {
    e.printStackTrace();//TODO do samthing or dont do samthing
} catch (IOException e) {
    e.printStackTrace();//TODO do samthing or dont do samthing
}
return null;
}

@Override
public Pair<Article, String> next() {
    Article ans=makeArticle(ids[index]);
    index++;
}

```

```

        return new Pair<Article, String>(ans, "demoCorpus\\Text\\"+ids[index]+".txt");
    }
    @Override
    public void remove() {
        // TODO Auto-generated method stub
    }

}

@Override
public Vector<Threesome<String, String, MetadataType>> getAllMetadataNames() {
    Vector<Threesome<String,String,MetadataType>> ans=new
    Vector<Threesome<String,String,MetadataType>>();
    ans.add(new
    Threesome<String,String,MetadataType>("author","Author",MetadataType.string));
    ans.add(new
    Threesome<String,String,MetadataType>("last_modified","Date",MetadataType.date));
    ans.add(new
    Threesome<String,String,MetadataType>("cat","Category",MetadataType.array));//TODO
    return ans;
}
@Override
public String getArticlesPath() {
    return "demoCorpus\\Text\\";
}
@Override
public Iterator<Pair<Article, String>> getIteratorForTheArticles() {
    return new MyIterator();
}
@Override
public void init() {
    // TODO Auto-generated method stub
}
}

```

## 6.4 Demo Tagger implementation

```

package Tagger;
import java.util.HashMap;
import DataObjects.Article;
import DataObjects.Topic;
public class DemoTagger implements Tagger {
    private Topic topic;
    private HashMap<Integer, Topic> hash;
    public void addArticleTopics(Article article, String fileName) {
        int x=((int)(Math.random()*3));
        int y=((int)(Math.random()*3));
        if (x==y)
            article.addTopic(hash.get((x)));
        else
        {
            article.addTopic(hash.get((x)));
            article.addTopic(hash.get((y)));
        }
    }
    public HashMap<Integer, Topic> tagCorpus(String corpusPath) {
        HashMap<Integer, Topic> ans=new HashMap<Integer, Topic>();
        for(int i=0;i<3;i++){
            topic=new Topic(i);

```



```

        topic.addWord("word "+(i*3+1));
        topic.addWord("word "+(i*3+2));
        topic.addWord("word "+(i*3+3));
        ans.put(i, topic);
    }
    hash=ans;
    return ans;
}

public HashMap<Integer, Topic> getAllTopics(){
    if (allTopics==null){
        HashMap<Integer, Topic> ans=new HashMap<Integer, Topic>();
        for(int i=0;i<3;i++){
            topic=new Topic(i);
            topic.addWord("word "+(i*3+1));
            topic.addWord("word "+(i*3+2));
            topic.addWord("word "+(i*3+3));
            ans.put(i, topic);
        }
        allTopics=ans;
    }
    return allTopics;
}
}

```

## 6.5 Demo Main implementation

```

package Main;
import Corpus.*;
import Tagger.*;
import java.io.*;
public class Main {

    public static void main(String[] args) {
        Consts.SERVER_URI="http://"+GetMyIp().getMyIp()+":"+args[0];
        Consts.SOLR_URL="http://localhost:"+args[1]+"/solr/";

        String corpusPath;

        if(args.length==3){
            corpusPath = args[2];
        }
        else {
            corpusPath = "demoCorpus";
        }

        Corpus corpus=new DemoCorpus(corpusPath);
        Tagger tagger=new DemoTagger();

        Active.active(corpus, tagger, Consts.SOLR_URL);
    }
}

```

```
}
```

By default the demo corpus is English, if you want the Hebrew one – you need to change the demoCorpus folder content with the hebDemoCorpus folder content.