Multiple Destination Map with Services

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Abstract: The main objective of the web application MULTIPLE DESTINATION MAP AND SERVICES is to provide the users with the facility to input multiple destinations in a single tour. It enables the users to choose shortest path among its multiple given choices. In addition to this user will get the services that they need while travelling such as hospitals, mechanics, gas stations, accommodations etc. on one click. The web services provide the users with the add-on facility of saving and printing the map output as per the desired input by users. Even the users have the facility of sharing the map with the other users too so that it would be easy for them to make their route even much better and can even plan their return journey also. User friendly UI having Auto complete drop down location list, toggle destination buttons, quick buttons for various other features will make the use of b application very handy. As it's an online Application it is developed using Google services API, PHP and JavaScript whereas Xampp database is used as a data warehouse.

*Keywords***: Google Map, XAMPP, Google Navigation Service Introduction.**

I. INTRODUCTION

Interactive web mapping services described in this paper is the MULTIPLE DESTINATION MAP WITH SERVICES web application. Google Map API is access by a Google API key, and thus allows accessing the Google Map. Google Map APIs support HTML, JavaScript and XML enabling the developers to create the custom applications. This paper seeks to provide the Software Requirements Specifications for the MULTIPLE DESTINATION MAP AND SERVICES. The purpose of this paper is to provide the users with the facility to input multiple destinations in a single tour. It enables the users to choose shortest path among its multiple given choices. In addition to this user will get the basic as well as emergency services that they need while travelling such as hospitals, mechanic, accommodations etc.

The services differ as per the user's profile. If the user is travelling by his vehicle and meanwhile his vehicle seeks the mechanic facility he can access that service from the web application. The users can even be of the domain like Medical Representative, Business professionals, Visitors etc. The desired services are provided to them as per their needs.

II.SURVEY

A. Literature reviewed:

Different users were surveyed as a user can be a doctor ,engineer, a traveller, a photographer, Medical Representative, Business Professional etc whose needs are all together different from each other like a doctor and MR are interested in the near-by hospitals and clinics whereas a business professional are interested in companies or institutes etc.

GPS abbreviated as (Global Positioning System) is a device that makes navigation in unknown terrain easier [3], along with the basic services such as hospital markers, public transportation, real estate, GSM and some other domains.

B. Literature review of the technologies:

IBM Mobile First: is a set of mobile solutions for businesses offered by the information technology company IBM.IBM launched IBM Mobile First, a mobile strategy that enables clients to streamline and accelerate mobile adoption. IBM Mobile First combines IBM's industry expertise with mobile, big data and analytics, cloud and social technologies to help organizations capture new markets and reach more people. IBM Mobile First has a set of mobile solutions in different industries such as Banking, Insurance, Retail, Transport, Telecom, Government, Healthcare and Automotive.

Phone Gap: It is a mobile application development framework created by Nitobi. It enables software programmers to build applications for mobile devices using JavaScript, HTML5, and CSS3, instead of relying on platform-specific APIs like those in iOS, Windows Phone, or Android. It enables wrapping up of HTML, CSS, and JavaScript code depending upon the platform of the device. The resulting applications are hybrid, meaning that they are neither truly native mobile application nor purely web-based. Mixing native and hybrid code snippets has been possible since version 1.9.The software underlying Phone Gap is Apache Cordova and it is open-source software,

The core of Phone Gap applications uses HTML5 and CSS3 for their rendering and JavaScript for their logic. HTML5 now provides access to underlying hardware such as the accelerometer, camera, and GPS.

We have gone through two technologies namely IBM Mobile First and Phone Gap as stated above and we have found that phone gap is more viable in creating the hybrid (i.e. neither purely native nor web based) application.

III.ANALYSIS

We started collecting information by browsing the internet for searching information about the existing Google Maps, collected data regarding the various travelling services, Understanding the drawbacks of the existing systems and searching new technologies available and adding the new add on features to the proposed system of Multiple Destination Maps with Services.

