STUDENT GRIEVANCE SYSTEM

A MINI PROJECT REPORT

Submitted by

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Under the guidance of

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in partial fulfillment of the degree of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING (AI & ML)

VIGNAN INSTITUTE OF TECHNOLOGY AND SCIENCE
Near Ramoji Film City, Deshmukhi Village, Pochampally Mandal, Yadadri Bhuvanagiri Dist.
(Approved by AICTE, New Delhi, Affiliated to JNTUH, Hyderabad)
AN AUTONOMOUS INSTITUTION

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CERTIFICATE

This is to certify that the project work titled "**Student Grievance System**" submitted by **G.Sai Sanjay (20891A6613), A.Vivek Vardhan (20891A6601), P.Susmitha Ramana (20891A6637), S.Sai Pavan (20891A6660)** in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering (AI&ML) to the Vignan Institute of Technology And Science, Deshmukhi is a record of bonafide work carried out by them under our guidance and supervision.

The results embodied in this project report have not been submitted in any university for the award of any degree, and the results are achieved satisfactorily.

Mr. R. Praveen Kumar
Project Guide

Dr. J. R. V. Jeny
Head of the Department

External Examiner

DECLARATION

We hereby declare that the project entitled **Student Grievance System** is bonafide work duly completed by us. It does not contain any part of the project submitted by any other candidate to this or any other institute of the university. All such materials that have been obtained from other sources have been duly acknowledged.

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ABSTRACT

The ”Student Grievance System” represents a transformative leap in addressing and resolving student concerns within a college environment. This dynamic mobile application has been meticulously crafted to simplify and elevate the grievance resolution process, offering students a user-friendly platform to voice their concerns. By circumventing the traditional bureaucracy, where complaints are funneled through college officials, this application empowers students to directly lodge and track their grievances, ensuring swift and efficient resolution.

Unlike the conventional method that often entails prolonged delays and may not always yield satisfactory outcomes, the Student Grievance System leverages the capabilities of Android technology to streamline the entire process. This not only expedites complaint resolution but also promotes transparency and accountability within the institution. The application serves as a direct channel for students to communicate their issues, fostering a responsive and student-centric environment.

Beyond its immediacy and user-friendly interface, the application significantly augments the college's ability to manage student concerns effectively. Through advanced data collection and analysis features, the college can gain valuable insights into recurring issues, enabling proactive measures to enhance the overall educational experience. The incorporation of this innovative technology marks a paradigm shift, reinforcing the institution's commitment to student welfare, satisfaction and also marks a progressive step towards a more harmonious and enriching educational environment.

Keywords: Android, Student Grievance, Application, Complaint, Innovation, Transparency.

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List of Abbreviations

CSS	Cascading Style Sheets
GB	Giga Byte
GPA	Grade Point Average
HTML	Hyper Text Markup Language
IDE	Integrated Development Environment
LSTM	Long Short Term Memory
MySQL	My Structured Query Language
OMG	Object Management Group
OS	Operating System
PHP	Hypertext Preprocessor
RAM	Random Access Memory
SDK	Software Development Kit
SRS	Software Requirements Specification
UML	Unified Model Language
XML	eXtensible Markup Language

Chapter 1

INTRODUCTION

In the ever-evolving landscape of educational institutions, fostering a conducive and supportive learning environment is paramount. Recognizing the need for an efficient and transparent mechanism to address student concerns, we introduce the ”Student Grievance System”. This application is designed to revolutionize the way grievances are reported, tracked, and resolved within institutions, promoting open communication and timely redressal.

The Student Grievance System mobile app is a strategic response to the evolving dynamics of student-administration interactions. Traditional paper-based systems and manual processes have proven to be cumbersome and less responsive to the diverse concerns of our student body. In light of this, the mobile app emerges as a comprehensive solution, harnessing the power of technology to enhance accessibility, transparency, and efficiency in handling student grievances.

At its core, the Student Grievance System mobile application seeks to empower students by providing them with a user-friendly platform to voice their concerns. This project aims to bridge the communication gap between students and the administration, ensuring that every grievance is acknowledged, tracked, and resolved in a systematic and timely manner. By introducing this mobile app, we aspire to create a culture of responsiveness, accountability, and continuous improvement within the educational institution.

In the following documentation report, we delve into the intricacies of the Student Grievance System mobile application. From its conceptualization to the architecture, user interface, and anticipated impact, this report aims to pro-

vide a comprehensive understanding of the project. As we navigate through the various sections, it is our intention to showcase not only the functionality and features of the app but also the rationale behind its development and the transformative role it plays in enriching the student experience.

