Student Feedback System using Flask

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Abstract: *The student feedback system is used to get student feedback about the staff through the web-based application. This Student Feedback System is used to determine whether students understand the teaching concepts or not, whether their performance is going well or poorly, and how they should direct their subsequent efforts. In this way, feedback is essential to scholars' learning and growth. Flask and MySQL technologies are used to develop this student feedback system. Flask is a web Framework used to develop the web application and MySQL is the Relational Database that is used to store the data and manipulate data. This student feedback system is very useful for schools and colleges to get staff feedback. Four characters are involved in this application. They are admin, hod, staff, and student, and then this application consists of the four important modules: the admin module, the hod module, the staff module, and the student module. The admin can add the HOD to each department, and the admin can view all the students' feedback. This process was managed by the Admin Module. The HOD can add the staff to their department, and the HOD can view only their department's student feedback. This process was managed by the HOD module. The Staff can add the students and only can view their feedback. They cannot see other staff's feedback. This process was managed by the Staff Module. Finally, Students can only provide feedback to their staff. This process was handled by the student module. These are all the four important modules and characteristics of this application.*

Keywords: Feedback system, Flask, MySQL, admin module, hod module, staff module, student module.

I. INTRODUCTION

Student feedback systems, also known as student evaluation of teaching (SET) or course evaluations, are used in education systems to gather feedback from students about their learning experiences. The interactions between instructor-student and student- student result in collaborative learning. Collaborative learning, also known as social learning, directly influences academic achievement, consistency and positive attitudes of the learners [1]. These systems typically involve asking students to complete a survey or questionnaire of a course or academic term, where they can provide feedback on various aspects of the course, such as the quality of instruction, the effectiveness of the course materials, and the overall learning experience. To improve the retrieval results, this paper also proposes a strategy of implicit relevant feedback based on click-through data analysis, which can obtain the relationship between the user query conditions and retrieval results [2]. The findings reveal that the perceptions of the students with respect to the use of clickers were associated to: sustain student attention during the lecture, the provision of con_rmatory and elaborative instructional feedback, the anonymity of the student's answers, asking questions appropriate for this teaching/learning method, students' motivation, students own suggestions for improvement, and the perceived existence of game-like elements [3]. The student feedback system is a very useful system in schools and colleges to get feedback from the students about the staff. The use of student feedback systems has several benefits in education. First and foremost, they provide valuable insights into the effectiveness of teaching methods and course materials, allowing educators to make improvements to better meet the needs of their students. Feedback systems like clickers or backchannels are used in the classroom to improve and speed up communication among students and teachers [4]. Additionally, feedback systems can help to identify areas of strength and weakness in a particular course or program, enabling educators to make data-driven decisions about how to allocate resources and prioritize improvements. Students' feedback is crucial for academic institutions in order to evaluate faculty performance. Handling the qualitative opinions of students efficiently

while automatic report generation is a challenging task [7]. The feedback system is one of the pillars of educational management. By using feedback the education management can change their drawbacks. Some students are hesitant to tell feedback to their staff. Teachers' work is increasingly augmented with intelligent tools that extend their pedagogical abilities. While these tools may have positive effects, they require use of students' personal data, and more research into student preferences regarding these tools is needed [8]. The student feedback system is very useful to that kind of students to convey their feedback without any hesitation. Furthermore, student feedback systems can also serve as a tool for accountability and transparency in education. By soliciting feedback from students, educators can demonstrate their commitment to continuous improvement and their willingness to listen to the voices of their students. In turn, this can help to foster trust and collaboration between students and educators, creating a more positive and productive learning environment for all. If we collect the feedback manually the students have to write their feedback on the paper and the staffs have to collect the feedback papers from the students and those feedback papers cannot be stored for a long time. Universities as education providers understand the importance of addressing student satisfaction. Research shows that overall student satisfaction heavily depends on student satisfaction with their course and satisfaction with the course has an influence on student retention [6]. It takes a lot of places to store which is very difficult to store and maintain. So we made a solution to this problem. Instead of collecting the feedback papers manually, we can develop an application to get feedback from the students and we can use it to collect the feedback from the students by using the application. It reduces the process to collect feedback from the students. Collecting the feedback forms using a student feedback system application makes it easier to store and maintain the feedback of the students. By synchronizing each student's tracking data with a Local Area Network (LAN) middleware, the AR teacher client can distinguish different students to in-situ superimpose the quiz progress and targeted-explainable teaching decision support over each corresponding student's head [5]. So we choose to develop a web-based application for the student feedback system. If we choose any other application like an Android application or desktop application instead of a web-based application the users have to install the application. But in the web-based application, the default browser is enough to access the application. Overall, the use of student feedback systems in education is an important practice that can help to drive continuous improvement and enhance the quality of the learning experience for students.
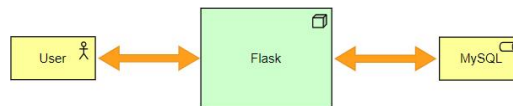

Figure 1: Architecture Diagram of the student feedback system

II. MOTIVATION & APPROACH

2.1 MOTIVATION

The development of student feedback systems for educational management is motivated by several factors, including the desire to improve the quality of teaching and learning, to promote accountability and transparency, and to better meet the needs of students. It can be interpreted from these papers that the problem of stabilizing an automotive active suspension system can be addressed differently, and that each approach might impose different feedback requirements [9]. One of the primary motivations for developing student feedback systems is to improve the quality of teaching and learning. By gathering feedback from students, educators can gain valuable insights into what is working well and what needs to be improved in their courses and programs. This information can then be used to make targeted improvements to teaching methods, course materials, and other aspects of the learning environment, to enhance the overall quality of the learning experience. Another motivation for developing student feedback systems is to promote accountability and transparency in education. By soliciting feedback from students, educators can demonstrate their commitment to continuous improvement and their willingness to listen to the voices of their students. This can help to build trust and collaboration between students and educators, which can ultimately lead to a more positive and productive learning environment for all. Finally, the development of student feedback systems is motivated by the desire to better meet the needs of students. By gathering feedback from students, educators can gain a deeper understanding of their student's learning preferences, strengths, and challenges. This information can then be used to tailor teaching methods, course

materials, and other aspects of the learning environment to better meet the needs of individual students, resulting in a more personalized and effective learning experience. Overall, the development of student feedback systems for educational management is motivated by a desire to improve the quality of teaching and learning, promote accountability and transparency, and better meet the needs of students. In the education domain, student feedback data is crucial to uncover the merits and demerits of existing services provided to students. AI can assist in identifying the areas of improvement in educational infrastructure, learning management systems, teaching practices, and study environments [10].

2.2 APPROACH

The approach for the student feedback system is to develop a web-based application. The student feedback system was developed using the Flask framework and the MySQL database. Flask is a lightweight and flexible web application framework for Python. It is designed to be easy to use and provides developers with the tools they need to quickly build and deploy web applications. The framework is designed to be easy to learn and use, with a minimalistic approach that emphasizes simplicity and flexibility over complexity and rigid conventions. Flask provides developers with a basic set of tools for building web applications but also allows them to customize and extend the framework as needed to meet the specific needs of their projects. MySQL is an open-source relational database management system (RDBMS) that is widely used for managing and storing data in web applications. MySQL is known for its scalability, performance, and ease of use. It is used by many popular websites and applications, including Facebook, Twitter, and YouTube. In this application, HTML and CSS are used to develop the front end of the application, and MySQL and Python are used for the back end. HTML and CSS are two core technologies used for building websites and web applications. HTML (Hypertext Markup Language) is a markup language used to create the structure and content of web pages. HTML allows developers to define the various elements that make up a web page, such as headings, paragraphs, images, links, and forms. These elements are defined using HTML tags, which specify how content should be displayed in a web browser. CSS (Cascading Style Sheets) is a stylesheet language used to describe the presentation of HTML documents. CSS allows developers to control the visual appearance of web pages, including the layout, colors, fonts, and other design elements. CSS rules are applied to HTML elements using selectors, which target specific elements based on their tag name, class, or ID. The student feedback system application was Choosing the web-based application instead of other applications like an Android application or a desktop application. Because if the user wants to use the other application, they need to install it on their device. But in a web-based application, the default browser is enough to access the application, and then the user needs an internet connection to access the application; without the internet connection, the user cannot be able to use the web-based application.

III. RELATED WORK

In related work, the section provides an overview of the existing literature, research, and projects related to the topic of the paper. This section should provide a comprehensive and critical review of the most relevant and recent work in thefield, highlighting the key similarities and differences with the proposed approach of the paper.

With headways in instructive advances, e-learning stages have developed to give learning conditions to the special and under-favored populace so they can learn at their own speed. The outcome of these frameworks depends on connecting with experience and convenient and exact criticism to the understudies on their exhibition. In any case, these frameworks experience the ill effects of high understudy dropouts, frequently due to an absence of personalization in understudy collaborations. While understudies show the different cooperative ways of behaving, i.e., a few understudies are social, and like conversations, while others are self-situated and don't partake in any cooperative movement, the input and collaborations with understudies are by and large not tweaked in view of their kind of cooperative way of behaving.

Artificial Insight (man-made intelligence) is a quickly developing area of study that extends its presence to numerous business and examination areas. AI, profound learning, and normal language handling (NLP) are subsets of artificial intelligence to handle various areas of information handling and displaying. This survey article presents an outline of computer-based intelligence's effect on schooling framing with current open doors. In the training area, understudy input information is essential to revealing the benefits and faults of existing administrations given to understudies.

Computer-based intelligence can help with recognizing the areas of progress in the instructive foundation, learning the executive's frameworks, showing practices, and studying climate. NLP procedures assume an essential part in examining understudy criticism in printed design. This examination centers around existing NLP approaches and applications that could be adjusted to instructive space applications like opinion explanations, element comments, text rundown, and subject displaying.

With the quick development of systems administration, digital actual social frameworks (CPSSs) give huge measures of data. Focused on the immense and complex information given by systems administration, getting significant data to meet exact inquiry needs while catching client goals has turned into a significant test, particularly on customized sites. In this paper, we utilize the ongoing area and important criticism innovation to plan and carry out a proficient, configurable, and canny recovery structure for customized sites in CPSSs. To further develop the recovery results, this paper likewise proposes a technique of verifiable applicable input in light of navigate information examination, which can get the connection between The client asked about conditions and recovery results.

The paper presents an observational review led with regard to a high-level power hardware configuration course in a specialized college. In chosen points of the talks developmental evaluations were presented and upheld by the utilization of clickers. The reason for the article is to look at understudies' Views of the adequacy of clicker use. Individual, semi-organized understudy interviews were led which were investigated utilizing topical substance examination. The findings uncover that the impression of the understudies regarding the utilization of clickers was related to supporting understudy consideration during the talk, the arrangement of corroborative and elaborative educational input, the obscurity of the understudies' responses, inquiring questions fitting for this instructing/learning technique, understudies' inspiration, understudies own ideas for improvement, and the apparent presence of game-like components.

The utilization of increased reality (AR) to help the educational experience has been widely investigated yet, and its utilization to help the showing practice has quite recently begun to be investigated. In this paper, we present a correspondence framework that utilizes a couple of Google Glass to furnish the instructor with a steady and a private stream of data on the understudies' ongoing information. The proposed framework permits the data sent by the understudies through their mobile devices to cover the instructors' live vision of the class. Analyzed to other input frameworks like clickers or backchannel frameworks, this AR model keeps away from instructors redirecting their look and intruding on the class to get to the understudies' input. This supports the steady checking of potential cognizance issues that could somehow be ignored.

IV. METHODOLOGY

The methodology section typically describes the methods, techniques, and procedures used in the research or project presented in the paper. This section should provide enough detail to enable readers to understand how the research was conducted and how the results were obtained. The student feedback system is a web- based application. The student feedback system was developed by the Python Flask Framework and the MySQL Database. HTML and CSS were used to develop the front end of the student feedback system and then Python and MySQL are used to develop the back end of the student feedback system.