We had a detailed discussion on the technologies that could be used for developing the system such as Phone Gap and Mobile First platform. The languages Used are JavaScript, PHP, CSS3 and HTML5.

User should know proper usage of mobile with Internet facility. The users interface required here are the browsers like Google chrome, Internet Explorer, Mozilla Fire Fox for web application.

On June 29 2005, Google launched own API procedure to let the people, who have interests in Google Maps, voluntarily develop Google Maps services [4].

Proceeding further to the organization requirement which stated that the input required for this application are multiple destination, along with additional services like Mechanic, Commodities stores, Restaurant, ATM etc. will be provided as per the profile of the user. We have integrated the Google API.

IV. PROPOSED SYSTEM

In this proposed system we are thinking about how applicability can be smooth, user friendly and time optimized. Our system will be web based application (best viewed in Chrome and Mozilla) as well as mobile application for Android OS (Native Application).It will also provide shortest path between source and in between destinations along with the information matching the area of interest and contents related to profession of the traveller. User friendly UI having Auto complete drop down location list, on selection of locations it will generate path on the map, toggle destination buttons, and quick buttons for various other features will make the use of application very handy.
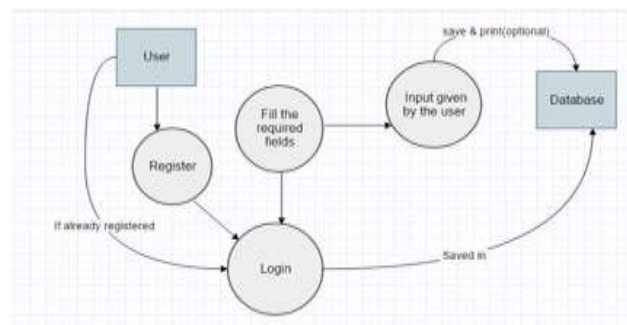
A. System Architecture:

Fig.1.1 System Architecture

B. Prototype model Screen shot:

Fig: 2.1 Home Page   Fig:2.2 Display of Map

V. Expected Results and Analysis

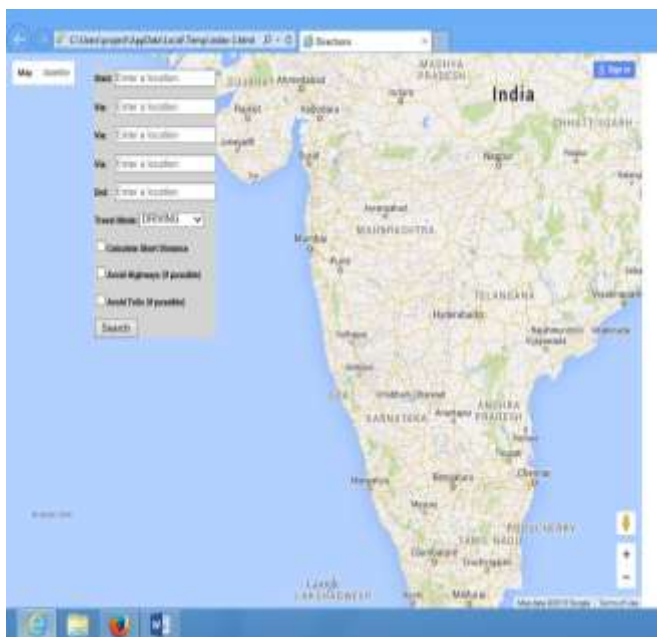### A. Initial Level Page (Basic Version-1):

