INVESTIGATION OF FEASIBLE TOURIST DESTINATIONS USING ANDROID MOBILE APP

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ABSTRACT

Tourism planning is tedious task and needs support from different service providers. Before actually making decisions to have a tour probably to visit places for exploration, entertainment, devotion, and so on, it is inevitable to have planning expenditure and time. Therefore providing help in planning such activities through a mobile application is a challenging problem to be addressed. The existing applications provide services towards reservations, and other aspects of tourism. However, there is need for a mobile application that can provide help in planning a tour. Towards this end we built an application that demonstrates the proof of concept. The aim of this mobile application is to help tourists to have rough estimation of the places they can visit in given city based on inputs like number of people, budget, and number of days. Based on the given inputs the application will mine the database and provide useful information. The output includes places that can be visited and cost involved in terms of food, transport, accommodation and so on. The empirical study of the proposed application reveals that the application is very useful and can be integrated with other service applications in future.

Index Terms – Android, budget calculator, tourism, recommendations

INTRODUCTION

Mobile applications and mobile usage became ubiquitous [1]. As a matter of fact, people of all walks of life started using mobile applications as they are handy to perform various activities such as shopping, mailing, chatting, and so on. In this context, they also prefer using mobile applications related to tourism. Plenty of mobile applications are being used in real world. Those applications are related to different domains. In this project we intend to build a mobile application that can help users to discover or find the places to visit in the given budget. The aim of this mobile application is to help tourists to have rough estimation of the places they can visit in given city based on inputs like number of people, budget, and number of days. Based on the given inputs the application will mine the database and provide useful information. The output includes places that can be visited and cost involved in terms of food, transport, accommodation and so on. Towards this end the mobile application has access to database that contains different data stores as described below.

In the existing system, generally people who want to visit places need to have planning and arrangements by enquiring different service providers. There is no specific application that can provide required information regarding their trip. This is because, the trip involves multiple parameters that are generally known when enquiries are made with different service providers such as travel agencies, hotels, and places and so on. The problem with existing system is that given a budget, it is not clear to make well informed decisions provided the information gained from various sources. Stated differently, it is not easy to have correct information based on the inputs given. Therefore it is essential to have an application that can answer such queries in a comprehensive fashion.

As people of all walks of life started using mobiles, a mobile application that can cater to such services can solve the problem. This is because, the mobile applications became ubiquitous and the mobile users are prevalent every year increasing in exponential order.

Therefore a mobile application that can run in any mobile can help the people who want to plan for visiting places. The application can provide user-friendly interface that can help in asking what we want. The application can interact with service providers' database and can come up with a plan that can suit your budget and other parameters as provided. Moreover the mobile application is handy and at the comfort of your mobility, you can access the application without time and geographical restrictions. This is one of the salient features of having a mobile application built using Android platform [2], [3]. The remainder of the paper is structured as follows. Section II presents the proposed system in detail. Section III presents implementation details and results. Section IV shows experimental results while section VI concludes the paper.