Flask is a lightweight and flexible web application framework for Python. It is designed to be easy to use and to provide developers with the tools they need to quickly build and deploy web applications. The framework is designed to be easy to learn and use, with a minimalistic approach that emphasizes simplicity and flexibility over complexity and rigid conventions. Flask provides developers with a basic set of tools for building web applications but also allows them to customize and extend the framework as needed to meet the specific needs of their projects. Flask is also highly modular, with a range of extensions and plugins available that can be easily integrated into projects. These extensions cover a wide range of functionality, from authentication and database management to RESTful API development and caching. Another key feature of Flask is its emphasis on testing and debugging. The framework includes built-in support for unit testing and debugging, making it easy for developers to write and run tests and identify and fix bugs in their code. Overall, Flask is a popular choice for developers who value simplicity, flexibility, and ease of use in their web application development projects. Its lightweight and modular architecture, combined with its built-in support for testing and debugging, make it a popular choice for a wide range of web development tasks.

MySQL is an open-source relational database management system (RDBMS) that is widely used for managing and storing data in web applications. MySQL is known for its scalability, performance, and ease of use. It is used by many popular websites and applications, including Facebook, Twitter, and YouTube. Mysql is support multiple storage engines, including InnoDB, MyISAM, and Memory. This allows developers to choose the storage engine that best suits their specific needs. High performance, with support for indexing, caching, and other optimization techniques to improve query performance. Support for ACID (Atomicity, Consistency, Isolation, Durability) transactions, which ensures that database transactions are reliable and consistent, Compatibility with many programming languages, including PHP, Python, Java, and C++. MySQL can be installed and used on a wide range of platforms, including Windows, Linux, etc., and it can be accessed using a variety of interfaces, including a command-line interface (CLI), graphical user interface (GUI) tools, and APIs for programming languages. Overall, MySQL is a powerful and versatile database management system that is well-suited for web application development, with many features to support performance, scalability, and reliability.

HTML (Hypertext Markup Language) is a markup language used to create the structure and content of web pages. HTML allows developers to define the various elements that make up a web page, such as headings, paragraphs, images, links, and forms. These elements are defined using HTML tags, which specify how content should be displayed in a web browser. CSS allows developers to control the visual appearance of web pages, including the layout, colors, fonts, and other design elements. CSS rules are applied to HTML elements using selectors, which target specific elements based on their tag name, class, or ID. HTML provides the structure and content of a page, while CSS provides the visual style and layout. By separating the content from the presentation, developers can create more flexible and maintainable web pages and applications. HTML and CSS are both essential skills for web developers. They are relatively easy to learn, and there are many resources available online for getting started with these technologies. In addition, there are many frameworks and libraries available that build on top of HTML and CSS, such as Bootstrap and Foundation, which can help developers create more advanced and responsive web designs with less effort.

This student feedback system consists of four modules. They are the Admin module, HOD module, Staff module, and Student module. All the modules are developed by Flask and MySQL technologies. The first module is the Admin module. The purpose of the Admin module is to maintain the admin role in the application. The admin can add the HOD to each department, and then the admin can see all of the reviews from all of the department students. These processes are handled by the admin. The second module is the HOD module. The HOD module handles the HOD role in the application. The HOD can add the staff for their department, and then the HOD can see their department's student reviews. The HOD cannot be able to see the other department's student reviews. These processes are handled by the HOD module. The third module is the Staff module. The Staff module is used to maintain the Staff role in the application. The final module is the Student module. The student module is used to maintain the student's role in the application. The students can only send feedback about their staff. The students cannot see the other student's feedback. The students cannot send feedback to the other staff. They can send feedback only about their staff. These processes are maintained by the student module.

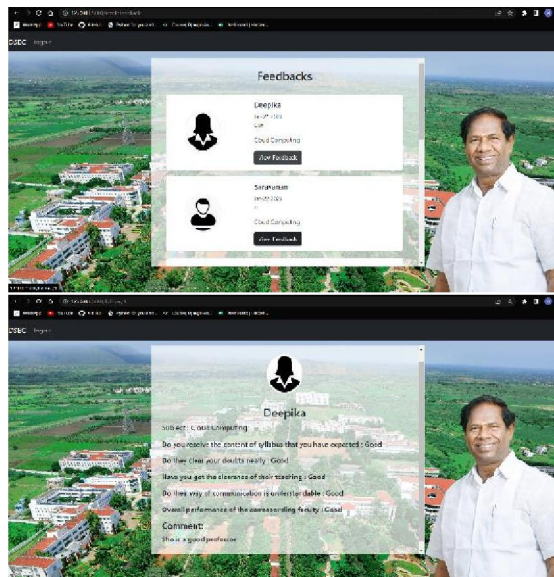**Figure 2 (a) : Admin Login Page   Figure 2 (b): Admin Home Page**

