Dynamic Travel Recommendations for Tourist Using Google Map API

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Abstract – Tourists can experiment when they are visiting a place instead of knowing how they manage or plan their vacation. The growth of world tourism has had a constant development over the past 50 years. The proposed system is, the user can indicate whether traveling by car or walks. Second, user can choose city area to visit, as well as the maximum distance at which he want to move. Third, our application will generate the shortest route to follow. From this set of selected places our application determines the shortest path using the traveling salesman algorithm. Generation of custom path is integrated, allowing user to have Google maps with all places to visit with a true an accurate location. It allows the user to display maps of tourist places in real time using Google map API. Next, The Transit Score algorithm calculates a score for a specific point by summing the relative "usefulness" of nearby routes. Experimental results demonstrate that the proposed approach is able to generate better recommendations.

Index Terms – TSP, Transit Score, Smart Tourism, Google Maps API.

1. INTRODUCTION

Currently, the people mobility is a key component in modern live of XXI century, facilitated by novel applications and new technologies. One of the opportunity niches with greater potential for growth due to these new technologies is occupied by tourism. Furthermore, we must consider that our society is a potential consumer of daily technologies such as: mobile devices, mobile applications, gadgets, etc., which have conquered an important place in the range of our basic needs1. That's why day by day application developers oriented to this kind of technologies, are performing the task to create and to innovate more applications, which can be used by people who own such technology and for all those who are part of our society. Considering that for many years tourism has experienced continued growth. And its deep diversification has become a sector with the highest economic growth in the world. This dynamism has meant that tourism will become the key element for socio-economic progress

Our main purpose is to know about the effects that tourists can experiment when they are visiting a place instead of knowing how they manage or plan their vacation. On the world stage, tourism presents compelling numbers. The growth of world tourism has had a constant development over the past 50 years. From 25 million tourists to the early 50s up to 673 million tourists in 2000, which meant that multiplied 26 times in that period. The World Tourism Organization (WTO - for its acronym in English) predicts a long-term growth of 4.1% by 2020, and is expected to reach the amount of 1.5 billion tourists for that year. A typical example of how tourists act to get to visit a city shows that they use some tools such as maps, guidebooks, public transport timetables, opening hours of museums, institutions, among others. For this reason it is necessary to know the problems faced tourists and the decisions them must make when visiting any place. Another important aspect is to analyse all particular solutions they take while traveling. Finally, it is important to discuss the possibilities of new designs based on new trends.

Some aspects that are important for any tourist application are: A list places and relevant aspects that tourists can visit, with its corresponding phone number, opening hours, and if it is possible the approximate cost of admission. Also, we must note that planning a route using a common map is too difficult, so that the ideal would be to conduct a search of the path from a device having a map and a kind of Guide book, which was 100% portable and could function together. As we know, good tourist technologies are not just those that make them more efficient for tourists but also to make tourism more enjoyable.

2. RELATED WORK

Google Maps, offers a wide array of APIs that allows users to insert the most complete functions and daily use of Google Maps on your own website and in your own applications and place on top their own data on them. In our case, we used this API to complement and make our application offers users a high and very efficient quality service for your needs as a

tourist. Within the broad range of APIs offered by Google Maps, we have used the Static Maps API because it allows users to insert a Google Maps picture quick and easy in your web pages or mobile sites without using JavaScript or charging system dynamic pages. Google Static Maps service will create your map from URL parameters sent through a standard HTTP request and a bitmap image will be generate to display it. About the usage limits it can be mentioned that using Google Static Maps API is subject to a limit of only 1,000 image applications (different among them) per visitor each day. Moreover, application of identical images, generally, does not count while calculating the number of times that the user has been connected. If you exceed the limit within 24 hours or if you abuse of the service, Google Static Maps API could stop working temporarily if the limit continues being exceeded, access to Google Static Maps API can be blocked. The URL of static maps has a limited size of 2,048 characters. In practice, probably you will not need an URL larger than these, unless you wish to create complex maps that include a large number of markers and routes.

Google Static Maps API returns an image (GIF, PNG or JPEG) which is a mosaic of several images that make up Google maps, as a result of an HTTP request through a URL. For each application will have to specify the map location, the size of the image, zoom level, map type and position of optional markers in specific locations on the map. As we know maps to mobile devices presents several challenge. Since usually the real space on the screen is small, maps used on the desktop can be too detailed for using them in a mobile device. In addition, many of the most complete mobile devices have higher resolutions for your screen size, so that, for example, the text often appears in smaller font sizes. This is why it is important to note that within URL it is specified if the map to shown will be displayed on the screen of a mobile device, It is an example that shows the connection of our application to Google Maps and it displayed on the device display the mosaic (portion of map) requested.

