

Teacher Management System App

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Abstract—Every year, a large number of teachers are hired and posted in various government schools through government exams. Teachers are tracked manually from the time they are hired until the end of their service period, making it difficult to manage and keep track of them. In order to address this issue, we will provide the government with the convenience of managing teachers through a single portal, which will aid in maintaining a clear status of the teachers currently posted. In this project, we intend to create an app that will reduce manual labours. TRAPP's primary goal is to systematically record, store, and update teacher records. TRAPP data is used to conduct online teacher searches. This software allows users to easily find teachers based on their needs.

Index Terms— Governments, Exams, Teachers, Management, Smart, India, Hackathon, Technology.

I. INTRODUCTION

Every year, a large number of teachers are hired and posted in various government schools through government exams. Teachers are tracked manually from the time they are hired until the end of their service period, making it difficult to manage and keep track of them [1]. In order to address this issue, we will provide the government with the convenience of managing teachers through a single portal, which will aid in maintaining a clear status of the teachers currently posted [2]. We created this project to decrease the manual labours of the Maharashtra government, since this is a problem statement from the Smart India Hackathon 2022. This project has two modules: Admin and User [3]. The administrator has complete control over the user information/profile, including the ability to manage, edit, update, search, and remove it. And the user has the ability to add, amend, upload documents, and submit information [4]. This app was created with React Native and the Firebase database. And we utilized Visual Studio Code as our IDE. TRAPP's primary goal is to systematically record, preserve, and update teacher records [5]. TRAPP data is utilized to conduct online teacher searches. With the aid of this programme, a person may simply find a teacher that meets his or her needs [6].

II. LITERATURE SURVEY

We conducted a survey on the Teacher Information Management System By Government of Meghalaya and Teacher Transfer Management System (TTMS) by Education Department of Assam and Government Of Maharashtra.

Teacher Information Management System By Government Of Meghalaya

The TIMS (Teacher Information Management Systems) Project has been launched by the Meghalaya govern-

ment through the Department of Education. It is a ground -breaking programme that users cutting-edge it to support education [10]. TIMS (Teacher Information Management System) is a web-based that is centrally maintained and contains information about teachers, such as their date of appointment, posting, grade level, income, and other details remuneration, facts regarding promotions, transfers, and retirement, etc.a special central database that is accessible from anywhere at anytime via any device or interface[11].

Since TIMS is a web-based software, access can be permitted from anywhere, it will also be used as a tool to enable quick retrieval of crucial information and data for Teachers and Schools [12]. At all levels of the Education Department, crucial auto-reports and dashboards can also be created, making TIMS a crucial aspect of the Department's efforts toward e-governance, which will ultimately be crucial in establishing effective and efficient governance [15].

Teachers Information Management System: Key Achievement- Need Assessment, Functional Require- ments Design, and Technical Document., Data collect- ing from 9236 government entities and digitization of 27342 teacher records. & Govt. Assisted Schools. India has a state called Meghalaya., 1456 instructor records from 21 government institutions and the government colleges that receive help were collected, digitized, and subjected to quality assurance[21]. The develop- ment of the entire programme, including dashboards and Teacher, is complete. profiles, mid- day meal,use of geographic information systems school management profiles, college management profiles, and (GIS) De- sign of Modules by Meghalaya's Directorate of School Education and Literacy The usage of Google Earth, evaluation reports for geographic information sys- tems(GIS), MiD- Day Meal, and workshop profiles, as well as school and college management profiles[20]. User Acceptance Testing has been completed. Soft Launch has been completed. The programme is now located at the State Data Center instead of the Imple- menting Agency Server(SDC).the application is now available at <http://megtimes.gov.in> [19] operation and maintenance got under way on September 1st, 2020. Change Management will automate the Department's present manual salary and sanction, retirement, ap- pointment, and promotion and transfer processes. How-ever, these processes have not yet been fully created and completed.

