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Vellore-632 014, Tamil Nadu, India.

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Standardized Barcode Based Class Attendance Observing Framework

Author Name	Email-id	Registration Number	Marks for Review 1
Mudit Agarwal	mudit.agarwal2016@vistudent.ac.in	16BCE0663	
Naman Khurpia	naman.khurpiya2016@vitstudent.ac.in	16BCE0833	
Ayush Raina	ayush.raina2016@vitstudent.ac.in	16BCE2137	

I. Abstract

Each educational foundation have certain criteria for understudies concerning their interest in class and examinations. The criticalness of understudy cooperation in class can't be over underlined, in this way, heads and speakers of various academic establishments are stressed over the support peculiarities. Amid the time spent yielding understudies into an examination campaign in a large portion of the Indian Institutions, 70% of support must be met and besides considered for survey estimation, henceforth there is a tremendous prerequisite for watching and recording understudies' investment. This accomplishes the need a gadget to control understudies' cooperation. The present model of manual cooperation watching (using paper sheets and an old record structure) isn't gainful and it is in like manner dull These beforehand specified shortcomings among others fill in as help for moving from manual based to the proposed system. The structure relies upon institutionalized recognizable proof examine advancement and the unpretentious components of this system are shown in this paper. The structure can be easily gotten to by the teachers and for the most part basically, the reports can be made constantly taking care of, along these lines, giving essential information about the understudies. Understudy investment accept imperative part in order to legitimize educational consequence of an understudy and school as a rule. Unfortunately, there is no automated cooperation record keeping application open in schools. Through gathering session, Understudy Attendance System (SAS) change gathering, have recognized that instructors and school organization go up against issues in recording and managing investment of their understudies. Subsequently, SAS has been proposed and made. Necessity for a gadget to intentionally keep the understudies' cooperation record extended because of growing number of school understudies. Perpetual supply of SAS, customer affirmation testing drove among potential end customers. Eventual outcome of UAT demonstrates most of the customer content with the system with some minor changes required.

II. Introduction

It is verifiable truth that for all intents and purposes all associations regardless of whether business or instructive need to keep up an appropriately record the participation of its workers or understudies for powerful working, arranging, and administration of the association. In most scholarly organizations in creating nations, participation is generally taken physically utilizing paper sheets and the old record framework approach by calling understudies name. As indicated by (Tabassam, et al., 2009) it progresses toward becoming unwieldy for the administration to frequently refresh the records and physically ascertain the level of classes went to for the reason of examinations and consequent outcomes handling. Absence of sufficient participation record keeping has surely deteriorated to a more prominent level most particularly in Nigerian organizations. Numerous scholastic establishments are starting to refresh their measures by issuing understudies with distinguishing proof cards that are outfitted with standardized identifications, ID chips, radio recurrence distinguishing proof (RFID) labels, et cetera (Andrew, 2011) [13]. This choice opens up a window to execute standardized identification distinguishing proof frameworks in classrooms as a administration instrument to take care of a significant number of the issues looked by speakers and the foundations' administration in classroom participation administration. Because of the wastefulness of customary techniques for participation record keeping, a more secure and exact scanner tag innovation display is should have been detailed and actualized. Scanner tag Identification is one of the programmed distinguishing proof advancements more in vogue these days A scanner tag is an optical machine-lucid depiction that contain data identifying with the dissent in which it is joined. At first scanner labels were productively use to address data by changing the widths and partitioning of parallel lines, and this kind of illustration is implied as straight or one-dimensional (1D).[16] Later they ascend into rectangles, spots, hexagons and other geometric cases in two estimations (2D). Notwithstanding the way that 2D structures use differentiate assortment of pictures, they are also implied as institutionalized recognizable pieces of proof too. Scanner labels at first were seen by extraordinary optical scanners called institutionalized ID perusers.

