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Student attendance recording and performance analysis using a web application.

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ABSTRACT

Smartphones are becoming more preferred companions to users than desktops or notebooks. Knowing that smartphones are most popular with users at the age of around 26, using smartphones to speed up the process of taking attendance by university instructors would save lecturing time and hence enhance the educational process. This paper proposes a system that is based on a QR code, which is displayed for students during or at the beginning of each lecture. The students will need to scan the code in order to confirm their attendance. Face recognition and location detection techniques are also included in the app to verify student identity to eliminate false registrations The proposed model computes numerical reputation values for an entity and its aspects based on opinions collected from various platforms. Our proposed system also offers an advanced visualization tool that displays detailed information about its output.

Keywords: *Attendance, Query, Feedback, Machine Learning, Performance, Analysis, Sentimental, Students, Teachers*

1. INTRODUCTION

Taking the attendance of students making its record and giving attendance report to student's parents is most hectic, day to day, time consuming and repetitive task in every school, college or university. It may include many faults as student attendance sheet takes a lot of entries and many times students also try to record false entries to complete theattendance. Its very difficult to deliver students day to day attendance and progress report totheir parents daily. So, in this paper, we are coming up with idea with which each and every human task regarding student attendance and performance analysis of each individual student is replaced by a web application.

Smartphones are becoming more preferred companions to users than desktops or notebooks. Knowing that smartphones are most popular with users at the age around 26, using smartphones to speed up the process of taking attendance by university instructors would save lecturing time and hence enhance the educational process. This paper proposes a systemthat is based on a QR code, which is being displayed for students during or at the beginning of each lecture. The students will need to scan the code in order to confirm their attendance.

The face recognition and location detection techniques are also included in the app to verify student identity to eliminate false registrations

The proposed model computes numerical reputation values for an entity and its aspects based on opinions collected from various platforms.

Our proposed system also offers an advanced visualization tool that displays detailed information about its output.
A performance analysis system is capable of record the attendance, queries and feedbacks and give visualized sentimental analysis based on the data.

It supports location detection and face recognition to avoid the false registrations in the attendance records.
It saves a lot of lecture time and helpful to increase the student teacher interactions.
It also includes opinion spam filtering, where the spam opinions are detected and eliminated

based on spammers' behavior features, keeping only authentic opinions
This project is np complete.

2. PROBLEM STATEMENT

The idea is been developed just to reduce the repetitive tasks in universities and make the student records more accurate and informative. Out main motive is to make parents get all the information regarding their child's attendance and performanceon daily basis.

3. PROPOSED APPROACH

The proposed web application is made really easy to use for the administrations of schools and universities as well as parents and teachers. The web app takesall the precautions to avoid the false entries in the databases and avoids producing false sentimental analysis and performance analysis.

The system works with the following flow-

- Takes input of attendance records via QR code or face recognition or locationdetection
- Displays feedback form and another form for taking the input of students queries anddoubts
- Generates sentimental analysis in visualized of feedbacks
- Using machine learning algorithms to generate data of mostly asked queries anddoubts of students
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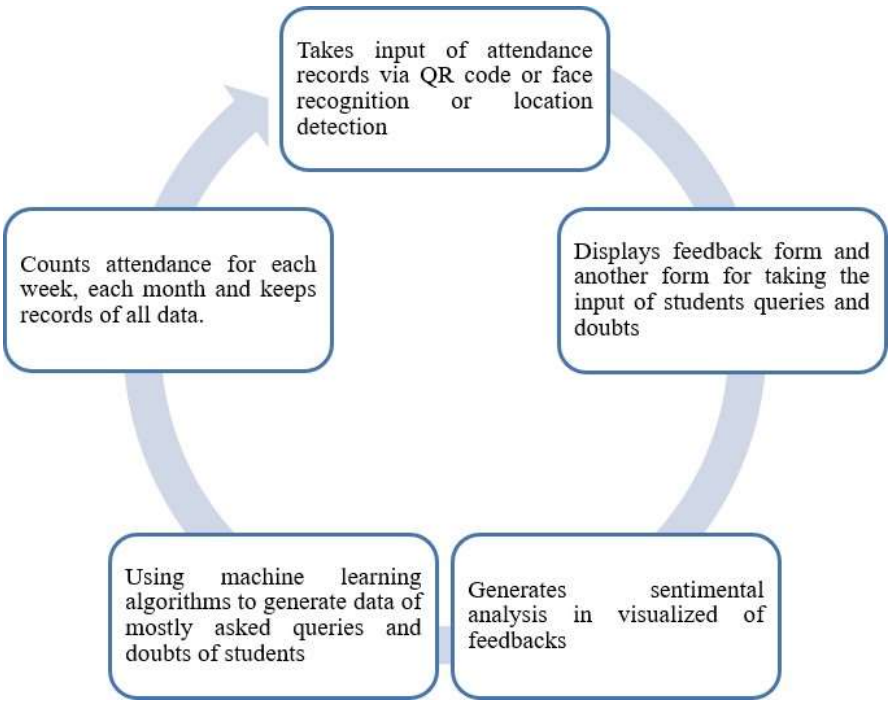


- Counts attendance for each week, each month and keeps records of all data.

