



ISSN: 0975-766X
CODEN: IJPTFI
Research Article

Available Online through
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UNDERSTUDY ATTENDANCE SYSTEM UTILIZING BARCODE SCAN

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Received on: 02.10.2016

Accepted on: 28.10.2016

Abstract:

The project is a system that takes down understudy attendance utilizing barcode. This is an interesting concept set forth to automate the traditional attendance system by using authentication technique. The traditional system requires a register maintained for manually marking attendance for the students which is time consuming. Hence this proposed project eliminates the need of maintaining attendance sheet. The proposed system uses barcode method for authenticating students with a unique barcode that represents their unique id. Each understudy is furnished with a card that contains the standardized identification. Understudies simply need to check their cards utilizing scanner tag peruser and the framework notes down their participation according to dates. Framework then stores every one of the understudies' participation records and creates defaulter rundown and reports for administrator. Such sort of use is extremely helpful in school and also in school for taking every day participation.

Introduction:

A standardized identification peruser additionally called a value scanner or purpose of-offer (POS) scanner is a hand-held or stationary data gadget used to catch and read data contained in a standardized identification. A standardized tag peruser comprises of a scanner, a decoder (either implicit or outside), and a link used to associate the peruser with a PC. Since a standardized tag peruser just catches and makes an interpretation of the scanner tag into numbers and/or letters, the information must be sent to a PC so that a product application can understand the information. Standardized identification scanners can be associated with a PC through a serial port, console port, or an interface gadget called a wedge. A scanner tag peruser works by coordinating a light emission over the standardized tag and measuring the measure of light that is reflected back. (The dim bars on a standardized tag reflect less light than the white spaces between them.) The scanner changes over the light vitality into electrical vitality, which is then changed over into information by the decoder and sent to a PC. The proposed framework utilizes scanner tag strategy for

validating understudies with a one of a kind standardized identification that speaks to their extraordinary id. Each understudy is furnished with a card that contains the standardized tag. Understudies simply need to examine their cards utilizing standardized tag peruser and the framework notes down their participation according to dates. Framework then stores every one of the understudies' participation records and produces defaulter rundown and reports for administrator. Such sort of utilization is extremely helpful in school and also in school for taking day by day participation.

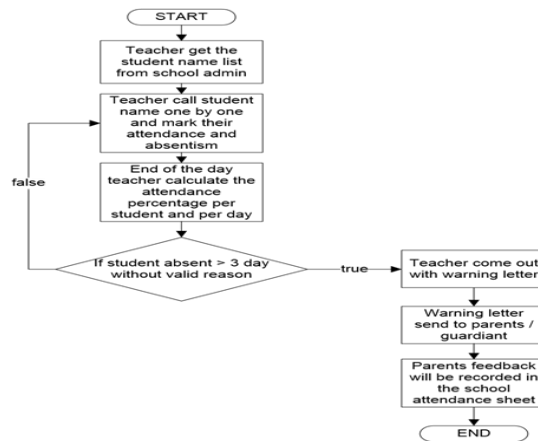
Working:

It would be no extraordinary having institutionalized labels if we didn't have the development to scrutinize them. Institutionalized label scanners must have the ability to examine the exceptionally differentiating zebra lines on things to an incredible degree quickly and reinforce that information to a PC or checkout terminal, which can recognize them speedily using a thing database. Here's the way by which they do it. With the end goal of this clear specimen, we ought to acknowledge that institutionalized recognizable pieces of proof are essential on-off, twofold cases with each dull line identifying with a one and each white line a zero. Most standardized identification scanners comprise of three distinct parts including the enlightenment framework, the sensor, and the decoder. When all is said in done, a standardized tag scanner "checks" the highly illuminating so as to contrast components of a standardized identification the code with a red light, which is then changed over into coordinating content. All the more particularly, the sensor in the standardized identification scanner identifies the reflected light from the enlightenment framework (the red light) and creates a simple flag that is sent to the decoder. The decoder translates that flag, approves the scanner tag utilizing the check digit, and coverts it into content. This changed over content is conveyed by the scanner to a PC programming framework holding a database of the creator, expense, and amount of all items sold. This video is a fast lesson in standardized tag filtering and highlights the essential contrasts between a Contact Scanner, Laser Scanner, and an Imager. Because standardized tag scanners are variable and incorporate differing abilities, some are more qualified for specific commercial enterprises because of perusing separation and to work volume limit.

1. Filtering head sparkles LED or laser light onto standardized tag.
2. Light reflects back off scanner tag into a light-identifying electronic part called a photoelectric cell. White zones of the standardized tag reflect most light; dark territories reflect minimum.