PROPOSED MOBILE APP FOR BUGET CALCULATIONS AND RECOMMENDATIONS

The proposed mobile application is the product that is self contained. It is a standalone application that resides and executes in any small hand held device like mobile phone. However, this application can be integrated with larger systems that are part of tourism applications that are based on Service Oriented Architecture (SOA) [4]. A tourism application in the real world might be an application that encompasses a chain of businesses that are related [5]. These businesses include travel, hospitality, entertainment, healthcare and education. The project under consideration is a standalone application as said earlier. Its broad overview is as presented in Figure 1.
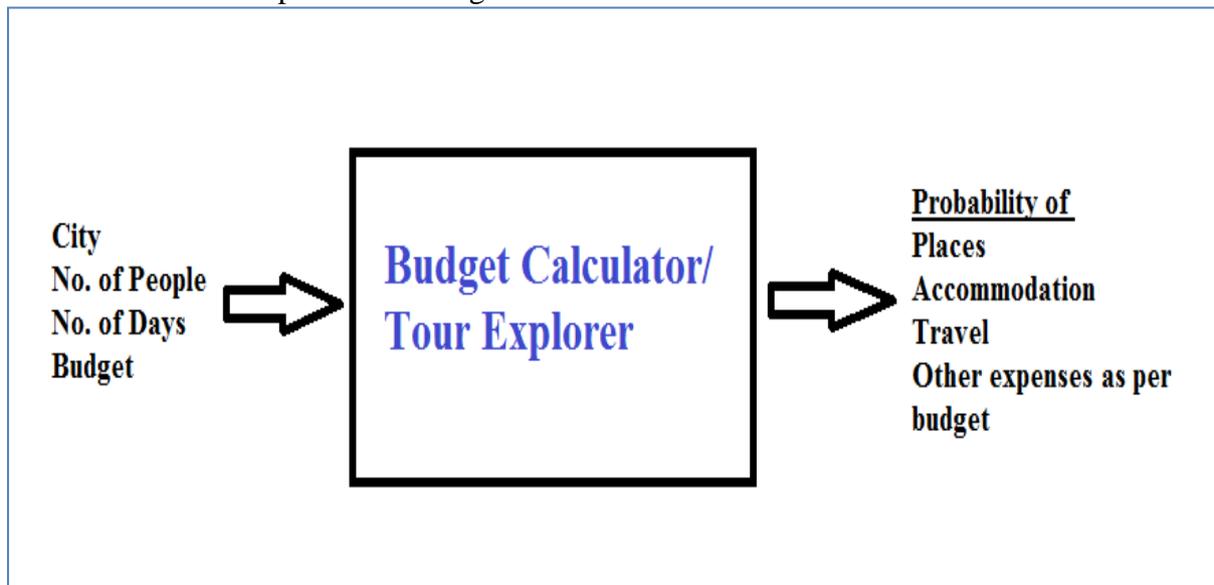

Figure 1 – Overview of the proposed application

As can be seen in Figure 1, it is evident that the block box of the proposed application is presented. The application takes specific inputs and provides specific outputs. However, the outputs are obtained based on the analysis made with input details. The application is responsible to compute all possible combinations of places, accommodation, the kind of transport and other expenses as per the intended budget amount. Thus the mobile application is very convenient as it can help users to know the expenditure and other details priori before making well informed decisions. The possible external interfaces to this application include the tourism related interfaces that can be used in order to make actual tour arrangements. The application as of now does not need any special equipment or external interfaces except a mobile phone where the application resides and runs standalone. As people of all walks of

life use mobile phones, this application proves handy to have well intended planning or well thought out planning of a tour with friends, family members and acquaintances.
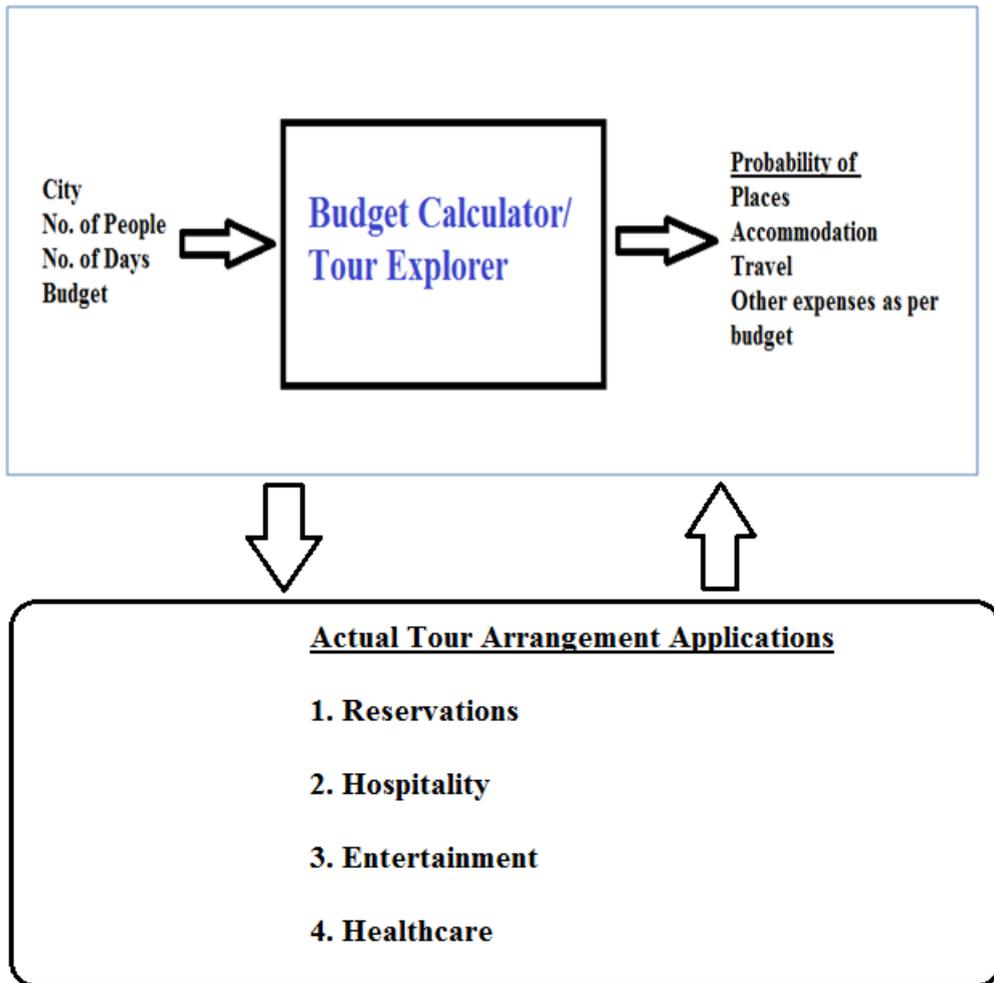