. Since their beginning, standardized identifications were credited to Joseph Woodland (Charles, 2001), the idea of scanner tags have developed from the underlying straight standardized tags "one dimensional" to the Matrix code "two dimensional" and this creation have been connected to numerous territories of life which incorporate stores, drug stores, distribution centers, libraries, also, strip malls. A standout amongst the most unmistakable zones where classroom practices of individual employee's contrast is on the issue of participation approaches. A few employees require participation, some staff include participation decidedly review assurance, while others check the absence of participation against the understudy's review. Indeed most staff who don't require participation by their understudies, empower participation in an assortment of ways. On a very basic level, most employees most likely trust that participation is huge in understudy achievement however a large portion of us can give as it were narrative proof to help our conviction. The current framework is a manual section for the understudies. Here the participation will be recorded in manually written registers. It ordinarily is a monotonous activity to keep up the records for the clients. The recovery of the data isn't as simple as the records are kept up in the manually written registers. Enrollment frameworks are executed in numerous establishments for different reasons. While the reason for these frameworks isn't a concentration in this paper, unmistakably factual data is required by a large portion of those establishments that have a vast number of understudies [23]. Since gathering participation information in numerous establishments has not been electronic, the proposition of changing the present framework was appealing and chose to confront the test and outline an answer for it. In the present participation enlistment framework, instructors need to either request that the understudies compose down their names on a bit of paper, or they need to give a rundown of enlisted understudies and request that they stamp their names. This implies inordinate manual endeavors go into the procedure of classroom participation enlistments. After the information has been gathered, it takes considerably additional time also, endeavors to exchange the information onto other frameworks for information examinations. One of the major defects of the present framework is the way that, participation enlistment data isn't appropriately used to help enhance course timetables what's more, classroom appointments. Another critical snippet of data which the present framework needs is the season of individual participation records [31]. For instance, an issue of whether the dominant part of understudies was available at the start of a class or at later circumstances could help in enhancing classroom related research. This application requires rectify feast upon contribution to the separate field. Assume the wrong sources of info are entered, the application opposes to work, so the client thinks that it's hard to utilize.

III. Literature Review

There is various proposition for Automatic Participation Management Systems in the writing and in the market. These days, standardized tags are every now and again utilized as a part of generally ventures, grocery stores, and wherever data needs to be perused naturally. Shoewu, Olaniyi, and Lawson (2011) proposed an electronic card-based answer for the address participation issue in higher organizations in the creating nations. This framework utilized a single chip PC in light of subsystems interfaced serially to the serial port of the advanced PC. A portion of the impediments of this framework are that not all PC frameworks have serial port. Mahyidin (2008) additionally proposed understudy participation administration framework utilizing Radio Recurrence Identification (RFID). The framework influences utilization of understudy to card with a specific end goal to give or disavowal the understudy from taking participation. This method additionally did not recognize individual based on who he/she is which in this way, can prompt pantomime [14]. Victor, Jonathan, Reece, and Lemire (2003) exhibited a framework that depends on understudy wolf pack club following framework to enhance the procedure of understudy wolf pack club ticket conveyance for athletic occasions. This framework did not, be that as it may, incorporate any part of understudy participation observing. Then again, Saraswat and Kumar (2010), proposed unique mark confirmation system in taking participation. Their proposed framework makes utilization of unique mark confirmation by utilizing extraction of particulars method and framework that robotizes the entire procedure of taking participation. Xue (2009), examines a model framework that utilizes facial acknowledgment innovation to screen and validate client or understudy for participation taking. A neural system-based calculation was executed to complete face location, and an eigen confront technique was utilized to perform facial acknowledgment. The test comes about exhibit the achievability of close constant ceaseless client check for abnormal state security data frameworks. Participation is the demonstration or certainty of going to (being available at) school. Likewise, participation is utilized to characterize the quantity of people show on a specific day at school [12]. A participation strategy gives the rules and desires to understudies' participation at school as characterized, composed, scattered, and actualized by the school. Contingent upon the school, participation might be entered by the class agent or by the