1.1 Scope and Objectives

The scope of a Student Grievance System mobile application is comprehensive, aiming to streamline the process of submitting and tracking grievances for students within an educational institution. This application would provide a user-friendly interface for students to submit complaints. User authentication and authorization features would be implemented to ensure secure access, distinguishing between students, faculty, and staff with varying levels of permissions and would also keep users informed about the status of their complaints.

The application would integrate with existing grievance management systems, maintaining consistency in data and facilitating a seamless resolution process, enabling the institution to identify patterns and areas for improvement. Additionally, the app may include educational resources, feedback mechanisms, and real-time communication channels to enhance user engagement and support. Ensuring compliance with data protection regulations and providing a secure platform for sensitive information would be paramount in maintaining user trust. In essence, the Student Grievance System mobile application seeks to enhance transparency, efficiency, and communication in addressing and resolving student concerns, contributing to an improved overall educational experience.

1.2 Purpose

The purpose of the ”Student Grievance System” app is to provide an efficient and transparent platform for students to voice their concerns, complaints, or grievances within an educational institution. The app serves as a streamlined mechanism for submitting, tracking, and resolving grievances, aiming to enhance communication between students and the administration. By offering a user-friendly interface, the app empowers students to report issues related

to academics, administration, or any other aspects of their educational experience. The purpose is to facilitate a timely and fair resolution process, allowing students to monitor the progress of their complaints and receive updates. Ultimately, the Student Grievance System mobile app is to foster a positive and supportive educational environment by addressing student concerns, promoting transparency, and contributing to continuous improvement.

This research work addressed Students' grievance management system, It was affirmed in this study that organizational complaints are inevitable. A grievance management system like Institute use to receive various complaints from students. Complaints lodged range from Academic, Administrative, social and other issues relating to the student. This platform allows for complaints to be lodged remotely by students with issues relating to their examination result, computation of their Grade Point Average (GPA) and hall of residence complaints thereby enhancing the response time for the appropriate unit to resolve the addressed complaints.

Chapter 2

LITERATURE SURVEY

2.1 What is Literature Survey?

A literature survey, often referred to as a literature review, is a comprehensive and systematic examination of the existing body of scholarly works, research articles, books, and other relevant sources on a particular subject or research question. It serves as a foundational component of academic and research endeavors, offering a critical analysis and synthesis of the knowledge available in a specific field. The primary objectives of a literature survey are to summarize the current state of understanding in the chosen area, identify gaps or inconsistencies in existing research, and provide a context for the development of new insights or investigations.

The process of conducting a literature survey involves a careful review and evaluation of a range of sources. Researchers aim to organize this diverse array of materials into a coherent narrative that highlights key themes, debates, and trends within the field. The survey may be organized chronologically to showcase the historical progression of ideas or thematically to group studies according to shared concepts or methodologies. Throughout the review, a critical lens is applied to assess the quality of research methodologies, the reliability of findings, and the overall contributions of each piece to the body of knowledge.

A well-executed literature survey not only demonstrates the researcher's depth of understanding but also serves as the basis for the formulation of research questions and hypotheses. It provides the intellectual context for a new study, helping researchers position their work within the ongoing scholarly conver-

sation. Additionally, literature surveys are valuable tools for identifying gaps in knowledge, suggesting areas for further exploration, and informing the development of theoretical frameworks. In essence, a literature survey is an indispensable step in the research process, guiding investigators in navigating the existing landscape of knowledge and contributing meaningfully to the advancement of their respective fields.

2.2 Related Work

[1] K. Aravindhan, K. Periyakaruppan, K. Aswini, S. Vaishnavi and L. Yamini, "Web Portal for Effective Student Grievance Support System," 2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India, 2020.

This paper aims to develop and implement a web-based system that allows students to submit and manage their complaints online, and provides a platform for staff members to handle and resolve these issues in a timely and fair manner. Their framework and methodology of the system, which consists of two parts: one for students and another for administrators. The system uses Hyper Text Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript, Hypertext Preprocessor (PHP), and My Structured Query Language (MySQL) as the main technologies for frontend and backend development. Here a separate committee will be maintaining the website where they will monitor and approve to send the complaints to the respected departments.

[2] S. shah, S. Jha and P. Sonawane, "Smart Student Grievance Redressal System with Foul Language Detection," 2022 8th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India, 2022.