A. Teacher Transfer Management System By Education Department Of Assam

Assam's education department's Teacher Transfer Management System (TTMS): For all government teachers who want to be moved, Assam's education department has created a new online application site called "Teacher Transfer Management System [13]." The goal of this effort is to prevent corruption and speed up the procedure by digitizing it,as well as to keep the Pupil Teacher Ration in schools [14]. The preferred instructors will be able to submit their transfer request in the form of an application on the official site new digital approach. The Teacher Transfer Management System, or TTMS, became live on November 22nd, 2021 [8].

B. Teacher Transfer Management System By Rural Development Department (Rdd) Of Government Of Maharashtra

The Maharashtra government's Rural Development Department (RDD) has established a new web-based online platform for the Teacher Transfer Management System. The goal of this programmed is to digitise the transfer process [5]. Teachers will be able to submit transfer requests using this official portal and will obtain system generated transfer orders without the need for manual intervention. The portal is separated into three stages. • Phase 1 - Update of Teacher Profile Data • Phase 2 - Inter District (Among Districts) • Phase 3 - Intra District (Within District) Transfers of Zilla Parishad School Teaching Staff [11].

C. Research on the Management Information System of College Education and Teaching Based on Web

The information construction of education management in China has advanced to a new degree of development as a result of the adoption of CERNET in all types of schools and education management departments at all levels. The original closed and independent management mode of school administration was severely upset by the Internet-based campus network, which then started to transform into an interconnected and open system. On the other hand, the current study on teaching management information system has started to take shape, though the actual application is still in its early stages. The following are the main causes, in addition to a lack of funding for education and an inadequate foundation for educational technology: [7]

The lack of standards for teaching management information systems causes enormous data duplication and resource waste, making it challenging to implement resource sharing and system interoperability. On the other hand, just standardizing data cannot address the issue of system interoperability. The scientification of educational administration has benefited greatly from numerous innovative independent teaching management information systems. Information sharing across the network, however, is challenging to implement due to the

mutual closure and independent operation of the teaching, finance, people, equipment, scientific research, and other single management systems built in various eras and departments [8].

The quality of information available to educational administrators is lagging slightly; in particular, it is crucial to determine whether the top cadres at all levels are aware of current information management component of the campus network management information system's development and deployment. Inability to pay attention to and care about the development and use of teaching management information systems will result in insurmountable obstacles to the system's development and application if school leaders and education administrators are unaware of modern information management and do not comprehend its function and characteristics. Recently, a few schools even created a teaching management information system that is essentially ideal, yet the teaching management information system due to limitations in some managers' awareness, aptitude, and other areas, as well as the function of conservative forces in the work process, they cannot be completely utilized and developed.[3]. There has been some advancement among academics in this field. An MVP-based design was created by Shi and his colleagues for a teaching management information system at a university. The system divides the system architecture into three layers: model (business logic layer), presenter (moderator layer), and view. It uses the more sophisticated MVP (Model View Presenter) software design mode (view layer). On the basis of the system framework, the hardware used in the system, including the primary control chip and communication network, is explained in detail. Based on the system's functional requirements, the system is divided into a login module, teacher management module, student management module, public management module, daily management module of educational administration, and system management module. The system's throughput performance is then compared and examined. The system's throughput needs are met by the QPS (queries per second), concurrency number, number of queries per second, average response time, and other factors when 20,000 users are accessing it simultaneously. A management information system course was developed by Rongjie and Liangnan using the BOPPPS paradigm[5].

Given the traits and issues with the management information system course material, this paper tries to implement the BOPPPS learning mode in the management information system classroom. It uses the more comprehensive and challenging to teach chapter "business information system in career" as an example to design the teaching of BOPPPS in order to achieve interaction and high efficiency. In addition, it examines the special approach and problems that must be resolved in order to spread the idea of course modularization and interactive learning that BOPPPS learning mode promotes to other business school courses.