Each and every entry it takes in the database is as accurate as it should be. To the data in thedatabase, machine learning algorithm is applied in order to generate the sentimental analysisand performance analysis. When QR code is generated by the teacher, it is generated for specific time interval (time for which lecture is been conducted). When the QR code disappears, and attendance is recorded to the database and sent for the further processing one feedback form pop ups on the screen which consists of the questions regarding the feedback of the lecture and teaching of professors. That form is compulsory for everyone whohas attended that lecture. When student submits the feedback form, the data is stored in thedatabase and it is further evaluated by data pre-processing (removing null values, removing outliers etc.). The it is given to the machine learning algorithm which could generate the sentimental analysis based on that data. This analysis is saved in the visualized form (graphs,pie charts, plots, planes, bar charts etc. diagrams) to the database. This visualised feedback for each lecture is made available to the teachers whenever required.

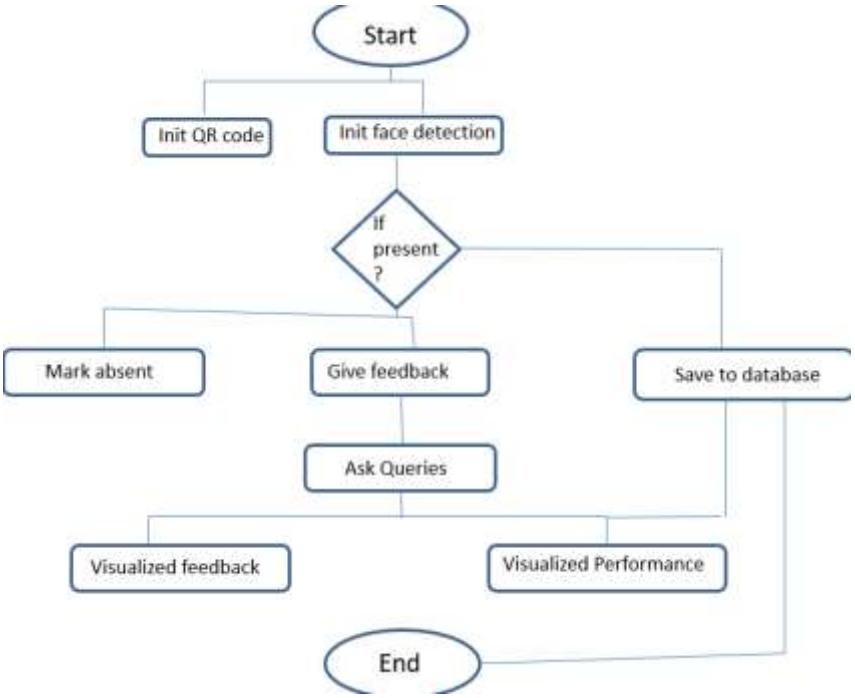
After the feedback form a one query form is displayed which includes a query such as do students understood the concepts, was lecture helpful, did any topic requires a revision, anyqueries etc. students can ask the questions regarding their doubts and query in that topic. The most frequent doubts are identified by using machine learning algorithms and that data is given to the teachers. The web app also includes the chat application where students can ask their doubt and teacher can give response in the form of voice note, text or picture or video format.

4. CONTEXT FLOW

Firstly, an administration or staff member has to register the department and add all the students and teachers in the registered department.

After that, every student has to add their photo, for face detection. When lecture starts, QR code is generated as well as face detection

is used to take the attendance to avoid the false entries. After the lecture, QR code closes and feedback form and query form are displayed toget data. If student scans QR code, feedback form and query form are displayed. If student does not scan the QR code, then it is marked as absent. The attendance data is given to the parents also as well as performance is also calculated and given to the teachers as well as students and parents.



5. CONCLUSION

A performance analysis system is capable of record the attendance, queries and feedbacks and give visualized sentimental analysis based on the data. It supports location detection and face recognition to avoid the false registrations in the attendance records. It saves a lot of lecture time and helpful to increase the student teacher interactions. It also includes opinion spam filtering, where the spam opinionsare detected and eliminated based on spammers' behavior features, keeping only authentic opinions. This project is np complete.

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