Figure 2 (c) : Admin Feedback Page Figure 3 (d) : Admin Feedback Review Page

V. EXPERIMENT

The student feedback system was experimented with by third-year computer science and engineering students. Their average age is 21. Forty students are involved in this experiment. We just separate them into four teams. Each team consists of ten members. The first team controls the admin role; the second team controls the hod role; the third team controls the staff role; and finally, the last team controls the student role.

EXPERIMENT I (ADDING ROLES)

The first experiment is the add the rolls in the student feedback system application. The First process is the admin has to add the HOD to each department. This process was done by the first team. After adding the HOD the second team has to be checked. Whether the HOD roles are added or not. If the HOD role was added they have to move to the next step otherwise they have to inform the first team about the problem. After adding the HOD role in the student feedback system application the second team has to add the staff for their department. After adding the staff role the third team has to check whether the staff roles are added properly or not. If there is any problem they have to inform the second team about the problem. If the staff roles are added successfully they can move to the next process. The next process is, for the staff to add the students to their classes. After the third team completes this process the fourth team can start their process. The fourth team first has to check whether the students are added properly or not. If there is any problem they have to inform the third team about the problem. If the students are added properly they can move to the next process which is now they want to check their staff are shown in the student's home page.

EXPERIMENT II (FEEDBACK CHECKING)

After completing the adding roles phase, the teams are ready to do the second phase of the experiment. In the second phase of the experiment, they will check the feedback of the students. In the second phase of the experiment, the process starts from the fourth team to the first team in descending order. The process starts with the fourth team, which has to provide feedback to its staff. After sending the feedback, the third team starts their work. They have to check whether they get feedback from the students or not. If they do not get feedback from the students, they have to inform the fourth team about the problem. If they get the feedback, they have to check whether it was given by the correct person or not. If the feedback was given by the correct person, they can move on to the next process. After completing the third team their work the second team can start their process. The second team handles the HOD module, and they want to check all of the feedback from their department shown on the HOD feedback page. On the HOD feedback page, only their own department's student feedback has to be shown. If there is any problem, they want to inform the third

team otherwise, they can move on to the next process. After the second team completes its process, the first team can start their work. They have to check whether all of the department's student's feedback is shown on the admin's feedback page. If there is any problem they have to inform it.

These are all the processes of the experiment to check the student feedback system's application. This process checks all of the processes in the student feedback system application.

VI. RESULT

All the experiment tasks are performed successfully. All the modules work properly in this application. The role-adding process feedback providing process all are performed and verified successfully. The models are working properly in this student feedback system application. Staff, HOD, and Admin get the feedback of the students through the student feedback system application successfully.

VII. DISCUSSION

After completing the experiment by the students we just discussed with those students about the student feedback system application. They provide their feedback like what are they like in this student feedback system application and what are improvements needs to do like. One of the important pieces of feedback we get from the students is to include the feedback response in this application

VIII. CONCLUSION

A web-based student feedback system application can greatly benefit both students and educators by providing a platform for efficient and effective communication. This type of system allows students to provide feedback on various aspects of their learning experience, such as the quality of teaching, course materials, and overall program satisfaction. In turn, educators can use this feedback to improve their teaching methods and make necessary adjustments to the curriculum. A well-designed and user-friendly student feedback system can help create a more productive learning environment, increase student engagement, and ultimately lead to better academic outcomes.

IX. FUTURE SCOPE

This student feedback system application only supports text format feedback. In the future, it will update to support audio format feedback and also video format feedback. In the future, it will update to send a response for the feedback to the students from the staff, HOD, and then Admin. These are all the future scope of the student feedback system application.

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219

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