

KMTPravas: A Proposed App on Automation of the Kolhapur Municipal Transport System

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ABSTRACT: According to Regional Transport Office (RTO), Kolhapur the numbers of vehicles projected to be registered in the year 2021-22 under 11 categories is 16,44,019 and it will be ever increasing [1]. This has led to traffic problems, increased emissions and heavy pollution. According to a survey of Maharashtra Pollution Control Board the quality of Air and the Oxygen in it in the Kolhapur city has decreased constantly [2]. Thus to cope up with such problems and other, the Researcher has proposed to develop a roadmap to build a Automation App for the Kolhapur Municipal Transport (KMT).The Researcher would create the application system with an objective of increasing the use of Public Transport by public, which would ultimately lead into reduced number of vehicles on road of Kolhapur, less pollution and less traffic too. The Researcher's App would prove beneficial in various ways 1.It would provide online seat booking facility for the Customer 2.The Customer would track the real-time location of the Bus 3.It would provide other features like Online Payment, Luggage plus Accident Insurance 4.It would also provide the current number of travelers and personalized facilities for them.

LITERATURE REVIEW:

Kolhapur's population graph has seen a steep rise from the previous few years due to people moving from places across the country to Kolhapur. Kolhapur's roads are suffocated with the traffic and are finding difficulty accommodating them. Transport from the nearby cities and towns are a bonus to it. There is a significant movement of a substantial number of residents across these cities and towns for the purposes of education, work and healthcare etc. People travel through these cities seamlessly causing congestion and traffic jams at big traffic signals. The everyday city planning issues faced by the Municipal Corporation, Kolhapur include, traffic jams, poorly made roads, insufficient public transport services, growing transport demand and air pollution. The rapidly increasing population signifies the increase, vagueness and the every expanding nature of the transport system in Kolhapur. Its signifies the insufficiencies and inadequacies of the authority to handle the same and makes the draw attention to it. The Kolhapur Municipal Transport was established on April 1st 1962. It lends its pick and drop services in and around Kolhapur city and covers the radius of 15 to 20 kilometers of area around it. According to the JNNURM Project the KMT undertook 75 busses in 2013 and has around 129 Buses in total at current instance and they run on 28 routes. There are total 5 Control centers through which the 129 Buses are controlled [3].

The alternative for the overcrowded Buses are the Auto-Rickshaws and Taxis in Kolhapur. With 19286 and 1606 in number they work in full flow [1]. Though there is a sufficient amount of travellers that travel through Autos and their own private vehicles the Medium and the Poor class opt for Municipal Transport. Also from a different aspect and that of the Researcher, the KMT needs to be upscaled and updated by the latest technology. So keeping this in mind the Researchers has opted to create a Mobile Application that would bring the whole KMT System Online and full of features.

INTRODUCTION:

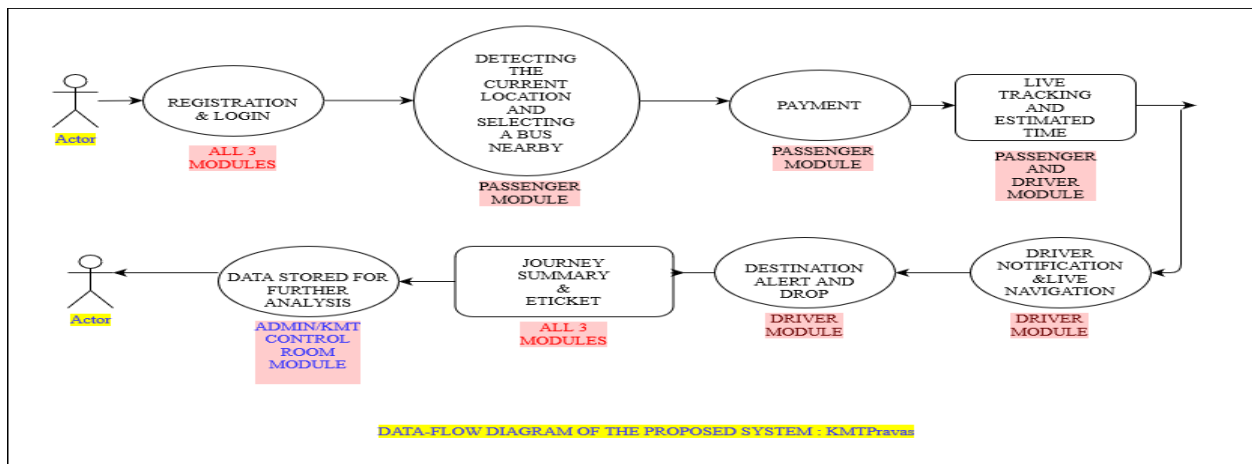
Kolhapur Municipal Transport is the life-line for thousands in Kolhapur, especially workers of all categories, students of both College and School and others. It is a gift for the middle and lower class passengers who cannot afford high priced transport facilities. The KMT has been an offline system for long and it has certain drawbacks which are following: A) Live Tracking is not available, this causes the passenger not been able to locate the Bus. B) Online Payment is not available, this may lead into payment or ticket related issues. C) No well Notification System, this may cause time and other resource wastage of the passenger. For this problems the Researcher has been researching to create a system that would automate the KMT services. The application is proposed in such a way that the Passenger Information is been fed to the control room and vice versa. For this the Cloud servers are used and data is stored on Cloud Based Real time databases. All the Notification would be displayed on all the 3 modules i.e. 1.Passenger Module 2.Driver Module 3.Administrator in the case KMT Module. The 3 modules would work in collaboration and in real time.

