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WEB SERVICE FOR STUDENT ATTENDANCE MANAGEMENT SYSTEM

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ABSTRACT

Attendance is the act or fact of attending school or college. Also, attendance is used to define the number of persons present on a particular day at school. An attendance policy provides the guidelines and expectations for students' attendance at school as defined, written, disseminated, and implemented by the school. Depending on the school, attendance may be entered by the class representative or by the teachers, or possibly, both. Attendance can be recorded in many ways such as using web based, RFID, biometrics and bar code scanner. Since most of the application developed nowadays requires the world wide accessibility, web based system is the most common attendance system that is available. Hence we are deploying Student Attendance Management System using Web Service.

Keywords: AngularJS, Cloud, Identification card, NodeJS, QR code scanning Mechanism, Web Services.

I. INTRODUCTION

Web service for Student Attendance management is a simple application that runs on the web. It is built around the Web browser standards and can be used by any browser on any platform. The important benefit of Web Services is typically work outside of private networks, offering developers a non-proprietary route to their solutions. Services developed are likely, therefore, to have a longer life-span, offering better return on investment of the developed service. Web Services also let developers use their preferred programming languages. Web Services are virtually platform-independent. Web Services allow the business logic of many different systems to be exposed over the Web. This gives your applications the freedom to choose the Web Services that they need. Instead of re-inventing the wheel for each client, you need only include additional application-specific business logic on the client-side. This allows you to develop services and/or client-side code using the languages and tools that you want. Web Services provide not a component-based model of application development, but the closest thing possible to zero-coding deployment of such services. This makes it easy to reuse Web Service components as appropriate in other services. It also makes it easy to deploy legacy code as a Web Service.

In this project using web services we will be developing Student Attendance Information Management System. This system is developed for managing daily student attendance in schools, colleges and institutes. The purpose of building this application is automating the traditional manual process of attendance, which involved tedious

work. It also avoids proxy attendance. Data accuracy is maintained, within a short span of time. As the attendance is maintained in registers it is very cumbersome to manage, track and update the data. Having backup is also very difficult in this method.

II. LITERATURE SURVEY

The literature survey method is an examination of information on specific subject. It is reviewing what is known, and not what is assumed. It aims to create the final, precise representation of the knowledge and research-based theory available topic. This method is going to be used due to need of gathering and processing theoretical base. We are going to use different books and articles also other sources like tutorials and forums. In this way by using different group of sources we can get more detail idea about recommendation systems.

There are plenty of educational institutions that use RFID technology to record their student's attendance. Easy connection of data into internet make RFID technology most common technology used in recording student attendance However, RFID technologies incur high cost and need experience people to handle the system. Apart from that, biometrics technology is another tremendous use of technology in the domain of attendance reporting and tracking. Most of the biometrics technology used thumb print as sign of system entry. This allows a fair and reliable attendance to be recorded since there is no platform for any attendance cheating Biometric utilize the fingerprint apart from thumb print method. Fingerprint peripheral used to record the attendance and sent the data into system using wireless technology. Image recording is another recent method used in recording attendance. These advanced technologies require high costing and well trained system developer.The Design and implementation of Student Attendance Management system based on MVC paper aims at the research of Web technology, as well as the attendance management system based on the campus network for all college students is implemented. The system is controlled by Web Work, while data or status and logic process are enforced by "Action". The system uses Multi-layer structure of J2EE which has been realized by Free Marker, WebWork and Spring. Three technologies have been used in page resources layer: HTML performs structure of document, CSS defines style of document and JavaScript decides behavior of document. The presentation layer is realized by JSP in traditional Web development. The modules of attendance management system include importing course-plan, adding, modifying, querying, verifying and summarizing attendance information.The purpose of Automation of Attendance System using RFID, Biometrics, GSM Modem with .NET framework paper is to develop a wireless system to detect and maintain the attendance of a student and locate a student using RFID, Biometrics, GSM modem with .net framework. For, this the students ID (identification) card is tagged with an Radio-frequency identification (RFID) passive tag which is matched against the database and only finalized once his fingerprint is verified using the biometric fingerprint scanner. The guardian is intimated by a sms (short message service) sent using the GSM (Global System for Mobile Communications) modem. RFID transponder is installed, which will be detecting the location of the student and staff. There will be a website through which the student, teacher and the guardians can view the status of attendance and location of a student at present in the campus. A person needs to be located can be done by two means that is, via the website or by sending the roll number of the student as an sms to the GSM modem which

