Count Me Up

March 2017 Created by Carmelo Duchetta 11/03/2017

ARCHITECTURE

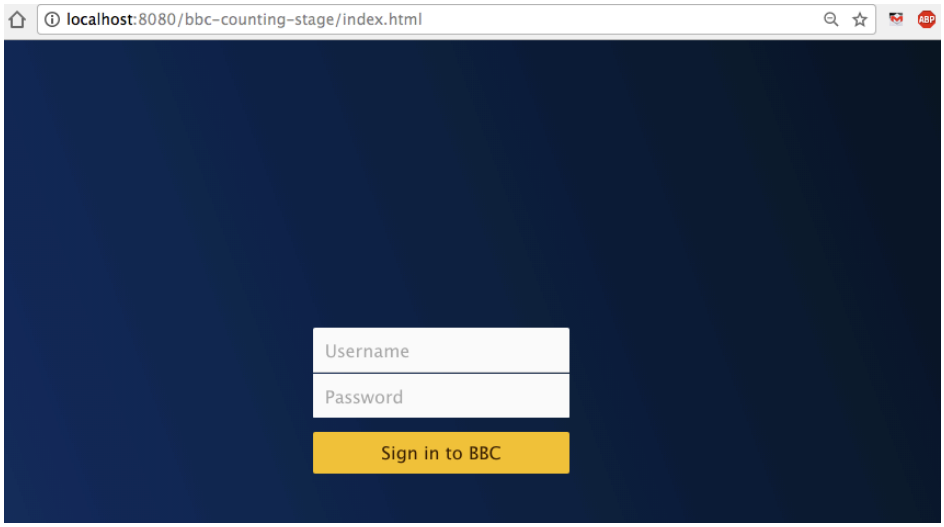
The architecture of the project supports a distributed environment using the Web Services development to take advantage of all the capabilities and resources of distributed computing in the most efficient manner possible.

The architecture could be deployed in different servers to make the application completely scalable.
One PHP server that provide the interface with the external world and all users can interact with the application's functionalities.
J2EE is the main core technology used to design the Entities of the system. At the last layer there is Cassandra NoSQL Database. The choice of this database is related to different reasons as Write Speed, Multi-DC Replication, Tunable Consistency, JVM Based, CQL language. Also Cassandra DB is one of the best candidate to be integrated with Apache Solr technology used as well in this project to guarantee high performance in showing results.
That project has been tested just on a single machine locally.

