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CSSE413 - Artificial Intelligence

## Sentimental Analysis of Tweets

We have, as our final natural language processing project, created a twitter happiness analyzer. It is based on Stanfords sentiment analyzer (<http://nlp.stanford.edu/sentiment/>). We used a java twitter wrapper called twitter4j (<http://twitter4j.org>), to retrieve tweets from someone's profile. However, we cannot get as many tweets as we would like to at all times, since Twitter limits the amount of api-calls and how many tweets they return.

We also restrict the size of the search index by placing a date limit on the updates we allow you to search. This limit is currently around 1.5 weeks but is dynamic and subject to shrink as the number of tweets per day continues to grow.

We designed our user interfaces to make it look modern.

### Service Logic

After retrieving all the tweets, we parse them and use Stanford's sentiment analyzer on each tweet to determine if a tweet is positive or not. If a tweet consists of multiple sentences, each sentence has a score of -1, 0, or 2 depending on if it's negative, neutral or positive. The tweet's total score is the sum of the score of all sentences. The reason we give 2 points for positive tweet but -1 point for negative tweet is that according to our observation, it's rarer for people to tweet when they are happy, but more common for people to tweet when they are upset. In order to take into account this phenomenon, we bias the measurement in preference of the happy tweets.

After calculating the scores of all the tweets, the user's happiness is displayed as a happiness over time graph.

### Environment Setup

Development Environment: Netbeans 8.0.1

Server: Glassfish Server 4.1

Java: Java EE 1.7

In order to run this project, a web server is needed. Most Java EE servers like TomCat and Glassfish will work. During the development process, we used Glassfish Server 4.1. In order to get the same performance as we did during the development, Glassfish Server 4.1 is recommended.

Users should be able to deploy this project with their chosen web servers. But to make this process more convenient, we recommend using Netbeans 8.0.1 IDE with Java EE support.

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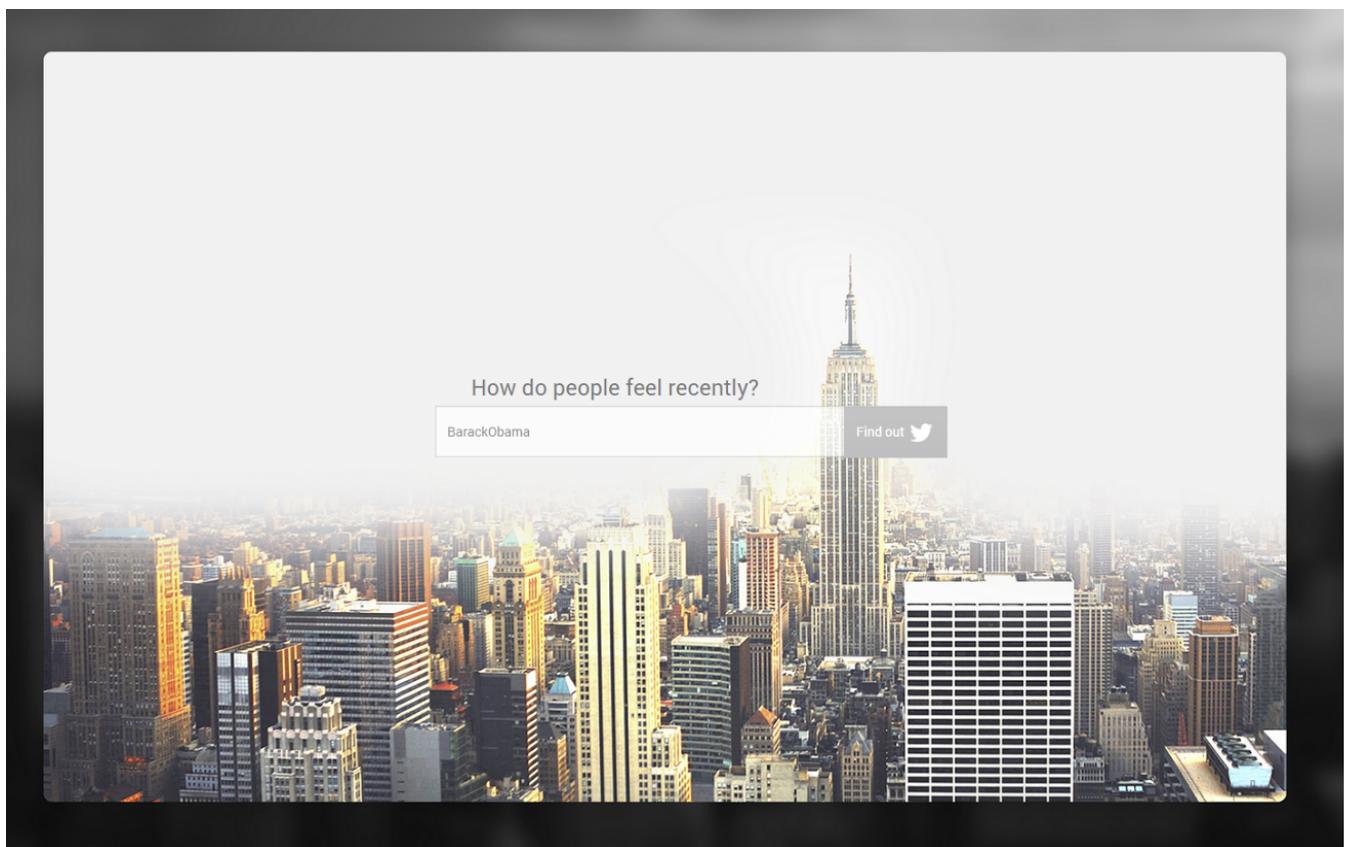
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Users can directly open this project as a Netbeans project and run it without any further configuration. The default address of the project should be <http://localhost:8080/Happiness>.

