TUTRACK

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ABSTRACT

In this 21st century, people are going to be smart day by day with the help of technology and education. There are too many platforms for the students to learn the new things. Education is the process of acquisition of the knowledge, values and so on[2]. Mostly peoples take benefits from online studies but we observed many people who wants to study in an institutes and faced problems for searching their tuition centers and home tutors, they find their tuitions by visiting, Facebook, newspaper and sign boards. By considering them issues we propose a system which is tuTrack. tuTrack provides a platform where people can find their nearby institute and home tutors. Finding a nearby institute or home tutors is feasible through a web-based and a smartphone-based front-end that adopt a map-based visualization which makes searching more easy and user friendly. Through this system home tutors and institutes get all the benefits to make their way to convey information to students. Student gets information of all the institute, home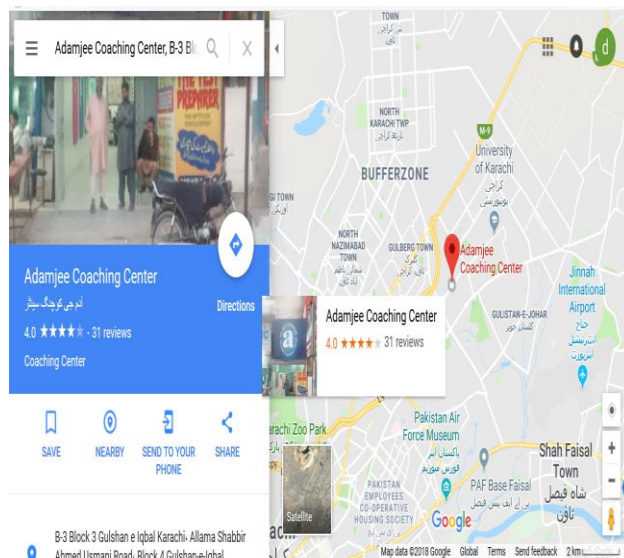 tutors, fees structure and courses regarding to their own choice. The user can do searching by courses, institutes, home tutors and nearby location. The system contains different modules and mechanisms.

Keywords- tuTrack, infrastructure, finding, institutes, location

1. INTRODUCTION

We believe in a future where technology can improve the system of accessing education. We would be leveraging the students to make better decisions that will pull them in the right track of learning by connecting them to the right resources. Many of the peoples provide e-learning facility to those who learn online. But most of the student wants to learn in coaching centers or by home tutor because of their better understanding of each courses. The main objective is to target students who are suffering from the problems to finding a good tutor or coaching center for themselves. The system has multiple searching criteria. A course module provide all the details of courses and define

which course will be available where or who will be taken those particular course. A teacher module provides the details of teachers, in which coaching center they are available or either they are available for home tuition or not. In an institute module, it provide the details of coaching centers, including timings, courses, schedule and fees structure. In a tracking module, students can search their nearby institutes or home tutors. The system performance must be same as user required. It fulfills users demand and provides them complete information. There are no jerks and bugs and system shouldn't turn to an idle state. It provide real time feedback to users immediately. The data which are shown to users are correct and there is no performance fault on it. Application would run so smoothly there would no chances of any error occurrences or application shouldn't goes to not responding mode. In other words, tuTrack is working to provide better searching experience to students, while also adding solutions for parents who are searching the institutes for their children. The main idea is to give community the concept of high usage of technology as to become for smart. tuTrack application will be execute on smart devices for being portable and easy to use for any users in the community.

Figure 1: A map to finding a location of coaching center

2. RELATED WORK

Education is the process of providing or acquisition of knowledge and skills[2]. Now a days, e-learning is very common. Most of the system only provided the facility of online learning such as Ustaad.pk which provides the functionality of online learning and nearby tutors with the budget and specified skills[7], Asaan taaleem helps to connect girls with qualified women teacher to teach them in an easy way, myPrivateTutor helps to find tutors and coaching classes but this functionality only feasible for Indians[9] and LearnPick is a great Indian platform which helps to find coaching classes, tuition centers and local tutors[8]. As we know that, people can take benefits from online studies. But still most of the people wants to study in coaching center or by home tutors. Many peoples face difficulty when web browsers and system does not provide the complete information of each coaching center and home tutors. Our system is different from the others because we develop a system which is providing a platform where students can search their nearby institutes and information of each coaching centers including teachers, courses, fees, schedules and courses levels as well[1].

3. tuTrack

tuTrack will give students an android application, which will be mobile based with aiming to solve above problems through smart application. The tuTrack system consist of three core components: (a) a web based front-end which provides a detail of all institutes including fees, courses, teachers, schedule. (b) a mobile application based front end which provides API Google map and a list of all nearby institutes , home tutors (c) A back-end infrastructure which helps to update all the information as per any changes[10]. Through these components the tuTrack platform implements a variety of functionalities that are employed with the purpose of removing the distance between coaching centers, teachers and the students.

This system is the big platform which contains all the information which user wants. In the next stage, we describe the more important functionalities of these components:

3.1 Mobile-based front end:

The goal of the mobile based application is to help students in an easiest way if they are somewhere else and cannot access the website[10]. The mobile application of tuTrack is completely interconnected with the website and all the actions performed on the website will be visible clearly. The features of the mobile application is to provide a location of nearby institutes or home tutors and provide the list of all coaching centers, teachers and courses. We are not using latest version of android because somehow people don't have latest version on their phone we are using android version of lollipop which can be mostly available on any Smartphone in today's era. More precisely, the functionalities include:

- **Location Service:** Location is a geographical point through people can see the places of different countries or within the countries such as hospitals, hotels, schools and etc[4]. There was many systems develop for the users to find the route of the schools, hotels and so on. But no one develop the system of to finding the nearby coaching centers and home tutors yet. So we decided to develop a system naming tuTrack to help those students who cannot able to find the correct information on the web related to the particular coaching centers and home tutors. This functionality provides the user to easily find any tutor or coaching center at their nearby location through API Google map.
- **Courses:** Courses is one of the most important functionality of our mobile based front-end. Multiple levels has multiple courses. Mostly users can search the courses by a teacher name but there is no platform available to

solve this matter. The platform of tuTrack provide all the details of courses, whereas define which course will be available where or who will be taken these particular course.

- **Tutors:** Teachers plays an important role in our life because the teacher is the one who help us to making our career successful and who teaches us an etiquettes to live among the peoples[5]. Many of the student wants their favorite teacher's information online or with whom they want to study. So, the system naming tuTrack provide the details of all the teachers including the information in which coaching center they are available or either they are available for home tuition or not.
- **Coaching Centers:** Coaching centers are the place where students can go in order to receive the knowledge related to their particular courses. Number of peoples don't want to learn online so they choose a track of coaching centers and home tutors to learn the things more clearly. The proposed system tuTrack provide the details of coaching centers, including staff members, timings, courses and schedule and fees structure.

3.2 Web-based front end:

Website is a most important functionality of our system. Web App helps to hold the many previous record if user want to look for it. The system shall provide a uniform look and feel between all the web pages. This system shall provide use of icons and toolbars. Users may have not faced any difficulty while using our system. The app and web both layout and style should be user friendly. It shows the map of nearby institutes and home tutors. The system shall provide storage of all databases on redundant computers with automatic switchover. Each and everything will be fully available and trust worthy for users. Users may get all the reliable information through our

system. We are working on windows 8, but our system is capable for any type of windows, also it can be used on Linux systems[10]. More precisely, the functionalities include:

- **Google API for Web:** The Google API functionality is used in the web, than the users can search their nearby location's institute in another flexible way.
- **High-rated coaching centers:** The system provides the high-rated coaching centers as well. It will help students to make a better decision while choosing a coaching centers or home tutors.
- **Feedback:** The system able to receive the feedbacks form the users which helps to identify the issues regarding any institutes ad our system as well.
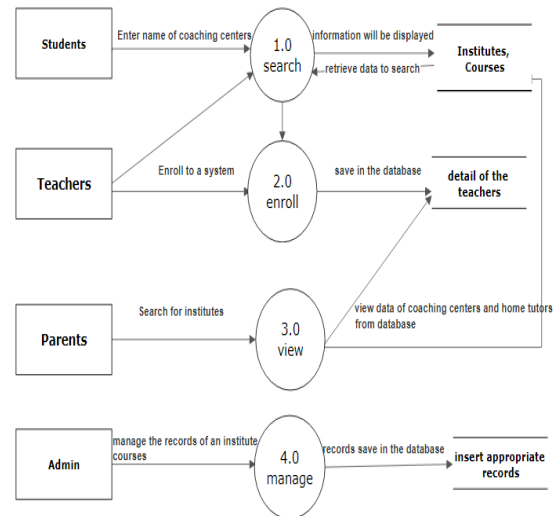
3.3 Back-end database

Back-end functionality is an important element of every system because it contain all the data regarding to that particular system. The data depends on the domain of the system. Our system contains the data of educational domain. It holds all the record of institutes including courses, teachers, fees, levels and schedule related to that particular institute. We can add more institutes in our system as per new centers initiated and wants to register their center on our platform. It also helps to update the information as per requirement changes. We use firebase for our back-end infrastructure.

- **Firebase:** Firebase is a Backend-as-a-Service which is used to store data of all the institute's courses, teachers, schedule and so on.

4.WORKING SYSTEM

The working system will be elaborate more through DFD diagram which is below:

Figure 1: data flow diagram of tuTrack

In modern societies, receiving an education is most important. In above section, the diagram is defined which helps to recognize how system will work. Users in terms of students, parents and teachers can view the data which is regarding to the institute's address, courses, teachers and schedules. The admin or developer update the data as per institute's requirements and as per new institutes wants to register their information on our system. As well as, users can search the courses, teachers of a particular course and coaching centers. The most important functionality is to provide a nearby location of any tutor and coaching center and where which course instructor is available. Moreover, Admin has a facility to manage all the functionalities of our system. There are some key aspects of our system, which makes our system more understandable:

- tuTrack will make the education more efficient for students.
- Reduce the difficulties of searching best institute for learning and gaining information.
- Make parent's stress free through this software, it provides high rated and best coaching centers and qualified tutors for their child.
- Anyone can track the location by using map.

- Database Management System.
- User can search any tutor and coaching center.
- Intuitive user interface.
- It will make the learning environment according to user's perspectives.
- It can successfully deploy on a large scale.
- The software provides searching facility by using website and mobile application as well.
- Less chance of misunderstanding and user frustration.
- This system bring out high usability as turn out rate will be improved.
- Right now there is no competitor in market.

5.INTENDED AUDIENCE

tuTrack platform mainly addresses the audience (a) Students can open their GPS location and search their nearby institutes and home tutors and also can view the list of all coaching centers and choose any one of them regarding to their requirements. As well as, students can view the list of all courses, view fees, schedule of an institute or home tutor. (b) Parents can view and search coaching center and tutor by name by course or by teacher. They could suggest their child a well-established coaching center or tutors who are well qualified. (c) Anyone can access it easily. That's why we have created a user-friendly interface of an application and website[3]. Moreover from a scientific perspective, tuTrack encompasses nearby location, images of institute, GPS information, institutes data, etc. This content is likely to carry valuable pieces of knowledge such as address of the institute, fees, schedule and courses.

CONCLUSION:

Although the idea of tuTrack is for improving the education field. tuTrack is the first integrated solution that is made available for all students and teachers and covers the full bunch of information. The aim of this system is to simplify the finding process of institutes and home tutors. It helps A/O level students as well to teach by a home tutor and finding courses by using website and mobile application. Our application provides various options to users to search as per their requirement such as by name of coaching centers, by name of any home tutor, by name of courses and many more ways to find best learning environment for themselves. The system consists of a web based front-end, mobile application based front-end and back-end infrastructure. It provides a complete platform for students, parents and other peoples in order to make their life in a better way and know more information in a short period of time.

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