FUNCTIONALITIES

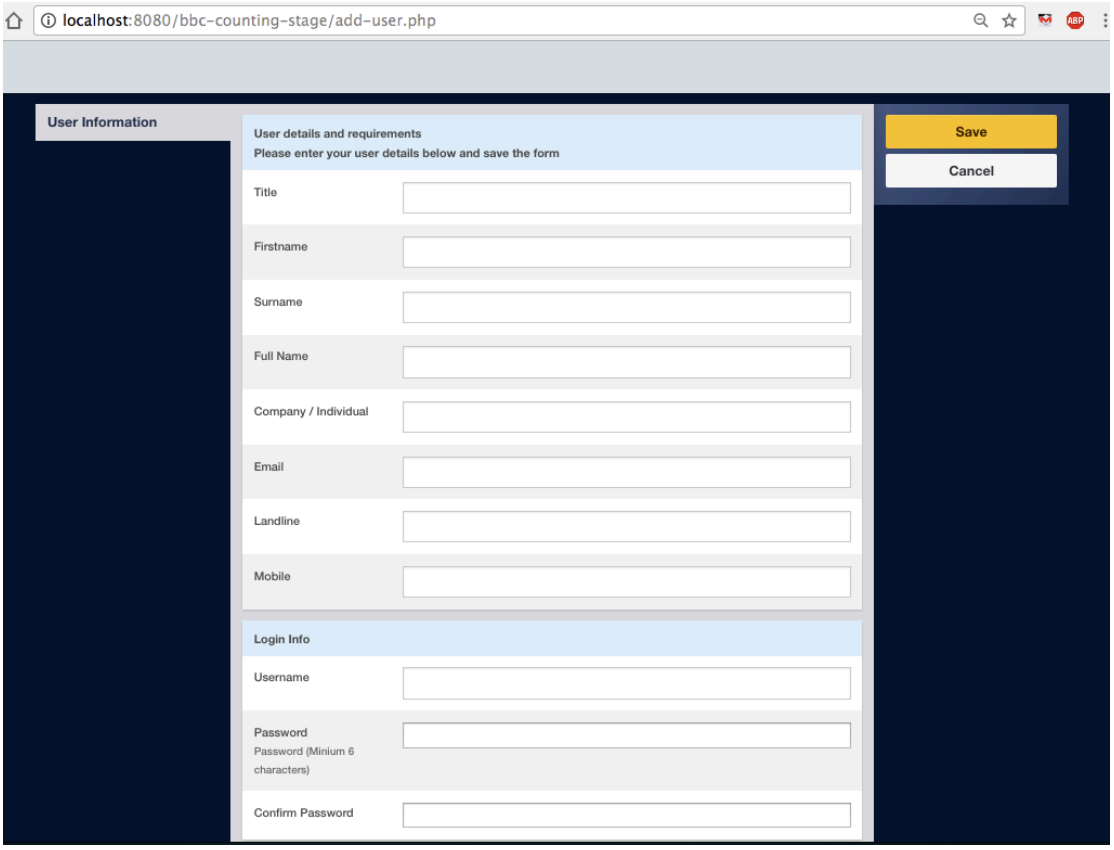
1. LOGIN
2. USER REGISTRATION
3. DASHBOARD
4. VOTE
5. SHOW RESULTS
6. LOGOUT

1. Login



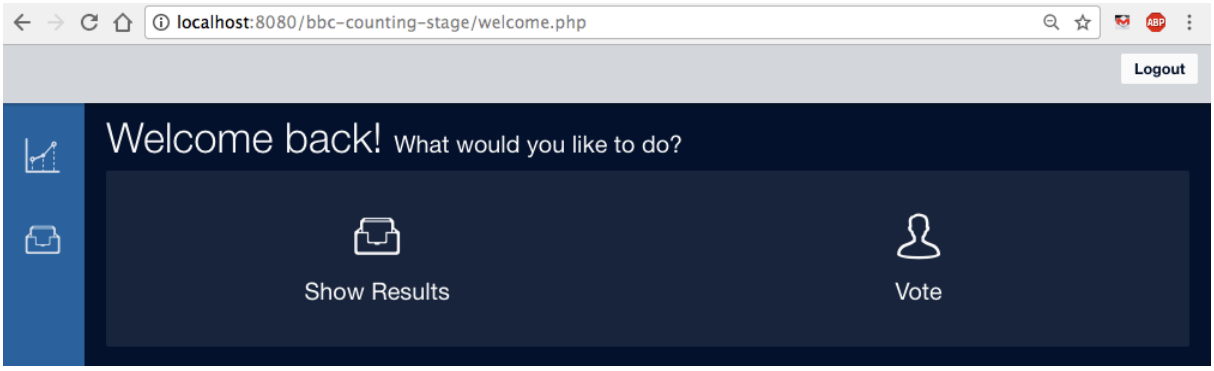
After the user has created his own profile, he will be able to login on the system.

2. USER REGISTRATION



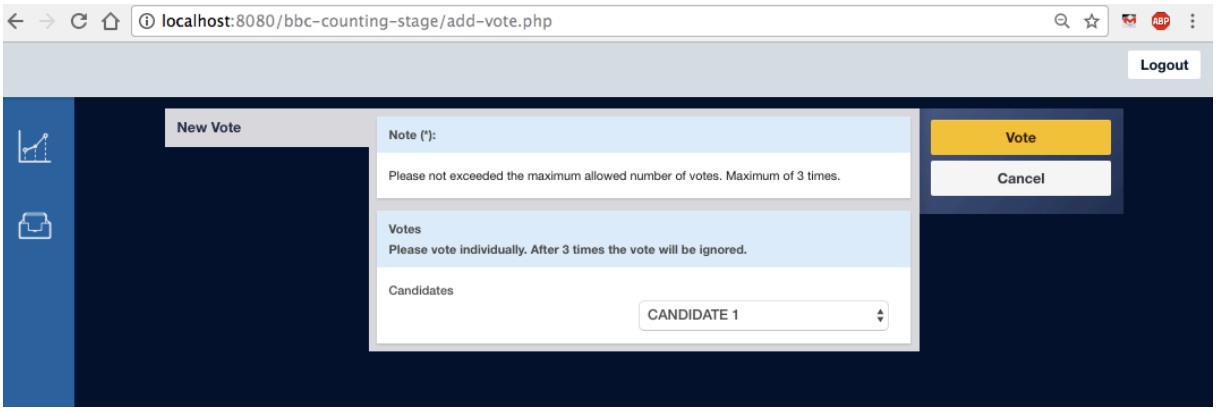
Each user will be able to vote after successfully registration compiling that form provided by a public link. (Local Public Link: *http:localhost:8080/bbc-counting-stage/add-user.php*)

3. Dashboard



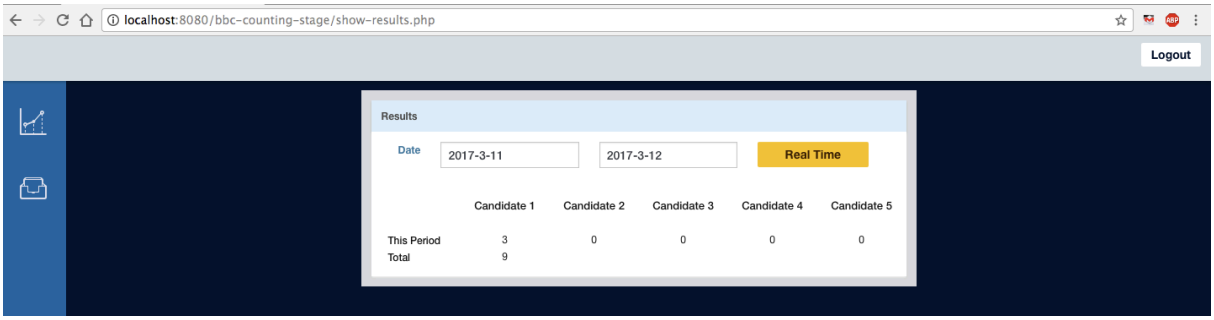
The user will be able to choice in Voting or Showing in real time the results.

4. VOTE



Each user can vote one of 5 Candidates. They are just static info to easily manage the data into Cassandra Database and Solr Core. After 3 times the user's vote will be ignored but it will be recorded on the database related to a Default User.

5. RESULTS



The user will be able to select a range dates and clicking through on Real Time button will be able to see the results for each candidate. Also the user can log out from the system clicking through the Logout button at the top corner on the right.

Missing Implementations with Solutions

- To show every second the results we could implement a javascript loop using ajax invoking the same function as the Real Time button. In that case we'll update that screen every second.

- The date range selection, provided in the showing results page, supports for now just date per day. Assuming the competition is just one day, that selecting date should supports time per hours and seconds.

- To test the showing results function within 1 sec, in term of performance, I thought to generate a script in Java to populate the Solr Schema with millions (10M) of records and to use JMeter to graph the response time. I'm assuming that Apache Solr Technology will provide high performance to satisfy that requirement.