

ABSTRACT

Learning is an activity that contains interaction between teachers and students and two-way communication that takes place in educational atmosphere to obtain learning objectives. The rapid development of e-learning technology and the use of the LMS (Learning Management System) model have caused educational institutions in Indonesia to develop e-learning.

Telkom University itself already has a mobile application-based LMS. However, currently the application uses Cordova framework, this framework is not a native application, but a hybrid application that combines a native application approach and a web application that makes a mobile application, one of the weaknesses of this framework is the very large memory and CPU usage.

Telkom University's LMS Mobile Application Back end using the waterfall method has been successfully created, and can be used to carry out activities in the LMS. The application server's performance runs well and is able to receive all requests from the mobile applications based on the results of the six REST API performance tests in 10 sample trials, the server is able to receive a total average value of 4.6 requests/sec from all REST APIs. The application was well received by Telkom University students by getting a total average score of 4.0 based on the results of beta testing.

Keywords: *Learning, e-learning, mobile application, learning management system, waterfall.*