

ABSTRACT

To reduce the prevalence of private vehicles on campus, Telkom University (TelU) provides four shuttle car fleets to facilitate transportation within the campus, known as the Telkom University Car (TUC) service. Some issues such as uncertain schedules, limited route tracking information, and a lack of bus operational monitoring lead to instances where students still walk to a building that is also covered by one of the TUC routes. This research aims to develop a bus tracking and monitoring application for the campus bus service at TelU by designing an architecture. The chosen software development method is the prototyping approach, consisting of four stages: identifying needs, designing prototypes, review and feedback, and product implementation and maintenance. This research primarily focuses on the development of the application prototype. During the needs identification stage, a qualitative research method was used through interviews with process owners, users (students and faculty), and drivers. The results of the initial stage include the acquisition of requirements, which serve as the foundation for developing functionalities. The prototype design stage produces an initial prototype, serving as a visual tool for communication with process owners and drivers. The review and refinement stage of the prototype result in an approved prototype by stakeholders, forming the basis for application development in the product implementation stage. The architecture has been successfully designed by incorporating input from each stakeholder, illustrating the interconnections between each stakeholder's perspective. Additionally, this architecture has also been successfully installed at Telkom University's TUC shelters. As a result, students now have more accurate information about the arrival of TUC at the shelter compared to before.

Keywords: campus shelter, prototyping method, green campus, tracking application, sustainable transportation