ABSTRACT: This paper presents a view of an android app, which is basically a taxi booking app the passenger simply have to register first by providing the information, this application will provide ease to the people who are not much familiar with the smartphones, through this app they can book their ride by voice instructions, in this app we will use multiple API’s for voice recognition like Urdu and English. Keywords: android application, taxi booking, technology, voice recognition, voice control taxi cab.

1. INTRODUCTION:

Technology is increasing gradually with the passage of time to provide ease in daily life. Transportation network is increasing due to the requirements of the people. There are multiple transportation modes available but still travelling is a major problem in urban cities of the world [1]. People wait too long so that they get their taxis or buses. Travelling is not only used for business it can be for relaxation, shopping or other activities. Vehicles are used for all means of transportation, common people prefer to travel through commercial transports as they are less expensive from purchasing private vehicles [2].

Taxi services plays a vital role by providing personalised vehicles in urban transportation system. The most challenge of this system is the mismatch of passenger demand and taxi service. It is difficult for passenger to get taxi on time and mostly vacant taxis waste too much time for finding a passenger which cause traffic blockage [3].
To overcome this issue a new system is introduced among the common people to efficiently utilize the perfect combination of their smartphones and internet to book a cab. The ease of booking cab from anywhere has made this business model a great success [4].

Taxi booking app is a recent phenomenon which leads to the positive impacts on the hassle free transportation with the state of the art facilities. Also have some frame-work to make their market; some quality, quantity and economical controls. Quality includes the age of car, appearance, disability requirements all are done by inspection. Quantity includes the number of vehicles in any respected area.

Economical control on the daily basis of analysis of costing including distance, maintenance of vehicle and other things [5].

After all our main purpose is controlling our app over Urdu voice recognition through which we can promote our national language, also provide ease to the users who are not familiar with the smartphone so they can perform some core functions over Urdu voice recognition by using ASR and some other approach to make it work.[6]

The aim of this paper is to design a mobile application of taxi booking app based on voice recognition to provide more ease for its users. This paper is structured as follows: with the introduction in section-1. Review of existing system in section 2. In section-3 Design of proposed system is conducted. In section-4, we discuss design modules of this system. In section-5 implementation of mobile application is conducted and section-6 concludes this paper.

2. Review Of Existing Systems:

Uber taxi booking app is introduced in March 2009, this app provides user an ease to book their taxis from there remote locations. Application will automatically find nearby available driver. After ride is confirmed a live map tracking of taxi can be seen by passenger. The drawback of this application is most of the time driver and ride details are not correct [7].

Careem is another taxi booking app introduced in 10 countries. It is moreover similar to uber, it provides you every single information regarding your ride which makes users more comfortable. Drivers in Careem service are well mannered. Drawback of this service is that it is expensive than Uber and many users who are not familiar with touchscreen faced problem while using it.

3. Proposed System:

In this paper we proposed a system which is an attempt to build a mobile application which is user friendly. We provide a platform through which passenger and driver both can communicate with each other. The proposed system is moreover similar to other taxi booking application which provides live map tracking of ride, book ride remotely, fare estimation automatically. Furthermore, we proposed use of voice commands to control some basic functions of application which provides more ease to its users.

For increasing our market share we have to come up with different schemes likes Promo codes, free rides, gift hampers and much more attractive things. [8]

This application provide security to its users. If anything goes wrong, ride can be track immediately through map tracking. Driver details are verified manually which help to trace them easily if anything worst happen. Because mishaps regarding cabs are increasing day by day specially with females, some harassment cases are revolving on media that’s why customer’s safety is our priority.
Working Model:

This diagram is the working model of our proposed system. As you can see that, a request is generated from passenger’s end which moves towards a server. A server is the bridge that connects passenger and driver both. When a request is received by the server from a passenger, it automatically find available driver and forward that request to him. After request is received by the driver it has to be respond whether accept or decline. The response is from driver is moved to server and then to the specific passenger. If driver accepts the request, as a result passenger can see each driver’s current location on map. And if request is rejected by driver it shows a message on passenger’s end that driver has decline your request.

4. COMPARATIVE ANALYSIS:

In order to check that the mobile application we are developing is different from existing system discussed in section 2, we have to compare our application with the existing taxi booking applications. Criteria of comparison is as follows:

1. Requires user registration before using application.
2. Whether application uses Google maps services or not.
3. Payment integration is available or not.
4. Manually select driver from the list.
5. Voice recognition feature is available or not.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>(Cab pooling) Reference 1</th>
<th>(Red cab) Reference 2</th>
<th>Reference 4</th>
<th>(Uber cab) Reference 7</th>
<th>(Ola cab) Reference 9</th>
<th>Talking Cab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Require registration to use</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Works with google maps</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Payment integration</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>List of available drivers</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Voice recognition to control app</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

TABLE I: A comparative analysis with other taxi booking applications
From table I, we have observed that every mobile application requires registration in order to use it. Google maps services are used by every other taxi booking application to access current location of the users. Our application contains moreover similar features that other application have, but voice recognition and manual selection of drivers are not available in other applications. This feature is only available in our application which makes it different from others.

5. **Design Modules:**

5.1 Natural Language Processing:

- **Speech to text:**

Talking Cab is using Speech to text feature which understand human language and response in the same manner. It can respond the actor and write down what the actor said. We have some sort of limitations it uses some limited words for performing tasks [9].

5.2 Live Map Tracking:

We are also using live map tracking in order to track the whole journey from the pickup point to destination because we have to ensure safety for our users. We can also see our nearby drivers on the map without doing anything.

5.3 Ride Category:

We also have Ride category in our app through which user can decide in which type of category he wants to travel. Every category have different fares according to facilities.

5.4 Location Accuracy:

We are also using some algorithms and APIs which helps us to extract only the location from the sentence spoken by the user.

5.5 Feedback System:

Feedback system is also based on Speech to Text, after the completion of ride a pop-up will arise on the passenger’s application screen on which he can put good or bad remarks according to the ride they have completed yet.

6. **Implementation Of The Mobile App:**

As the time passes everyone have to opt things according to the technical world. Android is now officially used in all over the world. Application is capable of locating the cab location by using Google map. We have different modules which are define below.

6.1 Registration Module:

If the user is downloading application for the first time so he/she would have to register in order to use the application. Here we have different fields of First name, last name, address, phone number, NIC number.
6.2 Order Module:

This is our core functionality of application in which user have to input his/her pickup location and drop off location through which the driver can able to know that from where the passenger have to be picked and what will be the destination place.

6.3 Available Driver List:

When the passenger confirm the ride from his end so the app will search drivers in the respected area with the help of different algorithms and a list will generate on the passenger’s app screen with the specific details so user can select the captain according to his/her choice.

6.4 History Module:

Also we have the History module which keep the record of your trip with all its details.

6.5 Cab Locator:

It shows the current position of the captain and how far he is away from the pickup or drop off location it’s all done by the Google map API.

7. CONCLUSION:

This study has shown the importance of making such app for the comfort of users. It makes taxi booking and travelling more convenient to everyone. To conclude, the outcomes of this study shows that to satisfy users, app must be easy to use and meet their expectations with new ideas. This app will satisfy its users with its performance, efficiency and ease of use. Furthermore, to improve number of users, the service providers must pay attention towards user’s need. Moreover, in future we focus on how to integrate maximum functionality controlled through voice and try to introduce voice recognition with other languages.

REFERENCES: