FACULTY OF COMPUTING
UTM Johor Bahru

SECP1513-04 J

SEMESTER I 2023/2024

TECHNOLOGY & INFORMATION SYSTEM

DESIGN THINKING PROPOSAL

SMART CITY - IMPROVEMENT OF JOHOR BAHRU'S PUBLIC TRANSPORT SYSTEM

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Client Background: We Tech is targeting clients who use and practice public transportation on a daily basis. Many people use or prefer public transport for a variety of reasons, such as students and elderly people who are unable to drive, who rely solely on public buses to move around the city. We Tech is committed to improving the efficiency and reliability of the public bus system in JB, in order to improve the citizens' quality of life.

Existing Technology: The current public bus transport system is largely known to be traditional and straightforward in nature, as the driver and passenger still carry out the process by hand. At the bus stop, passengers wait until they are able to identify the bus they wish to board and signal the driver to halt. Upon boarding, they inform the driver of their intended destination. Subsequently, the driver will calculate the fare and issue a ticket to the passenger.

Client's Problems: The issues start to arise due to the unpredictability when traveling by bus. First, passengers must wait for an indefinite period of time at bus stops, as there is no way to ascertain the current location of the bus. Furthermore, there are instances where the driver may skip the stop, resulting in an extended wait for the next bus. Second, it is challenging to identify the number of a bus if the same images and colors are visible, particularly from a distance. This is a particular issue for bus stops situated on highways, as the bus is traveling rapidly. Passengers would be uncertain as to whether or not to stop the bus, as they are unable to identify the bus number. Third, the prices of bus fares are highly irregular and reliant on the driver, with the likelihood of the driver charging more than the stated fare. Lastly, the bus numbers, routes and departure times are not regularly updated online, making it difficult to obtain information about them and to determine which bus to take if one is new to the area. This can lead to passengers making mistakes, such as boarding the wrong bus or stopping at the wrong bus stop.

Solution to Problems: The first stated issue can be solved by setting up a live location tracker on every bus that can be easily monitored publicly. This will drastically reduce the waiting time of the passengers because with this feature, they will be able to know when the bus will arrive. Second issue can be solved by providing the user with the ability to reserve pickup points at the bus stops, thus informing the bus to only stop at the required bus stops, and to collect the passengers who wish to board. Third issue can be solved by introducing an automated payment system. This system requires users to check-in when they board the bus and check-out when they get off. The price is determined by the distance the passengers have traveled on the bus. The last issue can be solved by providing the routes of all buses in detail on our website, which is constantly monitored and updated. To further reduce the scope of errors and inaccuracies, we implement a feedback and report system.

Solutions' Benefits: If the proposed system is implemented correctly, it will enhance the performance of the drivers and the passenger experience while traveling by public transport. Drivers will be able to perform their tasks with ease and efficiency, while the passengers will be able to use the public transport efficiently and without worrying about time or unpredictability. We Tech believes that significantly improving the public transit system is a major step towards the development of a fully-fledged Smart City.