Transit Pakistan

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ABSTRACT
Karachi is the biggest city of Pakistan, whose population is about 14,500,000 inhabitants [1] with more than 2 million people commute through public transport each day. Yet vast majority of these commuters have obscure or little information about public transport routes, rides & fairs. We believe that people should have access to all transport information for their destination. Transit will enable people's access to public transportation information like bus routes along with other cost-effective travel options like cab service. This will empower commuters and increase the reach of urban transport.

Once the goal of Transit Pakistan is achieved in Karachi, we will expand its circle to other cities around Pakistan with induction of other transport means such as By Air, Trains & Metro.

Keywords
Commuters, Transport, Routes, Rides.

1. INTRODUCTION
Everyday around two million residents of Karachi uses public transport [2]. There are a number of options available to these commuters including Buses, Mini Buses, Coaches, Chingchis, Rickshaws & Taxies. Yet an average commuter still wastes around 20 minutes per day waiting at the bus stop doing absolutely nothing which amounts to wasting 10 days per year. Moreover, vast majority of these commuters have obscure information about public transport routes.

With access to all transport information, people will be more likely to choose the best option available to them to travel to their destination. This will empower commuters of Karachi to be more reliable on public transport which in return will enhance the reach of public transport too.

2. PROBLEMS
Commuters of Karachi are facing transport problems on regular basis. Our research notified us of some problems that can be solved by Transit. These problems are listed as.

2.1 Obscure Information
The main cause behind almost major transport related problems is the obscure information of commuters. Commuters either don't have relative transport information or either are not sure of it.

2.2 Waiting for Selective Buses
The research also indicated that most commuters are wasting around 20 minutes at bus stops waiting for their selective buses to arrive while doing absolutely nothing. This amounts to wasting 10 days per year.

2.3 Misguidance
This problem often happened to people who are either new to public transport of Karachi or either going to a distant place of Karachi for the first time. People often gets misguided because they asked the fellow commuters who may not be able to guide them correctly.

2.4 Lack of Transport Apps
Even in this digital age where almost everyone has access to smartphones, there are not a single app that is targeting public transport of Karachi.

3. STRATEGY
Transit Pakistan is being developed to solve these uncertainties associated with Karachi's public transportation. Transit will enable people's access to public transport information like bus routes along with other cost-effective travel options like cab service. The project will cover public transport routes, ride options, cost effective route & ride option, average time for each route along with a responsive highlighted visual representation of route on Map.

4. METHODOLGIES
We are using following methodologies to develop Transit Pakistan. These are further discussed in Project Report.

4.1 Platform

We have selected Android platform to develop Transit since it is more common in the commuters of Karachi's public transport. Initially Transit will be developed for Android but we have plans to take it to Web based application & then to iOS.

4.2 Data Collection Research

Transport related information is being collected in this phase. The research includes getting information from public transport agencies & local transporters as well as Karachi Transport Authority. Information related to Routes, Rides, Fairs & Average Time was collected in this research. This data is then feed into Transit tool which converts this information into XML component & uploads it to Information Processing Server.

4.3 Backend Data Structure

We are using a combination of MySQL & File System DB as our Information Processing Database. This server will process queries & return the results based on the algorithms.

4.4 API()

Information Processing Server of Transit then accessed via API. We used PHP to develop API which processes queries & returns results in XML object format.

4.5 Mobile App

The end user will use this App by entering his starting and destination point details. The App will access this API & will return information to user.

4.6 SMS Service

If the commuters don't have access to any smartphone, they will have the option to use Transit's SMS service. Commuters will simply send a message containing their Starting Point & Ending Point to Transit's SMS service number. This service will then process the message & will send back the suggestions in plain text format.

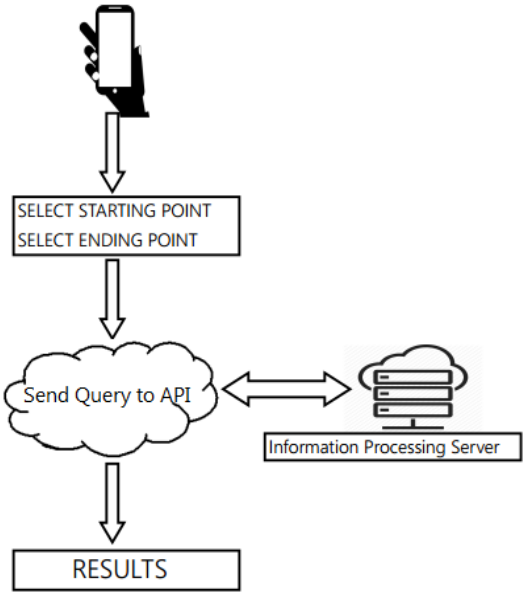

Figure 1 - Transit's Process

Figure 1 illustrate the general process of how Transit Pakistan's System will work to produce results for user's queries.

5. Conclusion

Transport is the backbone behind the largest GDP generating city Karachi, so the problems faced by 2 million of its commuters need to be addressed. Transit will play an important role in minimizing the problems related to informations of routes & rides. Not only will this enhance the people's reliability on public transport but it will also increase the reach of public transport. After the success of Transit's system in Karachi, other cities around Pakistan will be incorporated into the system one by one.

6. References

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