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Erudition- Institute Management System

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Abstract - *Our aim for this project is to build a dataset that will allow us to accurately sort all forms of marks based on subjects and class.*

All tests can be analysed based on the number of attempted papers, marks, time taken, accuracy, difficulty level, and average time taken.

Unlike other apps, we intend to do more than merely gather data and show it; we intend to research that data for the purpose of teaching.

The advantages include grasping topics that are difficult for most students and student-to-student weak points.

We now offer live lectures, a proper database, a question section, a notice board, storage for study materials, and assignment submission.

1.INTRODUCTION

We designed a mobile application for an educational institute that incorporates online class administration, storing all student records and reports to provide an analysis of their growth, and providing students with the ability to get answers to their questions.

1.1 Motivation

Student progress monitoring is a strategy that enables teachers to use student performance data to continuously assess the effectiveness of their education and make more informed instructional decisions. It will also assist pupils in improving their performance in order to be their best. If a student's rate of learning appears to be inadequate, the teacher can modify instruction.

1.Aim and Objective

This project's goal is to make learning easier.

Students can gain the following benefits by using the application:

1. Improved access to educational resources
2. Improved parent-teacher interaction
3. Constant accessibility
four. online resources
5. Reduces the gap between students and schools in communication.
6. Utilization of Leisure Hours

Teachers can gain the following benefits by using this system:

1. Easier transfer of subject related documents
2. Time to time updates from institutes
3. Constant accessibility
4. Honest feedback of student progress to improve teaching methods.

2. THE ONLINE SYSTEMS FOR EDUCATION

Currently we are in a state that we have experienced the switch of education system from completely offline to completely online to partially online partially offline and now at last completely offline. Needless to say, we might face similar issues in future as well. So, to make sure we don't face the same problems next time we need a good system.

There were many problems we faced the first time:

1. There were limited platforms with limited functionalities available in the beginning.
2. Later, there were too many platforms but the functionalities were still limited.
3. For generalized audience, google played a vital role. Google drive and Google classroom were platforms for submissions of assignments and transferring. Google meet and Zoom were the platforms for online lectures.
4. For doubt solving, WhatsApp and mails were the platform in use by both teachers and students.

3. MANAGEMENT OF INSTITUTE

One of the important goal here was to achieve a management system for any institute such that the particular

institute could have a well organized database and a system that provides answers to their questions.

Adding a new member to the institute, be it student teacher or an admin is a hectic job. There are a lot of pre requisites to it. A lot of documents are to be made. Our system made that easy for an admin to do.

The contact information must be up to date. The schedule shared with students and teachers must be updated regularly and all the data related to tests and assignments must be non-redundantly available.

4. DOUBT SOLVING SYSTEM

The doubt solving system is another highlight of our system. Most important part of a curriculum is to make sure all the important and viable doubts of students are getting solved and clarified.

Considering the scalability of the system we need to make sure that the doubts are subject wise sorted. Therefore only the doubts of respective subjects are shown to a particular teacher.

Another feature of doubts is that it is upto the student to check if the doubt is solved or not. Until that is checked multiple teachers can rectify the situation and solve the doubt.

We can add files and images to make sure the doubts and their solutions are clear to understand for both teachers and students.

5. ONLINE LECTURES AND NOTICES

Online lectures are one of the most important functionalities of our system. Teachers must be able to start an online lecture on our platform and make sure only the authenticated students are suppose to join and not anyone.

When a lecture is started, the teacher must be able to know whom to admit and whom not to. The students play one o the most vital role here. Attending online lectures would be important part of the curriculum as it sets a bar where the reach of a particular institute ends.

Notices are received by students and teachers and they are mostly directed by admins. The main notices must be created by admins, regarding schedule change, or holidays or etc. The notices could also be directed by the teacher, these types of notices are not manually created but are generated.

For instance, consider a teacher has added an assignment in the assignment section, that would generate an alert towards respective students of respective classes and only when they submit the given assignment can they delete the notice from their end.

Similarly, when a student submits the assignment, they are generating a notice for teachers that the following student has submitted the assignment. So, that the teacher could grade them.

7. TECHNOLOGY USED

1. Flutter Framework for frontend
2. Firebase auth for authentication services
3. Firestore database for database management
4. Firebase Storage for storing all the important files

8. MOBILE APPLICATION FEATURES

Simplicity and user-friendly interface were the primary focus in designing the web app. It's broadly classified under 3 login interfaces:

1. Student Login
2. Teacher Login
3. Admin Login

An admin has following liberties once they login:

- Add Student, Teacher or admin
- Delete Student, Teacher or admin
- Edit details of Admin, Student or teacher
- Edit the institute related details
- Edit schedule
- Add Notices
- Add Material

A teacher has following liberties once they login:

- Check progress of students
- Add marks for tests
- Add assignments or grade them
- Add material
- Check notices
- Check schedule
- Check doubts and solve them
- Start an online lecture
- See institute details

A student has following liberties once they login:

- Check their respective progress

- Check for assignments and submit them
- Check material
- Check notices
- Add and check doubts and their solutions
- Join online lecture
- See institute details
- Check schedule
- Check their respective marks
- Check leader board of students where they stand

9. CONCLUSIONS

In this work implementation of a institute management system with functionality such as student and teacher database handling, materials and assignment file structure management, student progress analysis has been done. So k nearest neighbour classification algorithm and various package such as firebase_auth, cloud_firestore, flutter_spinkit, firebase_core, provider, file_picker, syncfusion_flutter_charts, etc have been used and this product will be helpful to each and every student, teacher within an institute.

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