A university teaching equipment management system based on the SSM framework was suggested by GanQihong et al. The management of teaching equipment and the entire process of fine management reform of teaching equipment must be aided by information technology. The SSM framework serves as the foundation for the system technology architecture. The primary algorithms and system samples employed in the system's development are supplied in the final section. [9]. The system's three functional modules—equipment information management, maintenance management, and operation management—as demonstrated by the results of the experimental tests are able to realize the information of teaching equipment, the entire process, and fine management, as well as lay the foundation for intelligent management. Information security management is the process of creating information security policies and goals, whether they are general or specific. By defining the system's scope, creating an information security policy, outlining management responsibilities, and choosing control techniques and objectives based on risk assessment, the business must build an information security management system. To get a really all-encompassing cloud computing solution, security is crucial. At the same time, the industry's attention is now more on how to improve an organization's internal information security management[7]. Therefore mentioned methods, however, suffer from a number of shortcomings, including slow data recall and lengthy query times. As a result, this study offers a Web-based information system for managing academic settings in universities. It is a comprehensive teaching management system that includes management of educational administration, student status, teacher student, school production, book, and system management as its main functions [5].

III. METHODOLOGY

TRAPP stands for Teacher Recruitment Application. We Have 2 modules in our project.-Admin, User(user can be teacher). Basically we are creating this project for teachers where teacher can upload their details and documents and those documents are verified by admin.

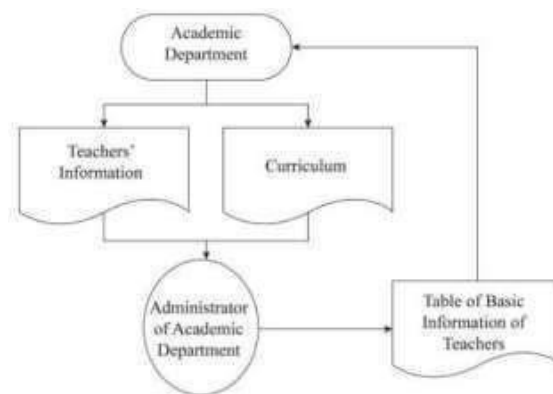


Fig.1. System Flowchart [20]

Admin: A system called an admin panel, often known as a control panel, enables website administrators and other employees to carry out various activities like monitoring, managing, and controlling specific processes. One of the essential elements of a control panel is an admin dashboard. Admin can login on portal by providing username and password. After logging, the admin can search a particular teacher by its UID. Show Teacher have different fields like Sr. no, Teacher UID, Name and 3 group buttons view, delete and approved.

User: To begin, the teacher must register him-self/herself by providing information such as Full Name, Email, Mobile, Teacher UID, and Password. Once registered, the teacher will receive one link in their email for verification of an authorized person. After clicking that link, the user can access TRAPP by entering their email address and password. After logging in, the user has an account that includes fields such as My profile and Documents. Document upload, My docs Basic user information such as Personal Information, Address Information, Past Qualification Details, and Posting Details can be found in the MyProfile section.

Personal Information: Full Name (As per CAT/TAT etc Mark sheet), Date of Birth, Age, Gender, Mobile Number (verified), Email Id (verified), Aadhar no, Teacher UID.

Address Information: Address, State, District, Taluka, Village, Pincode, Is correspondence Address same as Permanent.

Past Qualification Details: Qualification Level, Stream, Course, Board/University, Admission Year, Passing Year, Result, Percentage, Upload Mark sheet (Only

.jpeg .jpg .pdf files allowed and file size between 15 KB to 256 KB).

Posting Details: College/ School Name, UDISE (Col- lege/School) Code, Designation, Address, Date of Joining, I am currently working, End date.

In documents section there are two fields upload documents and my documents.

Upload Documents: In this section, we have to write the name of the document like resume and then click on button to select the document and after selecting it click on upload button. This is the way of uploading the documents successfully.

My Documents: In this section, we can see our uploaded document sequentially along with its name (document name).