3. As the scanner moves past the standardized identification, the cell creates an example of on-off heartbeats that relate to the high contrast stripes. So for the code appeared here ("dark white dark white dark"), the cell would be "off on off on off."
4. An electronic circuit connected to the scanner changes over these on-of heartbeats into double digits (zeros and ones).
5. The parallel digits are sent to a PC joined to the scanner, which identifies the code as 11101011.

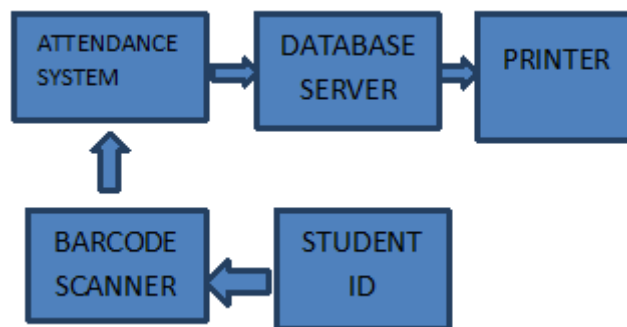
Overview of Manual Process: If the teacher call the student attendance one by one and mark their attendance and absentees. And at the end of the day teacher calculate the attendance percentage as per student and per day. If student absent without permission teacher come out with warning letter and it sends through the parents immediately. Finally, parent’s feedback will be recorded in the school or college attendance sheet.



System Design:

Design determines the success of an end product. System design outlined into 2 types of design; which is architecture design and functionality design.

Architecture Design:



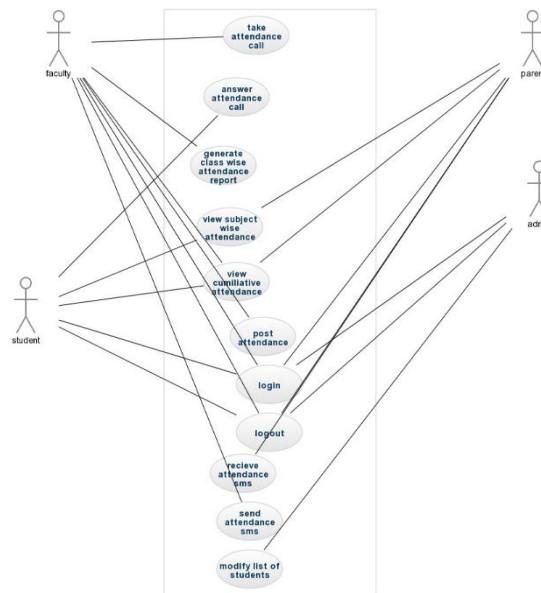
Barcode scanner used to scans the barcode of the student card and sends the attendance record to the Student attendance system saves the data and through sends to the database server. Finally, the total students’ attendance sends to the particular class period and through the college or school portal and takes the printout of the Attendance.

Functionality Design:**Use Case Diagram:**

The motivation behind use case graph is to catch the dynamic part of a framework. Be that as it may, this definition is excessively bland, making it impossible to portray the reason. Since other four outlines (movement, arrangement, coordinated effort and Statechart) are additionally having the same reason. So we will investigate some particular reason which will recognize it from other four charts. Use case outlines are utilized to assemble the prerequisites of a framework including inner and outside impacts. These necessities are for the most part outline prerequisites. So when a framework is investigated to assemble its functionalities use cases are readied and performing artists are distinguished. Presently when the introductory errand is finished use case graphs are displayed to show the outside perspective.

So in short, the reasons of utilization case charts can be as per the following:

- ✓ Used to accumulate necessities of a framework.
- ✓ Used to get an outside perspective of a framework.
- ✓ Recognize outside and inward elements affecting the framework.
- ✓ Demonstrate the associating among the prerequisites are on-screen characters.

