

Researching the Internet, Lecturer of Yogyakarta State University Gained Doctorate

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Bandwidth limitation is one factor which often becomes obstacle in accessing information through the Internet. With limited bandwidth, the user will have difficulty in accessing the network that has a low connection quality.

Ratna Wardani, S.Si., MT, a lecturer of Faculty of Engineering, Yogyakarta State University (UNY), said that in condition of low connection quality, objective Quality of Service (QoS) approach has not been able to solve the problem of Internet access. This can happen because most Internet applications that are developed assume that existing systems have a good quality connection.

"This means when the QoS application's requirements cannot be met by the system, the application can abort operation without giving the user option. This makes users difficult to obtain a full application service on the situation of low quality connection," Ratna said in her open examination of Doctoral Program in Electrical Engineering, Monday (28/11) in Faculty of Engineering, UGM.

Ratna exemplified, the World Wide Web (WWW) and associated browser technology have not been able to provide support for Internet access at a low speed network environment because the browser is designed for environment with high quality connection. The browser is built to perform speed optimization with the assumption that the user can quickly respond to links that are displayed and modify the request if the result is not in accordance with the request. However, request and response model between user and browser cannot run properly if the user is browsing on the condition of low-quality connection. Ratna conducted research to address the issue of internet access in low-connection network environment with a user-oriented QoS approach.

In her dissertation entitled *User-Oriented QoS Framework for Internet Application*, Ratna explained the testing on QoS framework is done through building prototype which is applied to the browser and video streaming applications. The study establishes a mechanism of subjective QoS as basis of Internet application. The QoS framework integrates subjective QoS mechanism into the objective system so that the behavior of the application can be controlled to follow the requirements of subjective QoS and availability of objective QoS system.



"At this QoS framework, change in application behavior is determined by two conditions namely specification of user access and availability of resources," she explained.

The result shows that the implementation of QoS framework on Internet application including a series of tests showed specific mechanism of user access and service determination to QoS framework allows application behavior to adjust to the environment with low quality connection and subjective QoS requirements of users.

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