

ABSTRACT

Transportation is a human need to move from one place to another place. In Beijing, almost half of Beijing population uses public transport than using their private transportation because to use public transport cheaper than using private transportation. Factors from the impact of the lack of interest people to use public bus because of service and system less than other public transportation, such as uncomfortable bus station, no information system about bus arrival time, and especially for foreigners who do not understand the Chinese language and often complain because there is no facility using the English language in the public bus services.

The application of Estimate arrival time of public buses is very important for people who want to track the public bus accurately and get the information about the arrival time of public buses or all information about the public buses. This application can run on the Android smartphone. In this application, there are two actors namely users and drivers. This application using waterfall method for system design development and data collection method using real data by using registration of the account.

In this application, the developer using one algorithm to build the system namely *Contraction Hierarchies (Shortest-path) or Dijkstra's algorithm* for tracking the buses for finding the routes of buses. The system to be built is that can provide information effectively, quickly and accurately. In order for these solutions to be achieved, then the system is built on android mobile by applying the system of tracking and estimate the arrival time of public buses.

The results of our experiments show that our proposed method has better predictions than existing applications, with the probability of accuracy of users not to miss the bus and knowing the existence of the bus reaches 92%.

Keywords: *Estimate Arrival Time, The Public Buses, User & Driver, Smartphone Android, Contraction Hieararchies, Dijkstra's algorithm.*