Fig: 3.1 Initial Level Page

The home page of the project displays the image of map providing the user to enter the start location of their tour and various waypoints and finally leading to the multiple destinations. It provides the services such as choosing the shortest path by avoiding the highways, tolls, and calculates the total distance of the tour overall.
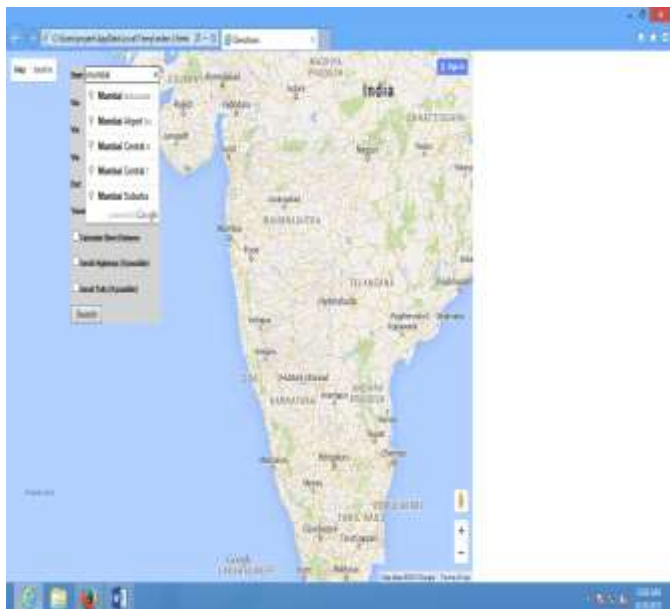
B. Auto Complete Service:

Fig: 3.2 Autocomplete Service

It displays the auto complete of the locations enter by the user. Thus helps the user to quickly access the map. It helps complete remaining of entered address.
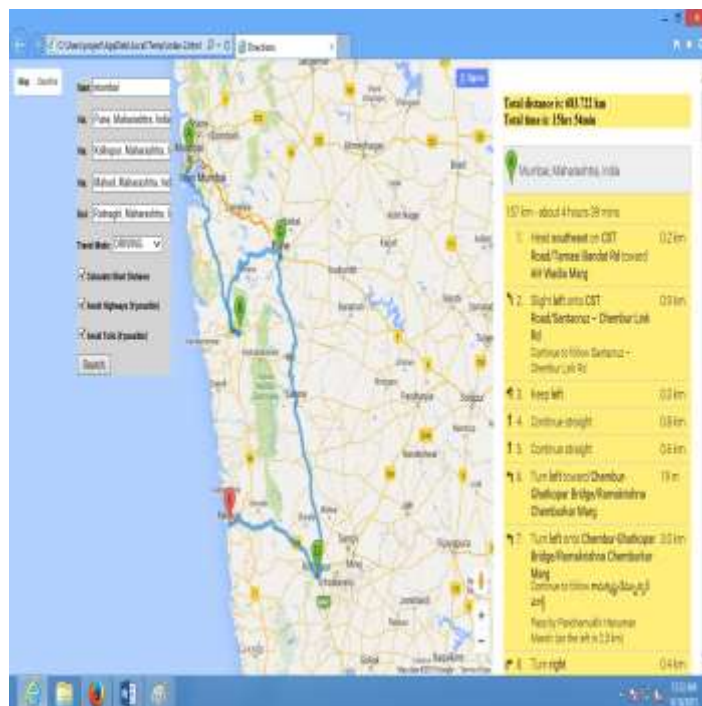
C. Search Result:

Fig: 3.3 Search Result

Pseudo Code For Optimal Path In Map:

```
Function  compute TotalDistance(result)
  {
      var  totalDist = 0;
      var  totalTime = 0;
      var  myroute = result.routes[0];
      for (i = 0; i < myroute.legs.length; i++)
   {
             totalDist += myroute.legs[i].distance.value;
             totalTime += myroute.legs[i].duration.value;
     }
     totalDist = totalDist / 1000;

   function minutesToStr(minutes)
   {
     var sign =";
     if(minutes < 0)
     {
             sign = '-';
     }
     var  hours  =  leftPad(Math.floor(Math.abs(minutes)  /
60));

     var  minutes = leftPad(Math.abs(minutes) % 60);
```

```
        return sign + hours +'hrs '+ Math.round(minutes) +
'min';

    }
    totalTime = (totalTime / 60).toFixed(2);
    var hrs = minutesToStr(totalTime);

  function leftPad(number)
  {
        return ((number < 10 && number >= 0) ? '0' : '') +
number;
    }
        document.getElementById("total").innerHTML=
"<b>Total distance is: " + totalDist + " km<br>Total time is: "
+ hrs + "</b>";
  }
```

Entries of locations by the user will be displayed on the map with the marker pointing the specified start, waypoints and end locations.