This research study focuses on tracking student data and complaints to monitor student performance. It proposes a website built using Django, HTML, Python, and MongoDB, where students can submit grievances. It also addresses concerns related to language quality and hate speech by employing deep learning and machine learning techniques. It trained models on 11,325 tweets and evaluated them using metrics like F1 score, recall, and precision. The Long

Short Term Memory (LSTM) model outperformed others with metrics values of 0.884, 0.84, and 0.86.

[3] S. Kuhan and L. K. J. Grace, "Design and Implementation of Students Grievance and Database," 2023 2nd International Conference on Applied Artificial Intelligence and Computing (ICAAIC), Salem, India, 2023

It proposes a website built using JavaScript, HTML, Python, and MySQL, to submit grievances. The system notifies the relevant department and allows students to track their complaint's status.

[4] Patel, Viral , Kapadia, Daanyaal , Ghevariya, Deval and Pappu, Shibu-raj. (2020). All India Grievance Redressal App. Journal of Information Technology and Digital World.

This paper about "All India Grievance Redressal Application" is a state-of-the-art digital platform developed to address the diverse needs and concerns of citizens across India. This mobile application serves as a unified and accessible channel for individuals to report grievances, seek resolutions, and engage with government authorities at various levels. This Application will give easy Access for people to put their complaints to the Government. Technologies used are JavaScript, MongoDB .

[5] Venkatesan, Satheeswaran , R. Arjun , A. Nidhin and C. Pranav. (2020). State-Level Students Grievance Support System. International Journal of Scientific Research in Computer Science, Engineering and Information Technology.

This paper gives an optimized solution to address delays in student services, improving the student-university relationship. It introduces an e-complaint web-based system to replace the manual processing prevalent in committees and college administration. This State-level support system simplifies complaint submission and organization. Students can easily categorize and post complaints, while administrators can efficiently sort them using keywords.

2.3 Existing System

The current scenario in many colleges is characterized by the presence of applications that are still in the development phase and have not been released for usage. Despite the advancement in technology, a significant number of institutions continue to rely on traditional paper-based methods for handling student complaints. The existing manual system involves students physically visiting the relevant department to register their complaints in designated complaint registers, which are typically monitored by the respective department heads. This method is not only outdated but also prone to various inefficiencies[6].

One major drawback of the existing manual system is its lack of accessibility to students 24/7. Since the system relies on physical visits during working hours, students can only submit complaints when they are physically present at the related department. This limitation in accessibility can result in delays in reporting important issues, as students might not always be available during regular working hours[7]. The inability to address concerns promptly can have a negative impact on the overall student experience and the resolution of critical issues.

The manual process of registering and transferring complaints further compounds the inefficiencies of the existing system. Moving a grievance from a lower level to a critical level requires a manual and often time-consuming process. This may involve physical paperwork, which is susceptible to loss or mishandling, introducing delays and errors in the grievance resolution process. The inefficiency of the manual process not only affects the speed of complaint resolution but also contributes to a cumbersome administrative burden for the staff involved in managing these processes.

Additionally, the paper-based [8] system lacks transparency, as students have no means to track the status of their complaints. Without a clear mechanism for monitoring progress, there is a risk of perceived neglect or inaction on the part of the institution. This lack of transparency can erode trust and confidence in the complaint resolution process, as students may feel that their concerns are not being adequately addressed or are simply being overlooked. The absence of a feedback mechanism also hinders the institution's ability to identify systemic

issues and make informed improvements.

In summary, the existing manual system for handling student complaints in many colleges suffers from limited accessibility, time-consuming and inefficient processes, and a lack of transparency. Transitioning to a technologically advanced Student Grievance System, as proposed earlier, addresses these challenges by providing a streamlined and automated process that operates 24/7, promotes transparency, and enhances the overall efficiency of the complaint resolution process.

2.4 Proposed System

The proposed Student Grievance System serves as a comprehensive solution to the shortcomings observed in existing systems, aiming to streamline and enhance the entire process of handling complaints within an educational institution. One of its key features is the incorporation of various attributes, including department, year, subject, and the nature of the problem. This meticulous categorization ensures that the system not only captures the essence of the grievance but also facilitates a targeted and efficient resolution process.

Automation is a pivotal aspect of this system, contributing significantly to its efficiency. By automatically escalating grievances from lower to critical levels, the system ensures that the severity of each issue is promptly recognized and addressed. This automated process is crucial in maintaining a swift resolution pace, which is essential for addressing student concerns in a timely manner.