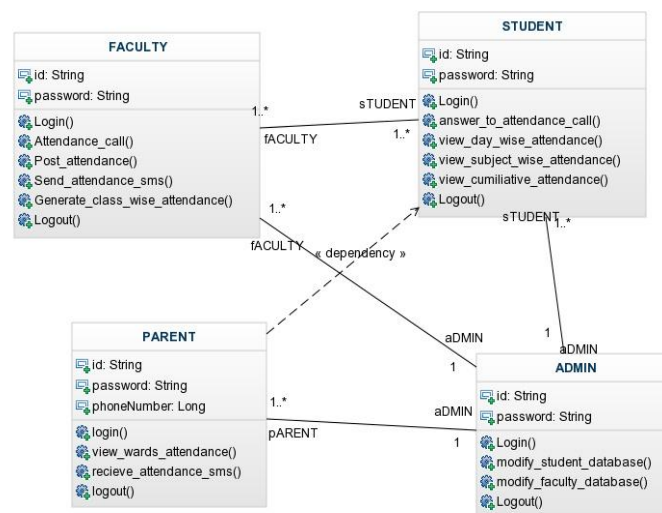


This Design Says that if understudy truant Once Message will sends to the folks instantly. This makes it simple to discover the understudy Daily Report to Parents. Participation report produced by educator separated into three sort of report, for example, every day, week by week and month to month report as archived in manual participation record. In a roundabout way this framework likewise help in creating cautioning letter to understudies who didn't satisfy the school necessity on the participation matter.

Class Diagram:

In programming designing, a class chart in the Unified Modelling Language(UML)is a sort of static structure graph that depicts the structure of a framework by demonstrating the framework's classes, their properties, operations (or techniques), and the connections among objects. The reason for the class outline is to show the static perspective of an application. The class graphs are the main charts which can be specifically mapped with article situated dialects and along these lines broadly utilized at the season of construction. The UML outlines like movement chart, succession outline can just give the arrangement stream of the application yet class chart is somewhat distinctive. So it is the most famous UML graph in the coder community. So the reason for the class outline can be abridged as:

- ✓ Analysis and Design of the Static perspective of an application.
- ✓ Describes Responsibilities of framework.
- ✓ Base for part and arrangement chart.
- ✓ Forward and figure.



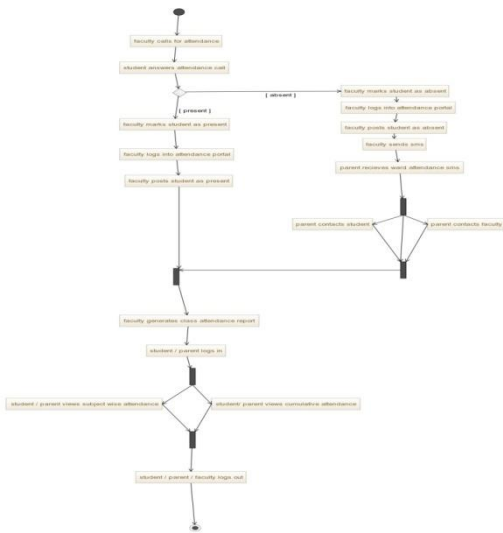
Class charts are the most prominent UML graphs utilized for development of programming applications. So it is essential to take in the drawing methodology of class diagram. Class outlines have part of properties to consider while drawing however here the chart will be considered from a top level view. Class graph is fundamentally a graphical representation of the static perspective of the framework and speaks to various parts of the application. So a gathering of class graphs speak to the entire framework.

Activity Diagram:

Movement chart is another imperative outline in UML to portray dynamic parts of the framework. Movement outline is fundamentally a stream graph to speak to the stream structure one action to another action. The movement can be

portrayed as an operation of the framework. So the control stream is attracted starting with one operation then onto the next. This stream can be consecutive, extended or simultaneous. Movement graphs manages all sort of stream control by utilizing diverse components like fork, join etc. The essential purposes of action charts are like other four outlines. It catches the dynamic conduct of the framework. Other four outlines are utilized to demonstrate the message stream starting with one protest then onto the next yet movement chart is utilized to show message stream starting with one action then onto the next. Movement is a specific operation of the framework. Movement charts are not just utilized for imagining dynamic nature of a framework yet they are likewise used to build the executable framework by utilizing forward and figuring out methods. The main missing thing in movement graph is the message part. It doesn't demonstrate any message stream starting with one action then onto the next. Action graph is some time considered as the stream diagram. Despite the fact that the outlines resembles a stream graph however it is definitely not. It demonstrates distinctive stream like parallel, expanded, simultaneous and single. So the reasons can be depicted as:

- ✓ Draw the movement stream of a framework.
- ✓ Depict the succession starting with one movement then onto the next.
- ✓ Depict the parallel, stretched and simultaneous stream of the framework.



