ABSTRACT

Outdoor sports that are popular among young people and even older individuals include mountain climbing. Climbing mountains brings climbers closer to nature. However, not all climbers are aware of the fundamental safety measures when on mountain trails. In this context, this research aims to design and implement an interface system for emergency communication devices. This system is designed to facilitate climbers in reporting emergency situations in real-time to rescue teams, as well as enabling direct communication and accurate location sharing.

The proposed steps in this research include developing an interface system on emergency communication devices with live chat and location-sharing features, as well as creating an attractive and efficient website so that climbers do not encounter difficulties in using it. The limitations of this study include the website's dependence on the active condition of the emergency communication device and the users' ability to send messages and share locations.

Based on the website testing conducted using QoS analysis with the TIPHON standard, considering the parameters of delay, throughput, and packet loss, the results show varying performance across different pages. The home page recorded an average delay of 45.73 ms, a throughput of 3.74 Mbps, and 0% packet loss. The sign-up page had an average delay of 35.01 ms, a throughput of 1.4 Mbps, and 0% packet loss, while the login page showed an average delay of 40.68 ms, a throughput of 1.3 Mbps, and 0% packet loss. The admin dashboard page exhibited an average delay of 44.98 ms, a throughput of 2.82 Mbps, and 0% packet loss. Meanwhile, the registration form page achieved an average delay of 29.74 ms, a throughput of 1.9 Mbps, and 0% packet loss. Lastly, the chat page demonstrated the best performance with an average delay of 23.01 ms, a throughput of 1.5 Mbps, and 0% packet loss. The Share Location testing was conducted at Mt. Lorokan and Mt. Penanggungan, starting from a distance of 100 meters up to 500 meters from the basecamp. The results obtained were in the form of a Google Maps link that appeared in the chat column of the emergency communication website.

Keywords: *Interface, Website, Climbers, Mountain*