Firebase Database: A tree of lists of things can be stored in Firebase, a real-time database. It permits data synchronization between numerous devices. The database is a No-SQL JSON one [3]. A cloud-hosted database, such as Firebase Real-time Database, allows users to use it as a service while operating in the cloud. Data is saved in the data storage and transport format JSON (JavaScript Object Notation) [2]. Real-time data access is available to all users that are linked to it. Authentication, storage, a fire-store database, and a real-time database are all included in this Firebase [7]. You can specify how your data should be formatted using the Firebase Real-time Database Security Rules, a complex expression-based rules language that is part of the Realtime Database. if it can be read from or written to [8]. When Firebase Authentication is utilized [7], developers can control who has access to what data and how they can access it.

Authentication: Authentication confirms that you are who you claim you are or that whatever you possess is not a fabrication. It could entail validating documentation, soliciting your feedback, or both [4]. When we talk about authentication, we usually mean computer systems and cyber security. This contains an email id with its creation and signed in dates, as well as an auto-generated public id [6]. Finding out whether or not someone or anything is who or what they say they are is the process of authentication [4]. By evaluating whether a user's credentials match those in a database of authorized users or in a data authentication server, authentication

technology regulates system access .In this approach, authentication maintains the protection of organizational information, secure systems, and procedures [6].



Fig.2. Authentication [7]

Storage: The capacity protected by the database management system in the memory of the server assigned for the database and related operations is referred to as the data storage system [9]. We have established two folders in this storage: documents and icon [6]. We have all of the registered teacher email addresses and documents that they have posted in docs. Document information: Name, Size, Type, Created, Updated, and all pictures used in our project Teacher Recruitment Application are stored in Icon [10].The act of storing involves employing computer technology to place digital data in a data storage device A computer can store data eternally or temporarily using this technique [7]. The majority of digital devices require storage components like flash drives and hard discs because they enable users to preserve a variety of data kinds like movies, documents, photos, and raw data. Storage is often referred to as electronic data storage [5].

Firestore Database: A scalable and flexible No-SQL cloud database is Cloud Firestore [11]. For the creation of clients and servers, it is utilised to store and synchronise data. It is used for server, web, and mobile development by Google Cloud Platform and Firebase[12]. It is the initial database for Firebase. In this Firestore, we have instructor personal information such as created at, email, id, cell-phone, name, and password [13].



Fig.3. Fire-store Database [17]

Realtime Database : A database system known as a real-time database uses real-time processing to manage workloads whose states are continually changing. This is distinct from conventional databases, which have permanent data that is largely time-insensitive. For instance, the stock market is volatile and moves quite quickly. Through a single API, the Firebase database gives the application access to both the data current value and any updates to it. Real-time syncing allows our customers to view their data from any computer or mobile device. The Real-time database enables our users to cooperate with one another[14]. In this portion, we have all of the teachers' public ids with their various documents, and every time one link is automatically generated for

each document with the document name and status, which shows whether the document has been approved by admin or not [15].

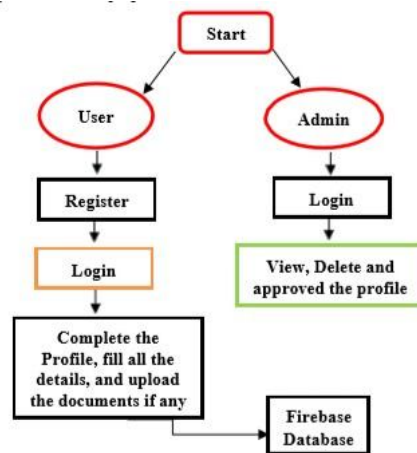


Fig..4. Flowchart of Teacher ManagementSystem

IV. RESULTS



Fig.5. Splash Page

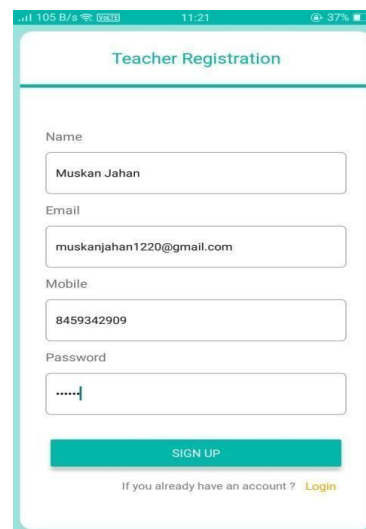


Fig.6. Registration Page

After splash page there will be registration page. New user can register them by filling the registration form (fields like Name, Email, Mobile and Password).