Figure 2 – Possible external interfaces that can be made in future

As can be seen in Figure 2, there are many tourism related applications in the domains such as reservations [6], hospitality [7], entertainment [8] and healthcare [9]. This list might increase as we explore further. The external interfacing with other applications is the ever increasing possibility provided the distributed architectures and technologies available in major application development platforms.

This section provides summary of functionalities of the application. The essence of the proposed application is to provide mobile interface to enquire about the possible places to be visited, kind of accommodation, type of transport and other details in the given budget. As described earlier, the application takes name of a city, number of people to be included in tour, number of days to be spent and the budget that has been allocated for the tour to be planned. Provided these inputs, the mobile application performs required analysis and gives details like the places that can be vested in the given city for the given budget, for given number of days and for the given number of people who would like to have a tour.

The mobile application that has been proposed to be built has users in a broad spectrum. The users are in all walks of life that includes professionals, businessmen, with technical expertise of without any technical expertise. In fact any user who operates mobile and needs to have planning on a tour can use this application. The application is very handy and user-friendly as it can be operated on the move or at comfort of home without any time and geographical restrictions. The education level of users is not important. Instead, they need to have basic knowledge in operating mobile applications.

The application as of now assumes a backend that provides required data for processing. The application is not meant for generating data as such. However, it is meant for building and processing queries pertaining to tour planning. The application depends on the database availability. The database is inbuilt into the mobile application using SQLite [10]. Therefore there is no issue with data availability. The application does not need any other dependencies such as Internet connectivity unless it is integrated with external applications

The processing is based on the database available. The inputs are taken and there is some sort of mining tasks that will find the trends in the data and find the possible permutations and combinations in which tour dynamics are discovered. This involves a set of queries that are inter-dependent and produce intermediate results. Then the intermediate outputs are merged when the search process is converged.