educators, or conceivably, both. Cooperation can be recorded in various courses, for instance, using electronic, RFID, biometrics and institutionalized label scanner. Since most of the application made nowadays requires the general accessibility, online system is the most broadly perceived cooperation structure that open. One of the higher establishment in Malaysia have used RFID to record the interest of their understudy and the record sent to online server for an online accessibility [3]. Beside that, there is a great deal of informational establishments used RFID advancement to record their understudy interest. Straightforward association of data into web make RFID development by and large ordinary advancement used as a piece of recording understudy investment [4], [2], [5]. In any case, RFID advancements realize high cost and need experience people to manage the structure. Beside that, biometrics development is another tremendous usage of advancement in the space of cooperation enumerating and following. By far most of the biometrics development used thumb print as sign of system entry [6]. This empowers a sensible and tried and true interest to be recorded since there is no phase for any investment hoodwinking [7]. Biometric utilize the one of a kind finger impression isolated from thumb print strategy. Novel finger impression periphery used to record the support and sent the data into system using remote development [8]. Picture recording is another present system used as a piece of recording interest. Advancement recorded in internal perception camera used as sign of investment segment in one of the workplace in China [9]. These impelled advances require high costing and all around arranged system architect. Use of institutionalized ID scanner is notable among informative establishment which are not fiscally maintained and it isn't required any inside and out arranged people to present and settle [10]. Institutionalized recognizable proof scanner used as medium to record the interest for one of the assistant school in Malaysia since their understudy card using institutionalized ID.

IV. Survey table

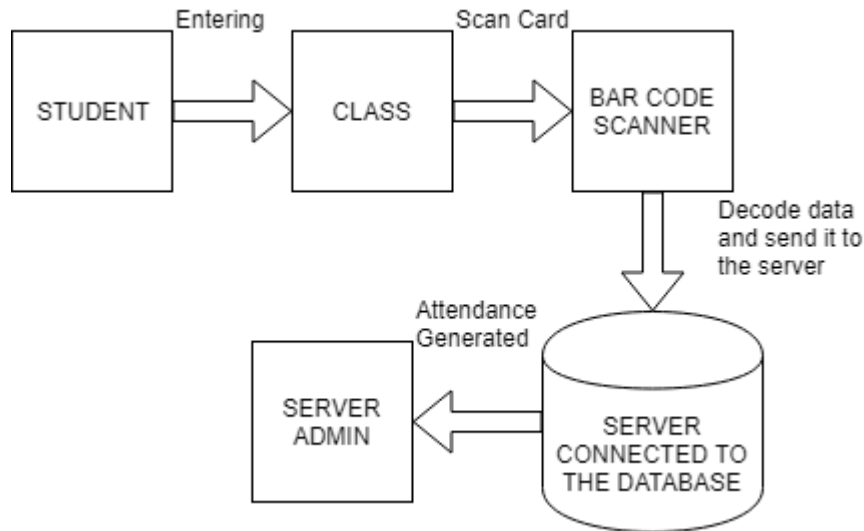
Various Standardized Class Attendance Observing Framework

Means of Entry	Alternate Means of Entry	Protocol	Pros	Cons
Biometric Authentication	RFID, Keypad	GSM	<ul style="list-style-type: none"> - Secure -Provides an increase of convenience -Strong authentication and accountability -Requires extremely less memory from its Data storage unit 	<ul style="list-style-type: none"> -There is no precision in capturing - Only a fraction of data is caught - Binding can lead to failure of the system. - High cost
Camera	Webcam, Motion Sensor		<ul style="list-style-type: none"> - They can easily work with smartphones. - Authorize access for multiple phones simultaneously. - Enhance security camera functionality - Remote access 	<ul style="list-style-type: none"> - Failure in technology - Vulnerable code - Potentially hackable software - High price and bulky design
RFID	Biometric, Keypad	ISO 14443, ISO 15693, ISO 18000	<ul style="list-style-type: none"> - Does not require line of sight for 	<ul style="list-style-type: none"> - Interference problems

			scanning - Can reduce labor cost - Increased durability	- The cost of upgrading equipment and facilities
Keypad	Key		- No need to carry key - Can provide passage to others at our house - Safe	- Those systems which run on electricity may not run efficiently in loss of power - Code hacking easy by intruders
Bar Code Scanner	Biometric, Keypad	FERET	- Improvement of security level - Easy Integration Process - High Accuracy Rates - Full Automation	- Processing and Storing - Image size and quality - Surveillance angle