Due to the resource consumption issues, a computer with at least 8GB memory and fast internet accessibility is recommended.

## Screen Shots

Front page:



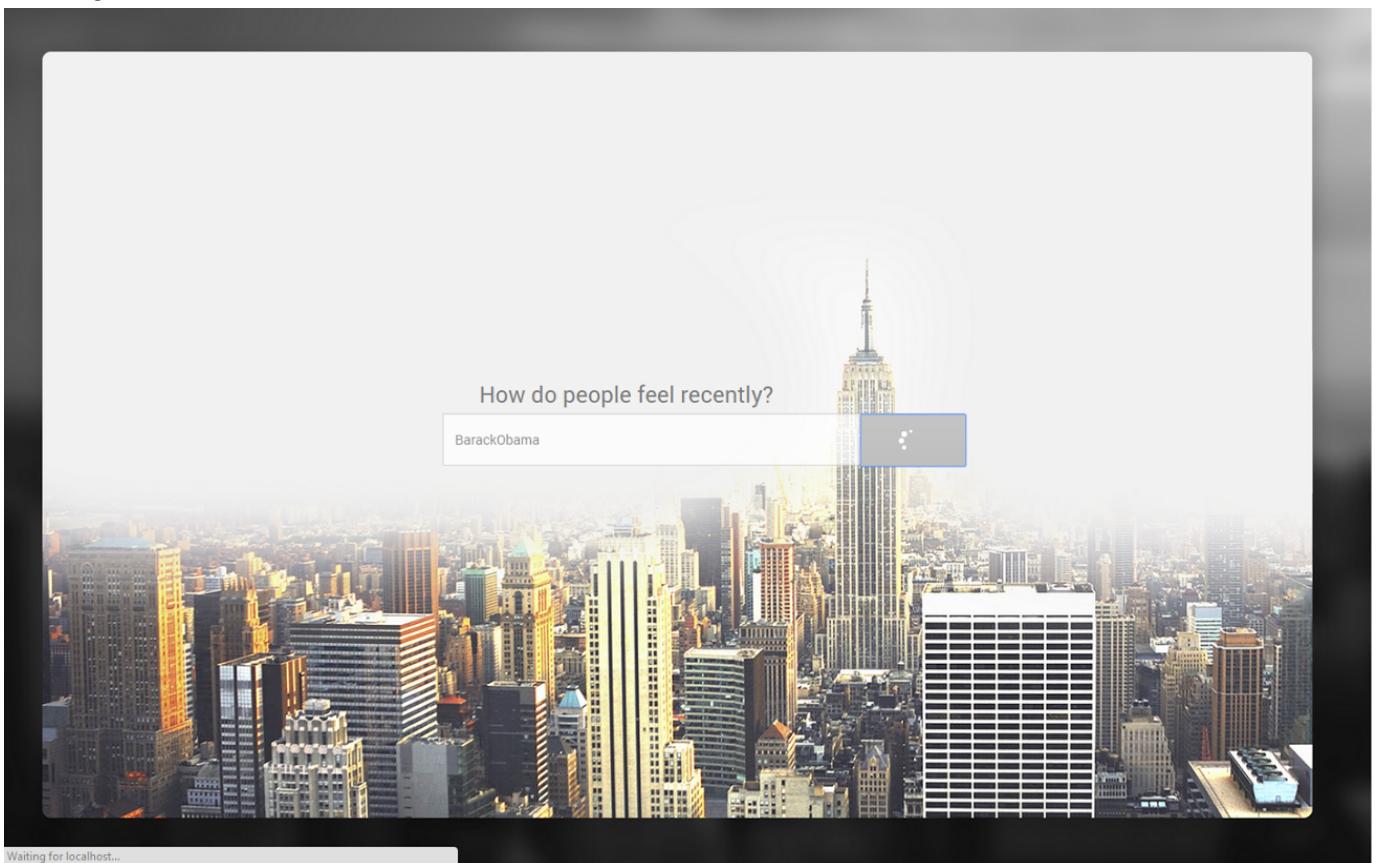
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Loading:



