Development of a Location Based Smart Mobile Tourist Guide Application for Sri Lanka

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Abstract

Tourism plays a momentous role in the accomplishment of macroeconomic solidity in Sri Lanka. It is one of the main industries that generates a higher emolument for Sri Lanka. The amount of foreign currency earnings from tourism industry has decreased significantly during the past few years according to observations and collected data. This can be partially attributed to the lack of loyalty of the physical tour guides as well as not modernizing the tour guide booklets regularly. Considering the above issues, we propose a mobile application named "Live Tour Guide" to make the travelling easier for the tourists and thereby creating a positive impact on the economy of Sri Lanka. A meticulous investigation was carried out in order to find out the software and hardware requirements to develop this automated tour guide application. The feasibility analysis for the system was carried out under three areas; i.e Operational, Economic and Technical. Since this application consists of the details about the hotels, attractive places and the longitudes/latitudes of different locations it was needed to use an exterior source to collect these respective data. Under the assumption that the particular websites are updated regularly, the dedicated websites were used to gather the required information. Direct observation data collection method was also utilized to identify the work carried out by the tour guides, their behavior, the way that they treat the tourists etc. The system has been developed focusing on two main elements; Mobile Application and Web Server. The Web Server is used to access the cached data or information through the Mobile Application. Information regarding different locations such as, longitudes and latitudes were gathered with the use of the Global Positioning System (GPS). Google maps was employed to access the map based services. Central web server can be accessed through the Internet by using wireless connectivity or 3G connection. The Web Server serves the contemporary location information and it also provides the details of the hotels and attractive places situated close-by, so that it will allow the tourists to plan out their journey accurately in advance with a minimum effort. An external database has been developed using MySQL in order to maintain the details of the places of interest. Java Script Object Notation (JSON) objects are used to exchange the location data over the internet and the application program. Google Maps Application Programming Interface is used to access the Google Map. The "Live Tour Guide" mobile application has developed in order to provide the real time location based services according to the requirements of the tourists. The system has been tested to operate on any smartphone with Android Operating System version 4.2

or later. When a user enters the source and the destination, it will display the route, estimated time for the journey without traffic and the distance between the origin and the destination. Along with that it provides two options to select as "Locations" and "Hotels". Those two options will provide the details of all the available hotels as well as attractive places located close-by along the preferred route. Apart from the mobile application, "Live Tour Guide" web application has also been developed for maintaining the database in a user friendly manner that can be used by the travel agencies. By using all the above mentioned technologies together with the real data, the objective of developing this "Live Tour Guide" android based application was successfully achieved. Even though some of the solutions are already available as tour guides, this "Live Tour Guide" application allows the tourists to plan out their tour before they start up their journey, by providing various kinds of origins and destinations. It will allow tourists to choose the locations that they are preferred to visit during their journey, since it provides all the information including the prices as well. Any user who is equipped with an android based smartphone, eligible to use this application. However, in future this system should be enhanced by enabling to display all the public places that are available within a selected route as well as it is needed to find out a way of accessing the "Live Tour Guide" application accurately even without having an internet connection. Currently, the database updates manually, but it is better to focus on updating it automatically within regular intervals, so that it will operate more accurately. Due to this innovative application, more tourists can be attracted and will gain a positive impact on the economy of Sri Lanka.