V. Procedures for Proposed Method with an Algorithm

Working Framework for Implementation of our Bar Code Scanner System



Basic Architecture

Algorithm:

Initialize number of students;

1. **while** people enter the class, we **do**
 - a. Calculate the number of people;
 - b. Debug the code and send it to the database;
 - c. **for** every count, we **do**
 - i. output = Descending order (of Count w.r.t registration no.);
 - d. **end** the **for** **loop**
2. **end** the **while** **loop**

VI. Implementation

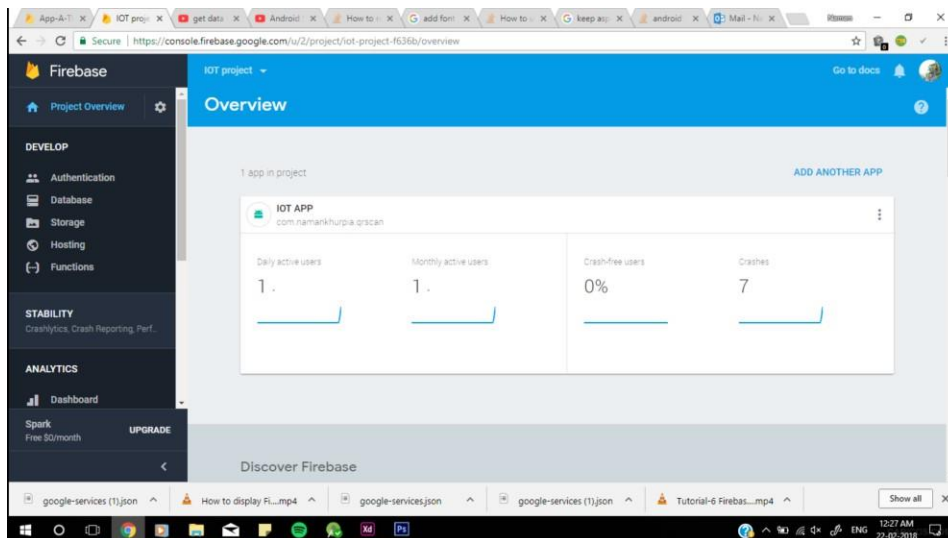
Hardware

- Camera
- Smart Phone
- USB 2.0 Cable
- Laptop

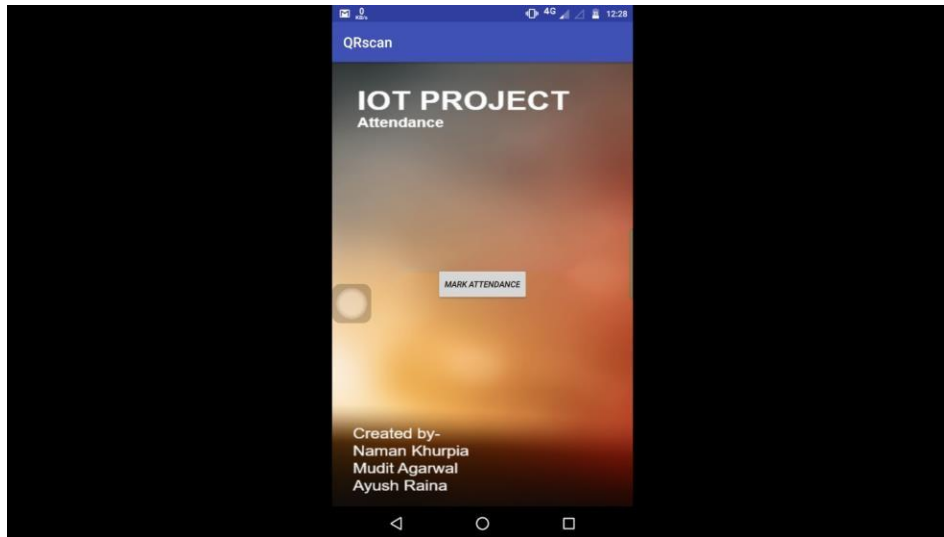
Software

- Android studio 2017
- Google Firebase
- QR Code Scanner
- HTTPS Protocols for API calling

