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*Performance analysis of three open source library management systems on parallel searching using Z39.50 protocol**

To cater to the growing information needs of patrons, the libraries must resort to automation and networking. With the use of computers, libraries can cooperate with other libraries and possibly can share collections. By using the Z39.50 protocol in networking, distributed data management is combined and accessed by the users in just a single search across multiple resources, thus called parallel searching. Different library management systems can be connected to each other through Z39.50 protocol. The issue in parallel searching is that the performance in simultaneous search in several databases is relatively slow compared to single-database searching. Response time and recall are the performance factors to consider. This paper identified the best open source library management system in parallel searching. The criteria for evaluation were recall and response time. This paper also described the factors that affect the response times and recall of the library management systems in parallel searching. Results showed that indexes, table structures, query statements, and volume of data significantly affected the response time and recall of the three library management systems. Among the three library management systems tested, OpenBiblio was faster than Koha by 34.87, and Koha was faster than PhpMylibrary by 26.90 in terms of response time. In recall, both PhpMyLibrary and Koha had the same total recall value of 50.31, while OpenBiblio suffered a low recall value of 46.24.

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