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E-learning is distance learning technology that involves the participation of Information and Communication Technology (ICT) in it. By using e-learning, learning process becomes more efficient, where lecturers and students do not have to be in the same room and even at the same time. There are two types of delivery methods of e-learning, synchronous methods and asynchronous methods. In the synchronous method lecturers and students are in the same time but in different places. While the asynchronous methods lecturers and students in time and different place. Synchronous method is represented in the form of video conferencing and asynchronous methods are represented in the form of streaming video.

In this final project the implementation of e-learning is by integrating synchronous and asynchronous methods. The system tested the performance by comparing the number of users who access. Measurements were taken 30 times. Besides tested of system performance. Its validity tested system by spreading the questionnaire to 30 respondents.

From the performance test results obtained throughput values are smaller with the number of users and increase in value in the amount of background traffic 65703467 - 56.980364 kbps for video conferencing and 62.52370133 - 60.180364 kbps for streaming video. The value of delay of 205.2960317 - 385.1951969 ms for video conferencing and 92.34398667 - 130.2897867 ms for video streaming, jitter value of 4.2796 - 13.1207 ms for video conferencing and 3.1561 - 9.758013333 ms for video streaming and packet loss value of 10.71133333 – 26.26366667 % for video conferencing and 7.125333333 – 15.505 % for video streaming. While the validity of the results obtained system that 40% of respondents agreed with asynchronous methods, whereas 57% of respondents are interested in synchronous method.

Keyword : e-learning, asynchronous, synchronous