Backend

The proposed mobile application needs backend that contains data which can be queried from the mobile application. From the analysis of the problem many entities and their attributes were identified. The Entity Relationship Diagram (ERD) for the same is as follows.
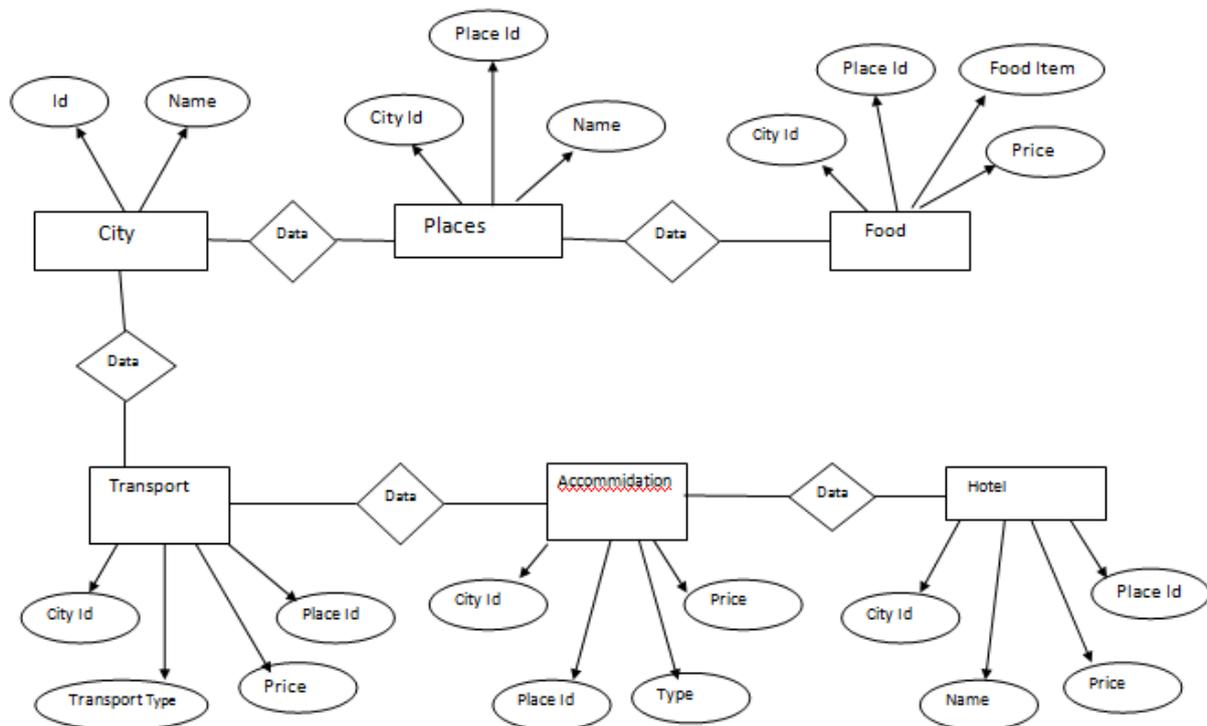

Figure 3 – ERD of the proposed system

IMPLEMENTATION AND RESULTS

The proposed mobile application known as budget calculator is developed and evaluated using Android platform.

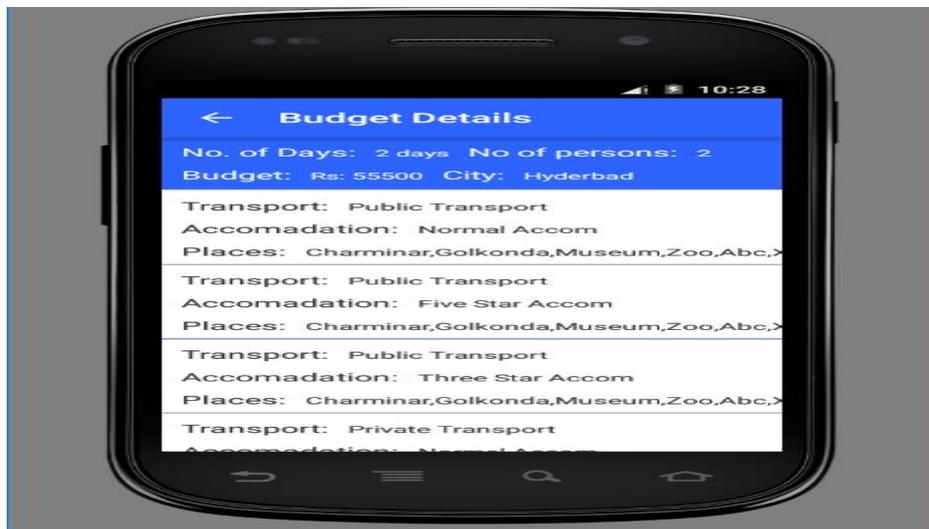Figure 4: Showing UI for budget form
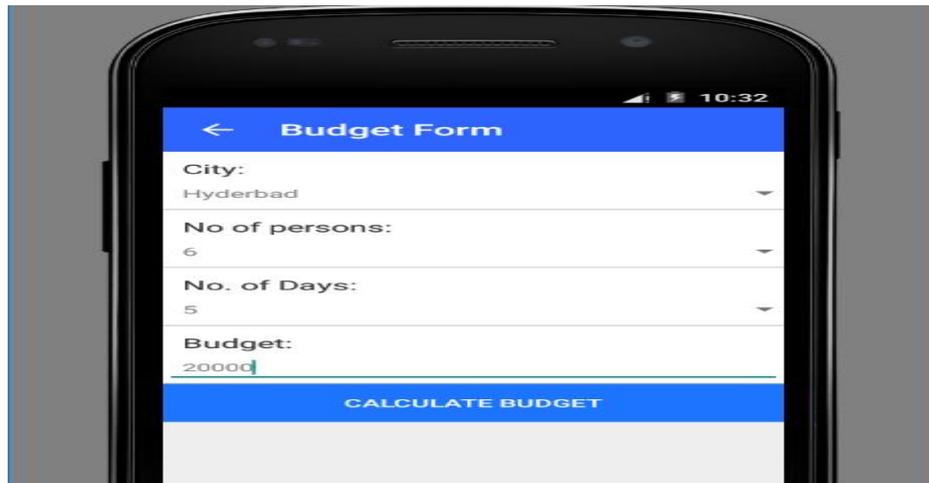