A standout feature of the Student Grievance System is the transparency it brings to the complaint resolution process. Students have the ability to track the progress of their grievances once they are registered in the system. This transparency not only instills confidence in the complainants but also promotes accountability within the institution. By providing a clear and organized mechanism for submitting and tracking complaints, the system establishes a framework that fosters a culture of responsibility and responsiveness.

The application is designed to cater to the diverse needs of students, faculty, and staff, offering a user-friendly interface for submitting grievances and feedback. This user-centric approach not only enhances accessibility but also

simplifies the communication process, making it easier for all stakeholders to engage with the system.

Moreover, the system operates around the clock, ensuring 24/7 accessibility for students. This constant availability is a significant advantage, as it accommodates the diverse schedules of students and allows them to engage with the system at their convenience.

The incorporation of a feedback loop within the system is a strategic move that goes beyond merely resolving grievances. By actively seeking and incorporating feedback from all stakeholders, the system becomes a dynamic tool for ongoing improvements. This feedback loop becomes a catalyst for enhancing the overall quality of education and services provided by the institution. The iterative nature of this process ensures that the institution is responsive to evolving needs and concerns, actively contributing to the continuous improvement of the educational experience.

In essence, the Student Grievance System emerges not only as a mechanism for addressing specific concerns but also as a transformative tool that actively engages all stakeholders in the journey towards improving and refining the educational environment.

Chapter 3

SYSTEM DESIGN

3.1 Software Requirements

Operating System (OS) - Windows 7 and above

The Student Grievance System should be compatible with Windows operating systems starting from Windows 7 and above. This ensures that the application can run on a variety of Windows-based computers.

Android SDK

Android Software Development Kit (SDK) is required for developing Android applications. Since the system is likely to have a mobile component, the Android SDK is necessary to build and test the Android application.

Android Studio

Android Studio is the official Integrated Development Environment (IDE) for Android app development. It provides a comprehensive set of tools for building Android applications. Developers will use Android Studio to design, code, and test the grievance system's mobile application.

Firebase

Firebase is a mobile and web application development platform that provides a variety of services, including real-time databases, authentication, hosting, and more. It's often used to build scalable and feature-rich applications. In the context of a Student Grievance System, Firebase could be used for real-time data synchronization, user authentication, and data storage.

Java/XML

Java is a widely used programming language for Android app development. eXtensible Markup Language (XML) is commonly used for designing user in-

terfaces in Android applications. Together, Java and XML are crucial for developing the functionality and user interface of the grievance system.

3.2 Hardware Requirements

Processor - i3

The system should be compatible with Intel i3 processors or equivalent. This specification ensures that the application can run on computers with a reasonable level of processing power. Since the grievance system is not likely to be highly resource-intensive, an i3 processor should be sufficient.

Hard Disk -Minimum of 5 GB

The application and associated files are expected to occupy up to 5 Giga Byte (GB) of disk space. This requirement considers the storage needs for the installed software, databases, and any additional resources related to the Student Grievance System.

Memory -Minimum of 1GB RAM

The system should have a minimum of 1GB Random Access Memory (RAM). Adequate RAM is essential for smooth operation, especially when dealing with data processing and application execution. While 1GB is specified as the minimum, having more RAM can enhance performance, particularly if the system is running other applications concurrently.

Additional Considerations

Since the system involves data synchronization (potentially using Firebase), a reliable internet connection is essential, both during development and for end-users.Consider incorporating security measures, especially when dealing with sensitive student information. This may involve secure authentication methods, encrypted communication, and data protection practices.

3.3 UML Diagrams

Unified Model Language (UML) is a modeling language. The main purpose of UML is to visualize the way a system has been designed. It is a visual language to sketch the behavior and structure of the system. This was adopted by Object Management Group (OMG) as a standard in 1997.

