# WebSAND – A Web-based Platform for analyzing structured dialogues on the Social Web

## Overview

WebSAND is a Web-based system for analyzing dialogues on the Social Web. The system provides a debating environment that aims to motivate people to participate in structured, goal-oriented dialogues. As a debating platform, it enables users to raise issues, ask their own questions, post supporting or counter-arguments, comment and vote. The overall objective is to offer different means of analysis of the debates, in order for the participants to obtain a complete picture of the validity and justification strength of each individual opinion expressed, as well as of the acceptance of the positions issued within each debate.

The platform provides a range of functionalities, the most important of which concern the creation of new topics of discussion, the evaluation of arguments with different metrics, and the analysis and visualization of various aspects of the dialogues. Searching and querying is also supported.



*Web Portal UI*

*User interface for exchanging opinions*

## Target Applications

The WebSAND targets any group or community (in areas like social communities etc.) that can share their experiences and ideas in order to help them understand the opinions that have been expressed through a structured decision-making process.

## Additional Information

The system uses an RDF-ontology for representing the argument map of any dialogue, stored as RDF-triplets in the Virtuoso repository. The user interface is implemented with Web technologies, such as HTML5, jQuery, JSON, whereas the Server Tier is implemented with Servlets and Java API classes.

Furthermore, the portal supports:

- **Structured dialogues**. An argument map consists of four elements: (i) issue, (ii) position, (iii) pro-argument and (iv) con-argument. Moreover, the debates proceed in two phases: the first one is an open dialogue where users share their opinions and ideas on a specific issue; the positions that attract significant acceptance by the participants' progress to the second phase by a moderator, who is charged with the task of supporting a more focused, high quality dialogue.

- **Argument Evaluation**. The system relies on a formal framework for evaluating the strength of arguments, called sm-Dice. The strength of each argument is calculated based on a multi-aspect evaluation that considers criteria, such as the correctness, relevancy and sufficiency of arguments. These criteria allow users to question or justify the reasons issued by other participants. Eventually, the score of an argument depends on these values, along with the interplay of responses given by other users, and comprises two values: the acceptance score and the quality score. The former denotes the level of conformity of the expressed opinion with that of the other participants, while the latter characterizes how well-explained or justified the argument is.

- **Analytics**. The analysis covers different information needs emerging from users, in order to summarize various aspects of a debate, focusing not only on arguments, but also on user profile characteristics. A collection of machine learning algorithms is applied for the clustering of features and the extraction of association rules, such as the Kmeans and Apriori algorithms.

- **Visualizations**. The WebSAND provides a way of visualizing dialogues and specifically the decision-making process through visualization tools.
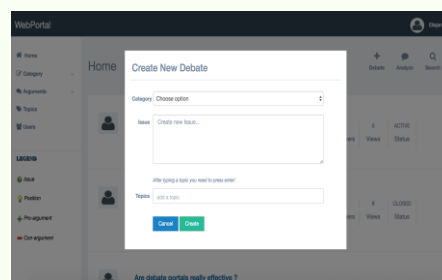


*Create new debate form*
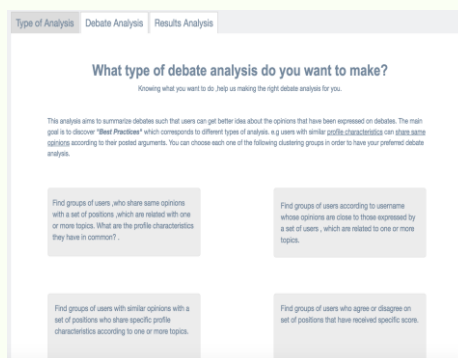


*Debate decision-making analysis*



WebSAND website
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