

A Crowdsourcing Approach for Observation of Drinking Water Supply System

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Drinking water availability is a varying factor in Sri Lanka due to weather changes, natural disasters, and the breakage of pipelines. In such situations, people tend to share information regarding a lack of consumable water availability through social networks. That information is decentralized and unorganized so decision-making is difficult. The objective of this study is to represent and summarize up-to-date spatial information of drinking water availability by providing a platform for commercial water utility companies that supply water and customers to meet up and getting the general public and social service involvement. A low fidelity prototype was designed to capture the concept. To test the usability of the solution, a high-fidelity prototype was implemented for a selected set of functionalities such as social login, social sharing, viewing, and filtering posts. The web application was developed using Angular 6, Node.js web framework, and Leaflet, a free JavaScript map library. The system provides dedicated interfaces for customers to post, view information, and the user-friendly interfaces for customers to send request messages without any failures. Each request is recorded together with the geographical location, time, and tag, a search key used to filter outposts. A case study was conducted to test and evaluate the functionalities of the system and the members of the Rotaract Club in Badulla were taken for the case evaluation. The thinking aloud method was used to collect feedback and to capture the user's thoughts while interacting with the system. Therefore, this system successfully provides a solution to the general public to gain attention on an arising water availability issue, and the commercial water utility companies are provided with a platform to advertise their services and identify areas with potential customers. A future improvement was suggested to adhere to the line and polygon data to achieve advanced Geographic Information System (GIS) features.

Keywords: Crowdsourcing, GIS, Web application, Water availability