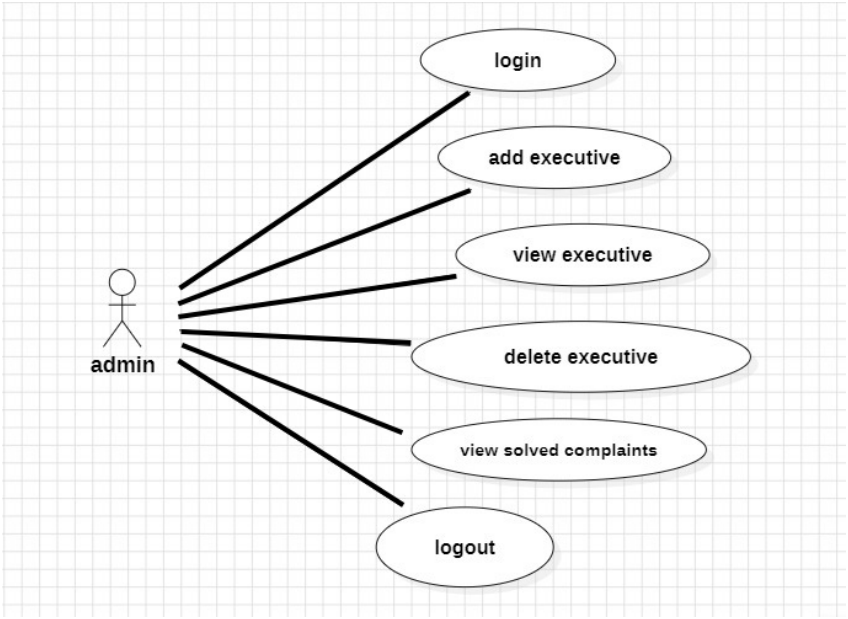

Figure 3.1: Admin Use Case Diagram

3.3.1 Use Case Diagram

The purpose of use case diagram is to capture the dynamic aspect of a system. This is used to gather the requirements of a system including internal and external influences. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

The use case diagram (Figure 3.1) serves as a visual representation of the interactions between the primary actor, the admin, and the student grievance system mobile application. Specifically, the admin module within the application is designed to effectively manage student grievances. By logging in with valid credentials, the admin gains access to a range of features crucial for overseeing the grievance resolution process. The diagram's lines connecting the admin to each use case illustrate the interactions and flow of actions within the system, offering a clear overview of the admin's role and responsibilities in managing the grievance system.

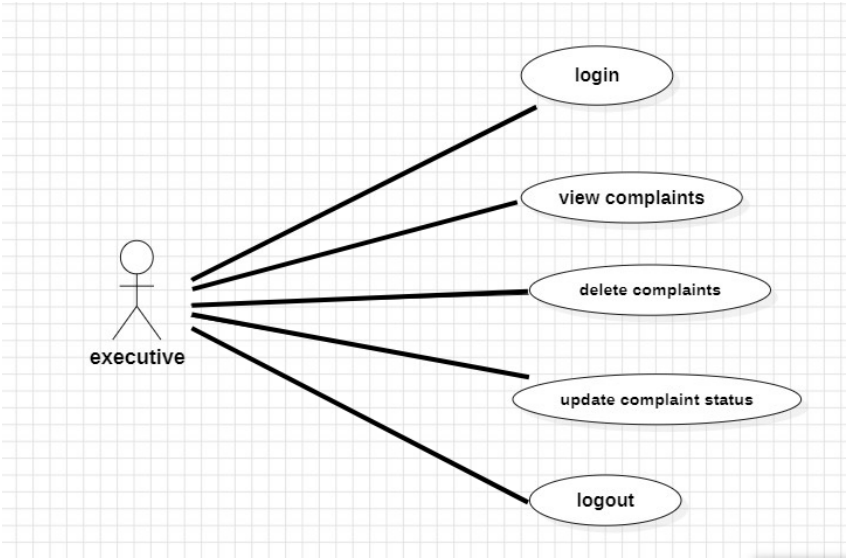

Figure 3.2: Executive Use Case Diagram

Within the student grievance system, the admin module is pivotal in ensuring the system's smooth operation. The admin is equipped with features that facilitate efficient management of the grievance resolution process. Notably, the admin can add new executives, view the list of existing executives, and remove inactive executives. This functionality ensures a well-equipped team of qualified executives to handle the workload and address complaints promptly.

Moreover, the admin has the capability to view a comprehensive list of resolved complaints, enabling them to track the progress of the grievance resolution process and identify areas for potential improvement. This information is valuable for generating reports on the grievance resolution process, empowering the admin to make informed decisions about enhancing the system. To access these features, the admin must log in, and for security purposes, can log out of the system at any time. In essence, the admin module is a critical component, providing the necessary tools for effective oversight and management of the student grievance system.