Hence it calculates the overall total distance and time of the locations entered by the user through various waypoints and the user can also change its mode of travel according to his/her needs.

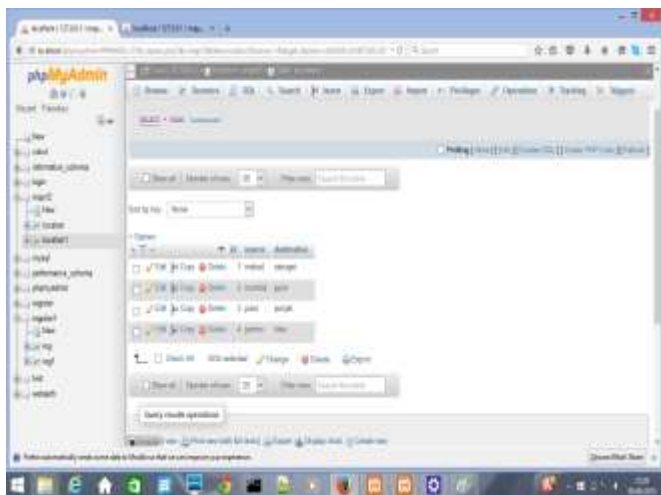### D: Database Design View:

Fig: 4.1 Database Design View

Required fields entered by the user about the source and multiple destination are updated in the database. Thus the user can retrieve those data for his/her future tours. Even the user can share his tour with corresponding agents like friends, relatives etc.
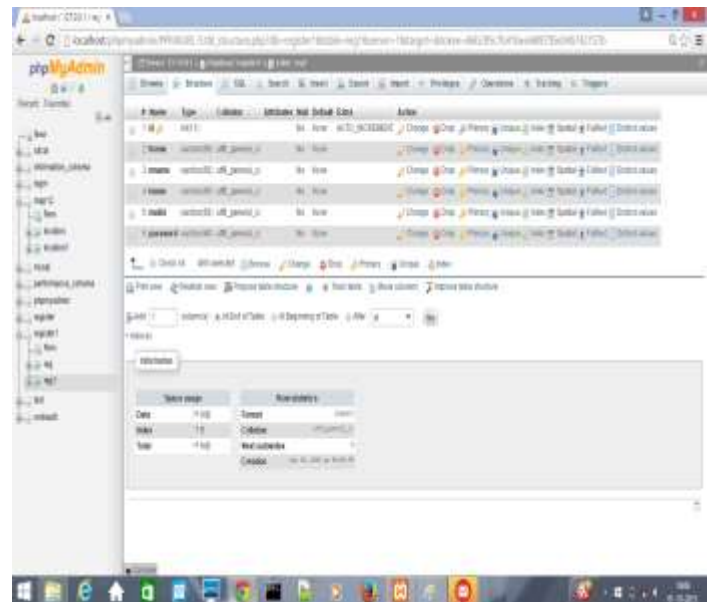

Fig: 4.2 Structure of Database Design

The register database consists of id, first name, middle name, last name, email id and password. The user gets registered by creating the profile by providing the above mentioned required fields and those fields are successfully added in the user's database. Those data enables the users to get login into the website of map and access the various services of tours provided by Google Services.

VII. Future work:

Existing system will need to run with online Internet services actively. In emergency if connectivity of cell services are not accessible we can further update the system to access satellite GPS as a backbone service. This improvises the performance in offline mode.

We can also think weather forecasting services in future that would help the users to take the decisions regarding tours well in advanced based on the climatic conditions.

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