

PROJECT PROPOSAL

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1. Title of the project : YAMUCOLOMBO

2. Overview of the Project

Choosing the correct bus route to travel somewhere is not an easy thing specially if you are not familiar with the area. As a solution this is going to be an android application where you can find bus routes to travel from a place to another in the Colombo suburbs.

Here the user will have to select the starting place and the destination. User can either select a place on the map or else take the current location through GPS. Then the application will find the optimum routes and display them so that the user can choose one of them. User can comment on the route and confirm the time duration of the journey which will then be used to find the best route next time. User will be able to view the current progress of the journey on the map.

3. Objectives of the Project

- Design and implement a bus route management system for the passengers.
- Provide user friendly application to find the best bus route between the destinations.
- Give the users a choice to decide upon which route is suitable
- Optimize the reliability of the application through using past user experience information.

4. The Need for the Project

When people travel in a large city like Colombo where there are huge number of bus routes, it is not easy to find out which bus they should get on to reach the destination. Even though some may know some routes, there can be much easier, cost effective and low time consuming routes that they are not aware of. Suppose someone knows all the routes, even though he/she may not sure which route would be better at the time. Therefore this application helps all the people in those categories. This will help them to save the time and money and above all it will save them from getting lost.

5. Scope of the Project

The users of this system will be all the public who wants to travel in Colombo suburbs by bus.

- Users will be able to select the starting point and the destination of the journey and search for buses.
- Users will be able to mark only the destination on the map and the starting point will be taken by the application automatically through GPS.
- Users will be able to find out what are the buses that travel near to their current location.
- Once a user searches for a route in any of the methods, he/she will be given all the possible routes [4] which can be used to reach the destination.
- Users will be able to decide a route upon the time, cost, distance and traffic at the moment.

- Once a route is selected, he/she will be shown the map with the current progress of their journey.
- At the end of the journey, the duration the journey and time of the day will be confirmed and the user will be asked for any comments about the selected route (Traffic Conditions, etc.).
- These time details will be used when another user searches for the same route to find optimum route. Route suggestions will be calculated considering the durations of the previous users and time of the day which they travelled. Then that person will receive more reliable information because it is calculated from previous user experience. Algorithms will be optimized to avoid false information from the users.
- Once a user select a route, they can view the comments of the previous users on that route and get an idea about the feasibility of the route.

6. Deliverables.

- This will be an android application for the users to find the bus routes.
- There will be GUIs with google maps to select the starting point, destination, to view the current location and to view the progress of the journey.
- All the route calculations will be done through a web server where the database will be hosted.

7. Overview of Existing Systems and Technology

There is an existing application on Google Play Store [3] which is much similar to this one. But from the user experience that app still have some issues in giving the correct path. Moreover it does not produce the routes which is low in distance and cost effective. It just gives all the possible routes with some of the main bus stops. Therefore it also does not have the feature of considering past user experience for suggesting the best route.

This proposed application will be an android application and the location details and paths will be taken from Google map APIs [2] and Google Places APIs [1]. For the server side, PHP will be used and MySQL database will be used to store the relevant data and information. Android Studio [5] will be the main tool for the development of the application and various other tools will be used for documentation purposes.

8. References

- [1] "Google Places API," Google, [Online]. Available: <https://developers.google.com/places/android-api/>. [Accessed 06 March 2016].
- [2] "Google Maps Android API," Google, [Online]. Available: <https://developers.google.com/maps/android/>. [Accessed 06 March 2016].
- [3] "Colombo Bus Route," Google Play, [Online]. Available: <https://play.google.com/store/apps/details?id=cbr.arima&hl=en>. [Accessed 06 March 2016].
- [4] "Algorithms to find routes," StackOverflow, [Online]. Available: <http://stackoverflow.com/questions/483488/strategy-to-find-your-best-route-via-public-transportation-only>. [Accessed 03 03 2016].
- [5] "Android Studio," Google, [Online]. Available: <http://developer.android.com/sdk/index.html>. [Accessed 03 03 2016].