Component Diagram:

Segment chart is an exceptional sort of graph in UML. The intention is likewise not quite the same as every single other graph talked about in this way. It doesn't depict the usefulness of the framework however it portrays the segments used to make those functionalities. So starting their segment outlines are utilized to picture the physical segments in a framework. These segments are libraries, bundles, documents and so forth. Part graphs can likewise be depicted as a static execution perspective of a framework. Static usage speaks to the association of the segments at a

specific minute. A solitary segment outline can't speak to the whole framework however an accumulation of charts

are utilized to speak to the entirety. So the motivation behind the segment chart can be abridged as:

- ✓ Imagine the segments of a framework.
- ✓ Build executables by utilizing forward and figuring out.
- ✓ Portray the association and connections of the segments.

Highlights:

- **Admin login:** Admin is given with a login from where he screens and manages every one of the understudies data and record.
- **Barcode Reading:** Students have to scan their card through barcode reader and the id thus read by the system is stored for that particular day.
- **Defaulter list:** The system generates defaulter list in excel sheet for specified period provided by admin.
- **Report generation:** At the end of attendance process system automatically generates overall report for the class in excel sheet.
- **Search option:** Admin can even search for particular student's attendance details using search option in the system.

Software Requirements:

- Windows Xp, Windows 7(ultimate, enterprise)
- Sql 2005
- Visual studio 2008

Hardware Components:

- Processor – i3
- Hard Disk – 5 GB
- Memory – 1GB RAM
- Barcode Reader

Uses:

1. Students will be more regular in attending their classes since now no attendance sheet signature is required, so no friend or any other student can make an attendance on behalf of others as barcodes are unique for every student.

2. Teachers do not need to waste their time approximately 15min of 1hour for taking attendance of students.
3. No need to maintain attendance sheet as the attendance are electronically stored in database.
4. The system helps the faculty to easily find out defaulters.
5. User may easily get attendance history of a particular student.
6. It saves time, cost, efforts and institute resources.

Draw Backs:

The only disadvantage is that every class requires a barcode reader to access the system.

Applications:

The system can be used for schools, college, or universities for taking down attendance.

Conclusion:

An application required by most of the schools is in order to ensure efficient attendance record keeping. Student attendance System (SAS) that developed for school expected to replace the manual attendance recording process at schools. SAS can reduce the time spent by teacher in calculating the percentage of attendance for a student as well as for a class. In a click of button teacher can generate report at any point of time. Moreover, student's image which displayed after the scanning process expected to help teacher identify students before record their attendance. Since SAS is still under construction, the maintenance and disposition phase will be kept in view for the future research and improvements.

References:

1. A. S. Bedi and J. H. Marshall, "Primary school attendance in Honduras," *Journal of Development Economics*, vol. 69, pp. 129–153, 2002.
2. T. S. Lim, S. C. Sim, and M. M. Mansor, "RFID based attendance system," *2009 IEEE Symposium on Industrial Electronics & Applications*, no. Isiea, pp. 778–782, Oct. 2009.
3. M. Kassim, H. Mazlan, N. Zaini, and M. K. Salleh, "Web-based student attendance system using RFID technology," *2012 IEEE Control and System Graduate Research Colloquium*, no. Icsgrc, pp. 213–218, Jul. 2012.
4. M. K. Y. Sabri, M. Z. A. A. Aziz, M. S. R. M. Shah, and M. F. A. Kadir, "SMART ATTENDANCE SYSTEM BY USING RFID Abstract ," no. figure 2, 2007.
5. A. Qaiser and S. A. Khan, "Automation of Time and Attendance using RFID Systems," no. November, pp. 13–14, 2006.

6. T.-C. Li, H.-W. Wu, and T.-S. Wu, "The Study of Biometrics Technology Applied in Attendance Management System," *2012 Third International Conference on Digital Manufacturing & Automation*, pp. 943–947, Jul. 2012.
7. I. A. Ujan and I. A. Ismaili, "Biometric attendance system," *The 2011 IEEE/ICME International Conference on Complex Medical Engineering*, pp. 499–501, May 2011.
8. Z. Yongqiang and L. Ji, "The Design of Wireless Fingerprint Attendance System," *2006 International Conference on Communication Technology*, pp. 1–4, Nov. 2006.
9. H. Oktavianto, "Image-based Intelligent Attendance Logging System," pp. 1–6, 2012.
10. M. I. Moxsin and N. M. Yasin, "The Implementation of Wireless Student Attendance System in an Examination Procedure," *2009 International Association of Computer Science and Information Technology - Spring Conference*, pp. 174–177, 2009.
11. W. Adi, "System Development Life Cycle Methodologies." 2008.
12. N. Debnath, L. Baigorria, D. Riesco, and G. Montejano, "Metrics Applied to Aspect Oriented Design Using UML Profiles," *Response*, pp. 654 –657, 2008.