3. PROPOSED SYSTEM

In this project, to implement the single way of routing in Google map that is, generated by using Traveling Salesman algorithm. Then also implement the multi way of routing in Google map generated by using Traveling Salesman algorithm. To propose a new methodology for better recommendations that is Transit score methodology. The Transit Score algorithm calculates a score for a specific point by summing the relative "usefulness" of nearby routes. We define usefulness as the distance to the nearest stop on the route, the frequency of the route, and type of route. To calculate a raw Transit Score, we sum the value of all of the nearby routes. The value of a route is defined as the service level (frequency per week) multiplied by the mode weight (heavy/light rail is weighted 2X, ferry/cable car/other are 1.5X, and bus is 1X) multiplied by a distance penalty. The distance penalty calculates the distance to the nearest stop on a route and then uses the same distance decay function as the Walk Score algorithm.

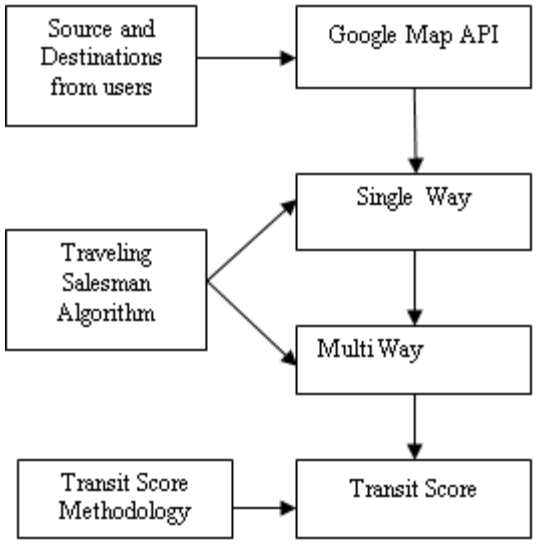

Fig 1 Flow Diagram

4. EXPERIMENTAL RESULTS

In Figure 2, shows that the single way generated that the user gives source and destinations

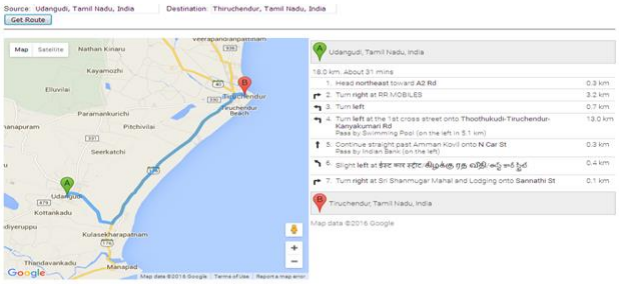

Fig 2 Single Way

In Figure 3, shows that the multi way generated that the user gives source and destinations details, using traveling salesman algorithm for finding optimal route

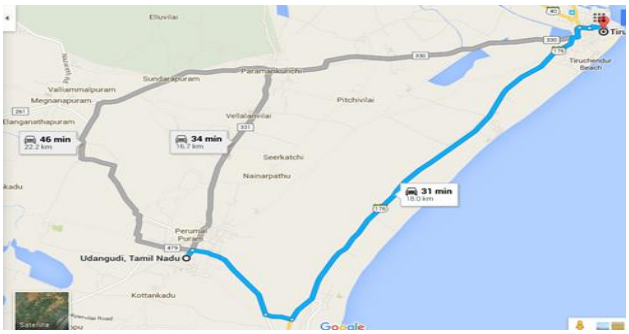

Fig 3 Multiway

In Figure 4, shows the transit score calculations for car mode

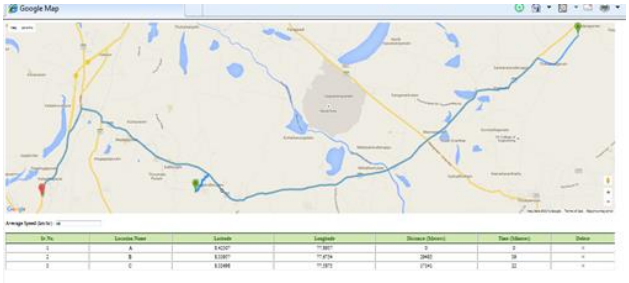

Fig 4 Transit score

5. CONCLUSION

In this project, single way, multi way and transit score to be implemented. To have presented two alternative interfaces, traditional and minimalist. The aim of developing two different interfaces is to receive feedback on acceptance that each one of them. The minimalist interface had greater acceptance in the taste of users. The interaction with brief textual interfaces was better accepted. On the other hand, the traditional interface (based on icons) was accepted as any other current interface, i.e., is an interface that the user perceives naturally.

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