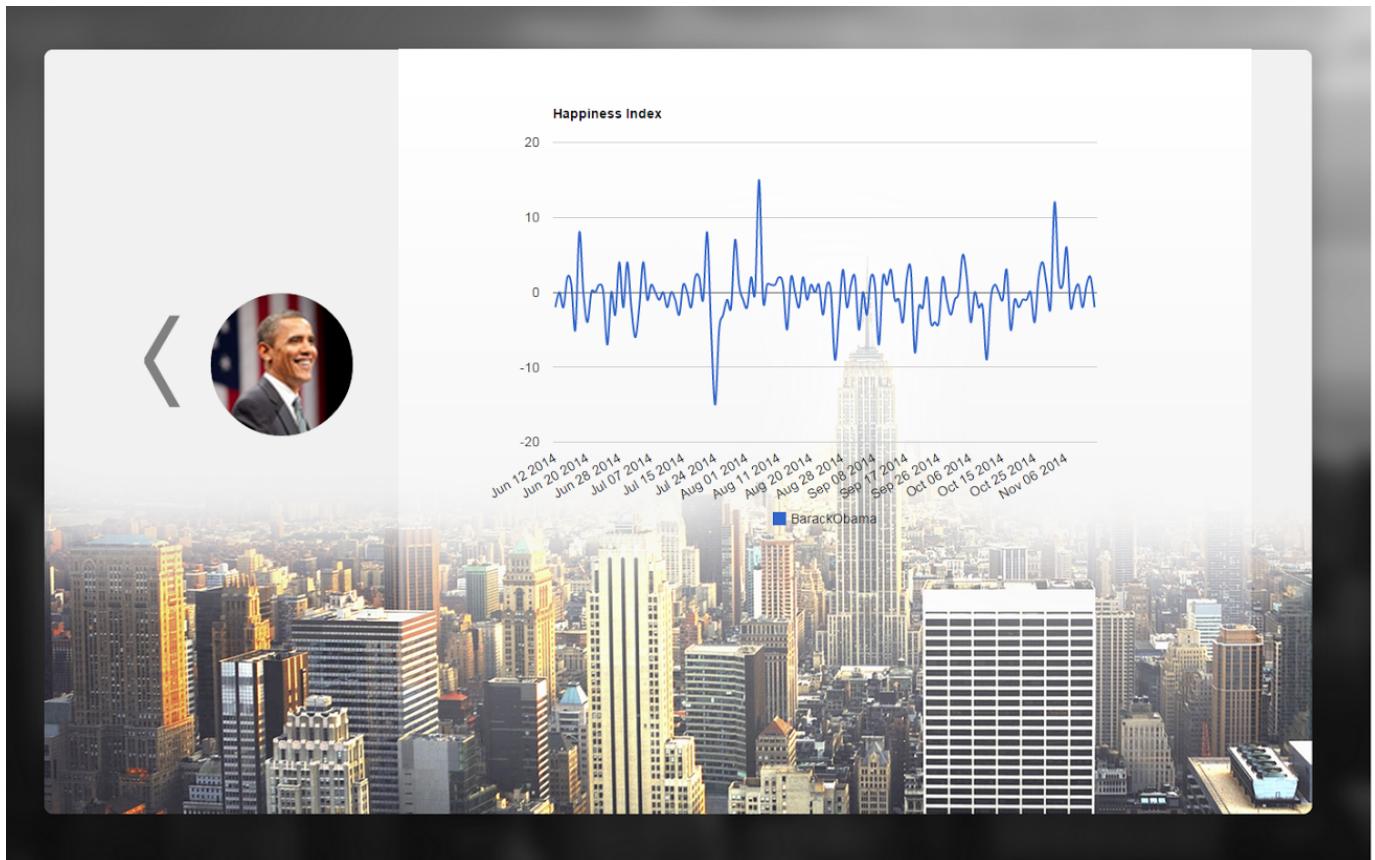
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Result:



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User not found error:

