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Edutorial - Smart Pedagogy Teaching Learning Portal

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Abstract - *The SMART tutoring system is one of the approaches used in today's education that allows the tutors and students to communicate with each other not only in the traditional manner but also remotely from the comfort of one's homes. Most platforms currently available are android applications; there aren't any known cross-platform applications. There are separate platforms for finding tutors, query solving, specially-abled students, one on one interaction with the tutors, and so on but there is no platform that has the whole package. We have introduced, Edutorial: Smart Pedagogy teaching learning Portal (currently based in Ontario, Canada), a service to find a subject expert tutor. The proposed portal has a common platform where the tutor and the students can access their respective views. This Smart Tutor system will help learners to find tutors based on the location entered and subject they want to learn. All this can be done in a few steps of setting up the profile. In this system, the students can chat with tutors as well as other students regarding queries. Student tutors who are currently learning but are passionate about teaching, can also find jobs here. Children with ADD/ADHD can find tutors who specialize in handling exceptional students. This Smart Tutor system can help the tutors to find jobs and help the students to find the best tutors conveniently.*

Key Words: portal, tutor, student, learning, teaching.

1. INTRODUCTION

Education is one of the most important aspects of our lives. We cannot make any compromises with it. Although it does become hectic at times. The most popular saying among learners these days whenever they have doubts is, "Google it!" but there are so many resources available online that it becomes difficult and time consuming to decipher which ones suit our needs. Our question is; Why waste your time when you have expert help near you?

To make academics, other enriched courses and cracking high level entrance exams easier we have come up with a system that will provide highly skilled and experienced tutors easily.

This Smart tutor system will help to find tutors from any location and for any subject you want. One can also get students just by logging onto the website and setting up the profile. In this smart teaching learning portal, there are three entities namely, Admin, Student, and Tutor. Admin can register, login, view tutors and students databases and check profiles for authenticity. Admin can also check the registered students and tutors. Students can register, login, edit profile, the student can search for tutors who will be recommended based on location entered and subject, students can send requests to tutors, students can ask queries on the forum and personal chat. A tutor can register, login, edit profile, accept or reject a student's request, and the tutor can solve students queries either via personal chat or on the forum.

The specially abled learners do not have many options out there for quality education. Students with ADD/ADHD and other exceptional students can also register and find tutors who can meet their unique learning needs so that they get equal and fair access to education.

2. LITERATURE REVIEW

Muhammad Saad, Farheen Iqbal and Muhammad Qasim Pasta developed a mobile application named, Smart Tution Finder, where the tutors are suggested based on location. The application also consists of a recommendation system and a secure payment method. This application is based in the city of Karachi. It utilizes the shared economy concept and the Escrow model. The authors have compared the Features of such an application with the Sustainable Development Goals(SDG) framework. They claim that this will help in understanding what features can be added to an existing application or which new applications can be created to achieve the required goals [1].

Warit Taveekarn, Rukpatsorn Latthitham, Nuttawat Kitticharеonjit, Vasaka Visoottiviseth developed an android application named, FindMyTutor for Thailand. In Thailand private tutors have to pay high prices to recommendation agencies in order to find students to tutor. So to solve this problem the authors have created the FindMyTutor application so that tutors can register and find students for free. This application along with the essential recommendation features

has additional functions such as introductory video of the tutor and matching the tutors with students based on location, age, gender and rating. The factors that dating apps use to match compatible people are being used by the authors in this application to match tutors with students [2]. Rafidah Mohd Arif and Prof. Dr Othman O. Khalifa have written a Case Study paper to determine which is better, traditional teaching ways or online teaching, where they took a survey of the students studying in the Computer Science and Multimedia Department of the University College Shahputra. They took online quizzes of the students and gave them online assignments. Most students found the online method to be more effective and flexible as compared to traditional learning methods [3].

Thulasi Krishna NP has designed a web portal named, Online Student Portal(OSP) which brings the information from different sources in one place. Online book stores, online courses, videos, pdfs, forums, communities and news can be shared on this portal. Learners all over the world can access this information and interact with each other [4].
Dolly Panchal, Mili Sanghvi, ShikhaDevi Pandey and Elizabeth George have developed an android application in which tutors can find students without consulting any third party and parents of students can find tutors in their nearby vicinity. The authors have used the Naive Bayes algorithm

to classify the tutor's records, compare between their profiles and recommend tutors accordingly. They have used SQLite to store the collected data and WEKA tool for implementing data mining techniques [5].

Wilfried and Yann created Superprof, a web application in Biarritz. It helps you find tutors for anything and everything on the internet. All from maths, science, history to guitar, painting and so on [6].

Ritu Chaturvedi and C. I. Ezeife has written a case study paper for Clustering Examples in Web-based Tutoring Systems based on Relevance of Concepts. This Web based tutoring system application is From Canada. This paper proposes an algorithm called CER (Clustering Examples based on Relevance) that organizes a collection of worked-out examples into coherent and relevant clusters relevant to the learning concepts covered by them. It is an external validity of CER that was measured by comparing its results to a benchmark dataset that had properties of data that were common to the domain of CER. In Clustering It is an unsupervised mining method that partitions a finite set of data points in multidimensional space into well-defined and separate clusters using distance measures such as Euclidean distance [7].

3. RESEARCH GAP

Most of the existing systems are android applications and the ones that are web based applications or portals do not have job opportunities for tutors or personal tutor searching facilities for students. Some of the web applications that do have these facilities lack emphasis on academic learning, cracking high level entrance exams, enriched courses and essential skills which lay the foundation of a child's career. The reviews of some platforms are not very positive. The existing teaching learning systems also do not have programs for specially abled learners to acquire quality education from expert tutors and professionals. There are also no systems where student tutors are given opportunities to explore their teaching skills and earn a little extra pocket money at the same time.

4. SUMMARY TABLE

Table - 1: Summary Table of existing systems

Cite	Year	Authors	Features	Remarks
[1]	2020	Muhammad Saad, Farheen Iqbal and Muhammad Qasim Pasta	- Login using credentials, find tutors in the areas near the university location. - Request Tutor.	Only has an android mobile application.
[2]	2014	Warit Taveekarn, Rukpatsorn Latthitham, Nuttawat Kittichareonjit, Vasaka Visoottiviseth	- Tutors can make an introductory video for students to get an idea while selecting. - Recommendation system based on age, location, gender and rating.	Dating application type of recommendation system.

[3]	2012	Rafidah Mohd Arif and Prof. Dr Othman O. Khalifa	- Online doubt solving, assignments, quizzes. - Included case study survey of a college.	- Case Study paper. - Doesn't include finding tutors online.
[4]	2016	Thulasi Krishna NP	- Online Student Portal where people can shop for online books, ask queries on well known forums, take courses and connect with other learners.	There isn't any feature to find tutors online.
[5]	2016	Dolly Panchal, Mili Sanghvi, ShikhaDevi Pandey, Elizabeth George	- Students and parents of students can find tutors in their locality. - Naive Bayes algorithm is used to classify the tutor profiles and suggest tutors accurately. - WEKA tool is used for data mining.	Only an android mobile application.
[6]	2013	Wilfried, Yann	- Superprof is a well known web application to find tutors all over the world for learning almost anything.	Not focused on quality academics, doesn't include enriched courses.
[7]	2021	Ritu Chaturvedi, C. I. Ezeife	- It is a Web based online Tutoring system case study - To create a separated group of students. This paper Initiates an algorithm called CER(Clustering Examples on relevance).	- Case study paper. - There isn't any feature to find tutors online.

5. PROPOSED SYSTEM

5.1 Common Aspects

The **registration** process is common to all the users on the portal. Name, an email id, a powerful password and phone number, just the necessary details required for authentication and verification.

After registering, in the **edit profile** option, admin can modify their personal details, students can add the subjects they want to learn, the grade they are currently in, parents email id and tutors can add their resumes, registration numbers, subjects they want to teach, work experience and so on and so forth.

All users require a verified username and password to **login** to their accounts. All the resources and services of the portal can be accessed only after logging in.

5.2 System Workflow

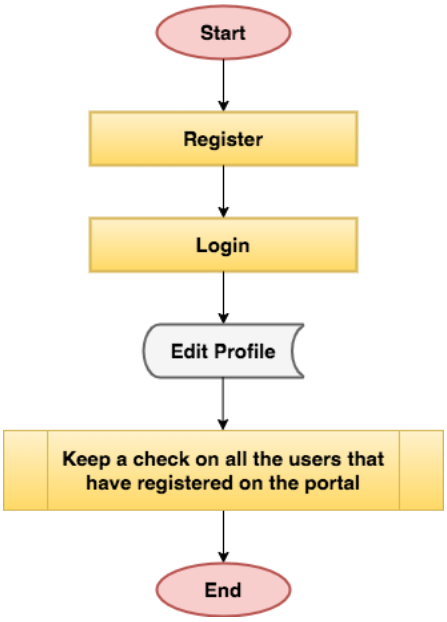

Fig - 1: Admin's Workflow

Admin's Responsibilities: The admin's job is to keep track of all the users that register on the portal. Admins also need to regularly check for malpractices or unauthentic accounts and block them.