After Registration, the User have to verify the email id. The app will send the verification mail to user. After verification of emailid the user can login themselves by entering username (email) and password. After clicking on account option you have my profile option. In that you have to fill your personal information.

In My documents menu you will see all the uploaded documents. In documents menu you can upload your documents.

V. CONCLUSION

This application gives an online version of Teacher Management System that will aid schools /colleges who desire to keep teachers records in a one single portal. This application will help the government to manage and keep track of teacher record/information. This application is also helpful for private schools/colleges. The application was designed to process online and generate reports constructed in such a way that future modifications are simple.

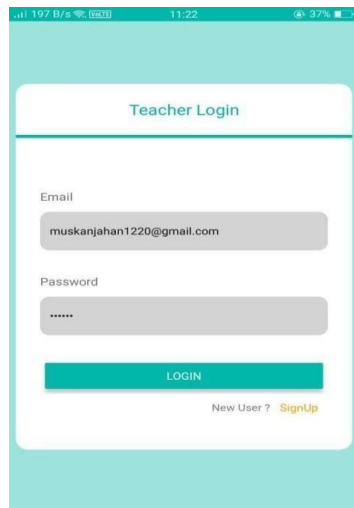


Fig.7. Login page



Fig.8.User Dashboard

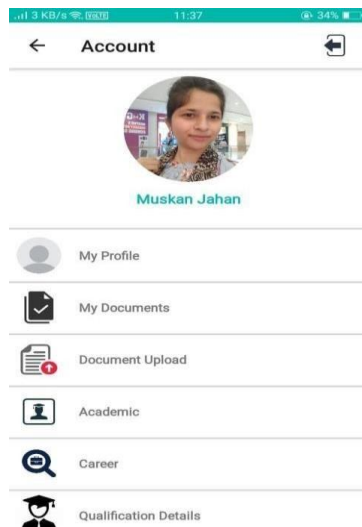


Fig.9.Profile Page



Fig.10. My documents

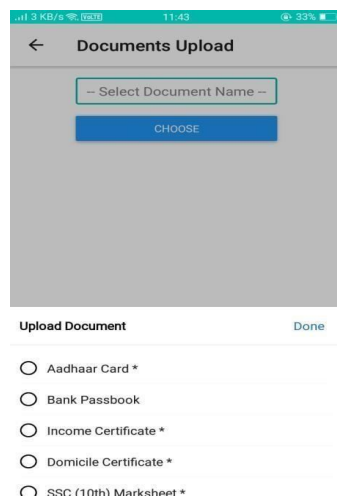


Fig.11. Upload Documents

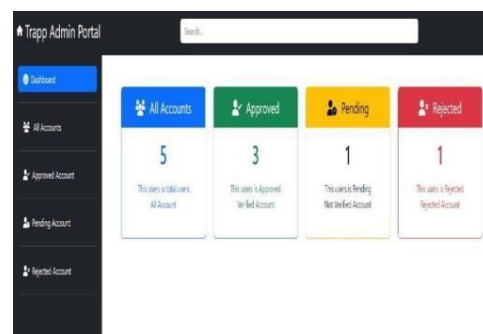


Fig.12. Admin Dashboard

FUTURE SCOPE

In the future, we may use this system for all government sectors, such as government banks and Indian Railways. In the future, we will be able to virtually validate data to determine whether or not the data provided by teachers is correct. The system is very adaptable and efficient, allowing for easy contact between management and teachers. The system will be adaptable to any changes that are required.

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