will reply by taking the last location stored of the student in the database.The main purpose of A Web Enabled Secured System for Attendance Monitoring and Real Time Location Tracking using Biometric and Radio Frequency Identification paper is to develop a safe and secure web based attendance monitoring system using Biometrics and Radio Frequency Identification (RFID) Technology based on multi-tier architecture, for both computers and smart phones. The system can maintain the attendance records of both students and faculty members of an institution. The system can also detect the current location of the students, faculties, and other staff members anywhere within the domain of institution campus. With the help of android application one can receive live feeds of various campus activities, keep updated with the current topics in his/her enrolled courses as well as track his/her friends on a real time basis. An automated SMS service is facilitated in the system, which sends an SMS automatically to the parents in order to notify that their ward has successfully reached the college. Parents as well as student will be notified via e-mail, if the student is lagging behind in attendance. There is a functionality of automatic attendance performance graph in the system, which gives an idea of the student's consistency in attendance throughout the semester.In Mobile Ubiquitous Employee Attendance Monitoring System using Wireless sensor networks paper a Mobile Ubiquitous Employee Attendance Monitoring System (MUEAMS) is implemented with ZigBee devices to offer real time dynamic monitor for employee presence. This study presents a scalable architecture to integrate wireless sensor networks and mobile technologies for dealing with attendance monitoring application in mobile ubiquitous computing environments. The wireless communication architecture is composed of ZigBee Sensor Network, Mobile Transfer, Middleware Web Server, and Mobile Client. The main advantage of this architecture is that it doesn't require costly equipment or deployment. It can be achieved in a short time and low cost. To demonstrate the feasibility of the architecture, a Mobile Ubiquitous Employee Attendance Monitoring System (MUEAMS) is implemented with ZigBee and Mobile devices to offer real time dynamic monitor for employee presence.The focus A Conceptual Model for Automated Attendance Marking System Using Facial Recognition paper is to analyze and critically evaluate the recent attendance marking techniques using face recognition methods. Literature review reveals the fact that the intelligent application of iterative facial recognition techniques can make attendance management systems more reliable. In this paper, the purpose is a conceptual model for automated attendance system through facial recognition. The proposed model uses an integral validation process which enhances the reliability of your model**.** If face recognition is to be done to mark attendance, face detection and verification would be a challenge for the system. Hence the implementation is a difficult task.

III. PROPOSED METHODOLOGY

This methodology contains three major phases, a.ka, attendance marking, attendance management and report generation. User authentication is one of the major factors in attendance monitoring system. Every student is authenticated based on his/her unique user identification number/code. This unique identification will be done by scanning the QR(Quick Response) code present on the ID card. The below figure shows the basic working of the proposed web service for students attendance management system

3.1 Attendance Marking

The QR Code present on the Identification card is scanned first using a QR Code Scanner. When the student scans the identity card, the QR code scanner gives a beep indicating that the identity card has been scanned. Then the scanned information is encoded, that is in binary form will be sent to the server through web service. The database will then be updated by marking the respective student's attendance. Here the USN will be considered as the primary key for marking the attendance.

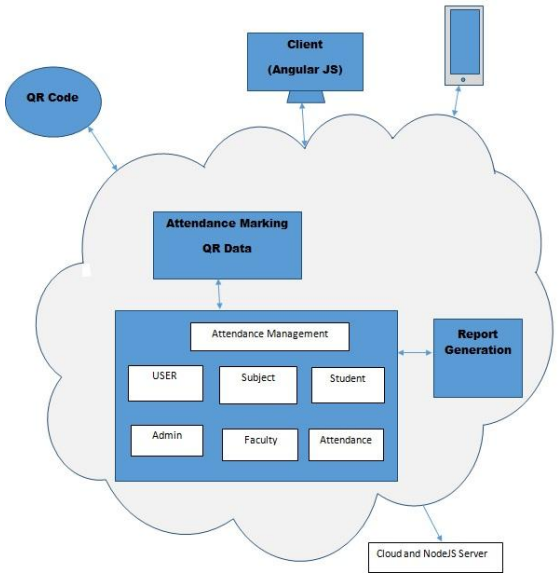

Figure 1: Basic working of the proposed model

3.2 Attendance Management

The student details such as USN, name, date of birth, batch id, email id, mobile number are stored into the database for every batch. The attendance is maintained subject wise. The attendance will be updated on a daily basis. In case of any year loss or transfer of students to other college, their name is removed from the attendance list. It is the administrator's duty to update this information in the database.

3.3 Report Generation

Only the admin, the concerned staff or faculty member is given the authority to generate report. The report is generated by selecting from and to dates. We can view the subject code, subject name, total number of classes conducted, total number of classes attended and the attendance percentage. Separate modules are written for each of the following functions.

IV. CONCLUSION

Web service for student attendance management system is a system in which we have to mark the attendance on the basis of presence by scanning the QR Code using a QR Code scanner. Then this information is passed to the server, where the sever makes call to the API. The API is a set of software which acts as an interface between the server and the database. Then the data is authenticated and if it is valid, then the information is retrieved.

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