PROPOSED SYSTEM:

The Researcher’s proposed system i.e. KMTPravas would be divided into 3 Modules or Categories

Passenger Module B) Driver Module C) Admin/KMT Module. In the Passenger module the passenger would have all the Registration and Sign-In facilities. After while he/she will be led to a Map Interface which would show his current location and the buses around him. The Passenger would book a Bus around him at any instance. He / She will be notified with the Bus Number, the current location of the Bus, the directed route, the fare price and an E-ticket on His / Her Device. In the Driver module, the driver of the vehicle would get a notification once there is a passenger waiting at a certain Bus Stop. Once the Passenger enters the Bus it would notify the driver in his / her App and the journey would resume. On the drop location he will get a notification of it. Through the whole way he will be directed by the map. The third module i.e. the Admin/KMT Control Room Module would monitor the whole Activity and running of the whole system. If there are any problem related to the Driver or Passenger module, it would report it and get to a solution as soon as possible.

Fig 1.1 shows the flow of the KMTPravas App using a ‘Use-Case Diagram’. The System runs cordially together at the same time using the three modules i.e. Passenger Module, the Driver Module, and the KMT Control Room Module



TOOLS AND TECHNIQUES:

The Researcher is planning to use Dynamic tools for the creation of this software. The more zestful and vigorous tools and techniques used the greater enhancement in functioning and usage of the Application. Following are the tools going to be used for the creation of our software:

- A) Map Service Provider: The Researcher has preferred MapmyIndia tools for navigation and location based features because this is a made in India company and promotes the Aatmanirbhar Bharat Initiative. Other than that its accuracy of navigation and geolocating services in every corner of the Indian villages and cities is more than satisfactory.
- B) Cloud Service Provider: The Researcher would prefer either AWS Cloud Services or Google Cloud Services. These cloud service tools would be selected because of their all-time availability, pay as per use feature and automatic scalability.
- C) Payment Gateways: The Researcher would prefer Instamojo or Razorpay as its payment gateway platforms which would be used to pay for the ticket. This tools are used for their security features, fast transaction processing capability, and after-transaction follow-through.
- D) Languages and IDEs: The Researcher has selected the Java language and the Android Studio Platform as most of the population in the area owns Android-OS Smartphones.

CONCLUSION:

The Researcher presumes that the project is achievable with all the resources at hand. This system would be made in collaboration between the KMT and the Researcher's company. He also has the faith that the KMTPravas App would receive immense support and motivation. The Researcher would like to ensure the users, that the app's look and feel would be dynamic at the same time simple and straight. Because of the tools used to build the system, it would never or less likely to be down in operation which may occur due to huge usage traffic or any other reasons. The payment process would be smooth in working and the user would experience no issues. Beside this functionalities the main serving factor or the motive behind this app is that the people of Kolhapur City would feel ease and satisfactory using this automated Kolhapur Municipal Transport System.

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