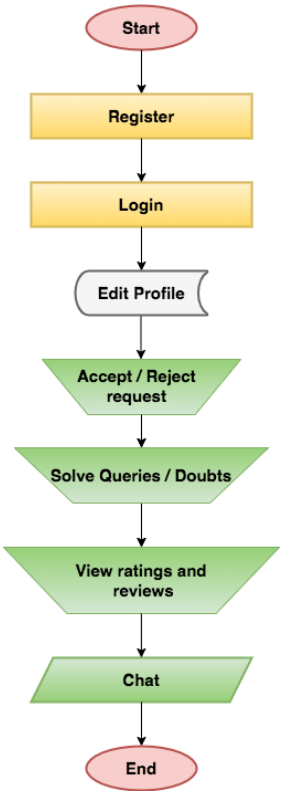

Fig - 2: Tutor's Workflow

Requests: The tutor can accept or reject the students requests as per their requirements and preferences.

Solve Queries: Tutors can address any queries on the forum which will help in increasing their ratings and acquiring more students.

Analyzing Ratings and Reviews: A quick look at their ratings and analyzing the reviews that the students have given will give the tutors the feedback they need to strategize their and improve their teaching methods or continue with the teaching methods which are liked by most students.

Chat: Tutors can use chats to send students the schedule and time table for the upcoming lectures.

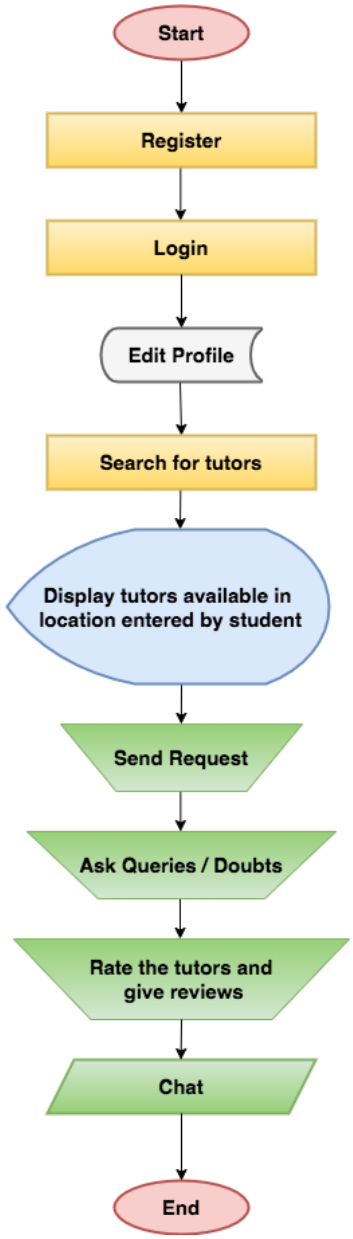

Fig - 3: Student's Workflow

Searching tutors: Students can search for tutors of any subject they want to learn by entering the subject name and location of the student's choice.

(e.g. [1]). You want to learn - MAST in Vancouver, so you enter 'MAST' in the subject section and 'Vancouver' in the location section of the search field.

Displaying the suggested tutors: All the tutors that teach the subject you want to learn (Here, MAST) in your entered location (Here, Vancouver) will be displayed on the screen.

Requests: Students can send requests to the tutors of their choice from the suggested list of tutors.

Ask Queries: Students can ask any queries or doubts which will be solved by tutors or other students who might have the answer to those queries.

Give ratings and post reviews: Students can give ratings and their personal reviews by recognizing the tutors based on their method of teaching.

Chat: Students can chat with the tutors to clear their doubts or to know about their upcoming lectures and schedules.

6. CONCLUSION

In this paper, we have presented a web portal to help students and tutors in their learning and teaching careers. The key feature of this teaching learning platform is to build a communication bridge between tutors and students by providing a convenient platform. By developing this portal we will fill the gap which currently exists in the market by providing a platform where people can find qualified, trustworthy, cost-efficient tutor services, and tutors can find employment opportunities.

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