Figure 5: Results of tourist query
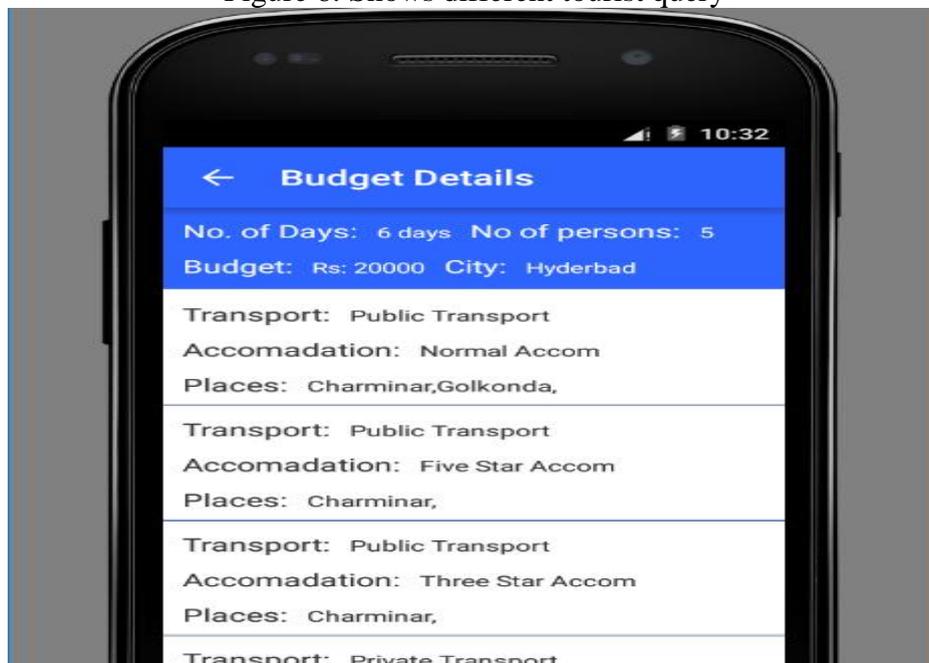
Figure 6: Shows different tourist query

Figure 7- Tourist query results

As shown in Figure 4 through Figure 7, it is evident that the Budget Calculator application is able to cater to the needs of end users who wanted to make well informed decisions before choosing travel destinations.

CONCLUSION AND FUTURE WORK

In this project we studied the need for a mobile application that can help in tourism planning. We envisaged that the application can be handy and provide required information to make well informed decisions. We made review of literature on such applications and obtained insights to have knowhow on the same. We designed an application that caters to the needs of mobile users who can obtain tour planning details by selecting city, number of users, number of days, and budget. The application is implemented in such a way that it runs in mobile and provides tour details and places to visit in the given budget. The application is built using Android platform which demonstrates the proof of concept. The application is tested with live data and found that it is very useful to make well informed decisions. The output includes

places that can be visited and cost involved in terms of food, transport, accommodation and so on. The empirical study of the proposed application reveals that the application is very useful and can be integrated with other service applications in future.

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