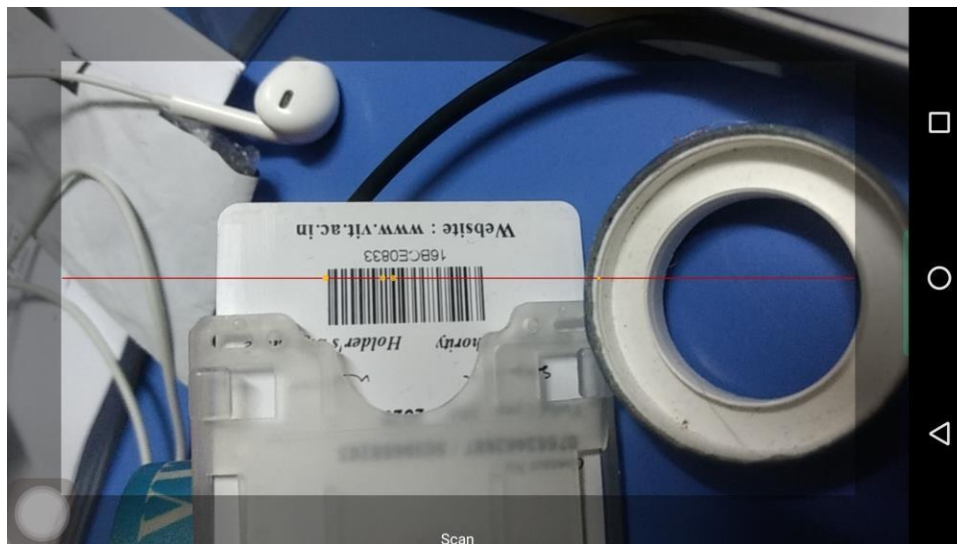
GOOGLE FIREBASE AS BACK-END



FRONT-END OF THE APP



CALLING THE HTTP PROTOCOL FOR THE API



VII. Result and Discussion

Week after week report get specific hour points of interest of participation from beginning date to consummation date and show the status. 2. United report get all understudy participation subtle elements from beginning date to finishing date status help for the qualification criteria of the understudy to go to the examination. Output outline for this application "Understudy Participation Management System" all things considered implies the reports and information that are delivered by the structure from various end-customers; yield is the main role behind working up the system and the introduce on which they survey the handiness of the application. The yield is arranged with the end goal that it is engaging, useful, and valuable. Structures are arranged with various features, which influence the help to yield all the all the more fulfilling. As the yields are the most basic wellsprings of information to the customers, better arrangement should improve the structure's relationship with customer and in like manner help in essential authority. Edge design clarifies the way yield is shown and the plan available for getting information.

VIII. Conclusion

Mechanizing classroom participation following has numerous preferences over the old framework. Information from classrooms can without much of a stretch be changed into databases for conceivable later investigations or utilizations. This may help in enhancing the outline of timetables and classroom reservation choices. A noteworthy hindrance, be that as it may, is keeping up the product program of the framework. The objective of this work was to test and assess a continuous, framework utilizing scanner tag on understudies ID card. The comes about because of the tests that were led on the framework all things considered demonstrate that the framework outline is appropriate for innovative difficulties that require continuous arrangements. Besides, the achievement of these tests left most likely that scanner tag arrangements are anything but difficult to actualize, modest in terms of cost, and successful as far as dependability what's more, proficiency.

A minor concern, be that as it may, might be in the zone of support. This task means to give another technique to take understudy participation for all the colleges. Speakers can take understudy participation, see understudy participation and alter understudy participation with cell phone. It is a "more brilliant" approach to finish the errand. This task is finished by alluding and following the venture design arranged amid the arranging stages. The venture breakdown in the task design additionally goes about as a direction of this task. In the conclusion, the consequence of this venture has met every one of the prerequisites assembled amid the arranging and examination stages. The framework created with the chosen procedure. It is additionally breezed through all the experiments. This venture can be direction and reference for future individuals who are going to build up the framework like this venture. Individuals can allude this task and come up with a more inventive and imaginative thought

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