This use case image (Figure 3.2) shows how an executive can use the mobile application to view and manage student grievances. The executive can be in any location, as long as they have an internet connection. This makes it easy for executives to stay informed about student grievances and to take action to resolve them. The use case image of an executive in the mobile application for a student grievance system depicts a straightforward and efficient process for

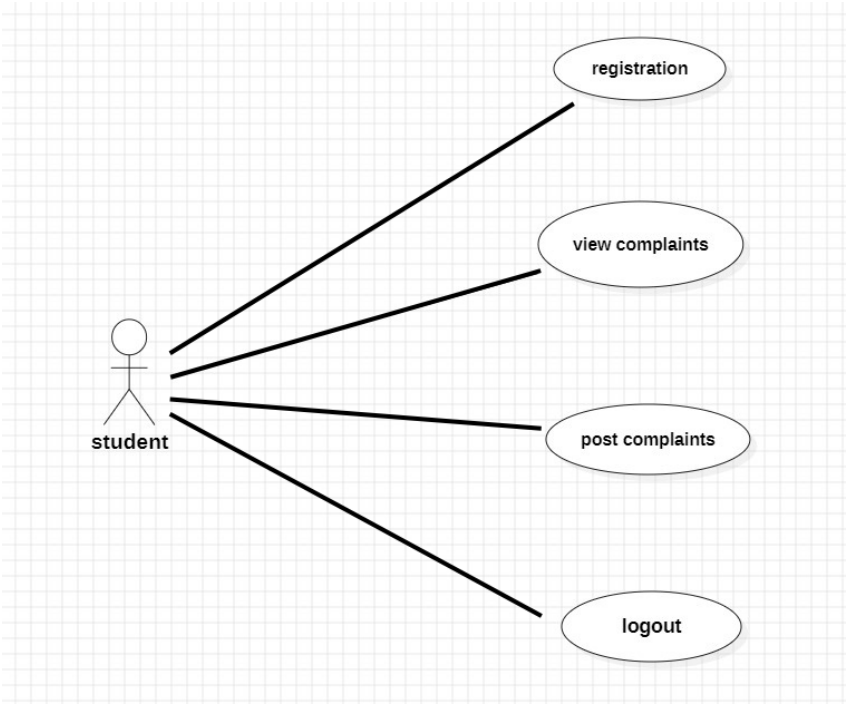

Figure 3.3: Student Use Case Diagram

managing student grievances.

The executive can conveniently access the mobile application to review the list of complaints and select specific complaints for further investigation. They have the authority to update the complaint status, marking it as ”In Progress,” ”Resolved,” or ”Closed.” Additionally, they can delete complaints that are no longer pertinent. This functionality facilitates maintaining an organized and streamlined grievance system, preventing students from revisiting resolved issues. The use case image effectively showcases a well-designed and practical system for addressing student grievances.

The use case image of a student (Figure 3.3) in the mobile application for a student grievance system depicts a simple and user-friendly process for raising and managing grievances. The student can readily access the mobile application to register their grievance, view the status of their complaint, and even update the complaint details. After submitting the complaint, the student can track the progress of their grievance and receive notifications about any updates. This enhances transparency and keeps the student informed throughout the grievance resolution process.

The image clearly illustrates the user-centric approach of the system, prioritizing student convenience and efficient grievance resolution. The simple interface and straightforward steps make it easy for students to navigate the application and engage with the grievance process. In addition to submitting grievances, students can also view the status of their previously raised complaints and update the complaint details if necessary. This functionality enables students to stay updated on the progress of their grievances and ensure that their concerns are addressed promptly.

Overall, the use case image effectively conveys the student-centric design and user-friendly features of the mobile application for managing student grievances. The simple interface, intuitive navigation, and comprehensive grievance management capabilities demonstrate the system's effectiveness in addressing student concerns and fostering a supportive learning environment.

3.3.2 Sequence Diagram

A sequence diagram (Figure 3.4) details the interaction between objects in a sequential order i.e. the order in which these interactions take place. These diagrams sometimes known as event diagrams or event scenarios. This helps in understanding how the objects and component interacts to execute the process. This has two dimensions which represents time (Vertical) and different objects (Horizontal).

The admin sequence diagram (Figure 3.4) for the mobile application of a student grievance system depicts a clear and concise process for managing executives within the grievance system. The admin, acting as the system's administrator, initiates the process by logging in to the mobile application.

To add an executive, the admin navigates to the "Add Executive" option and enters the relevant details, including the executive's name, email address, and phone number. Upon submitting this information, the system creates a new executive account and sends an email to the executive with their login credentials to access the application.

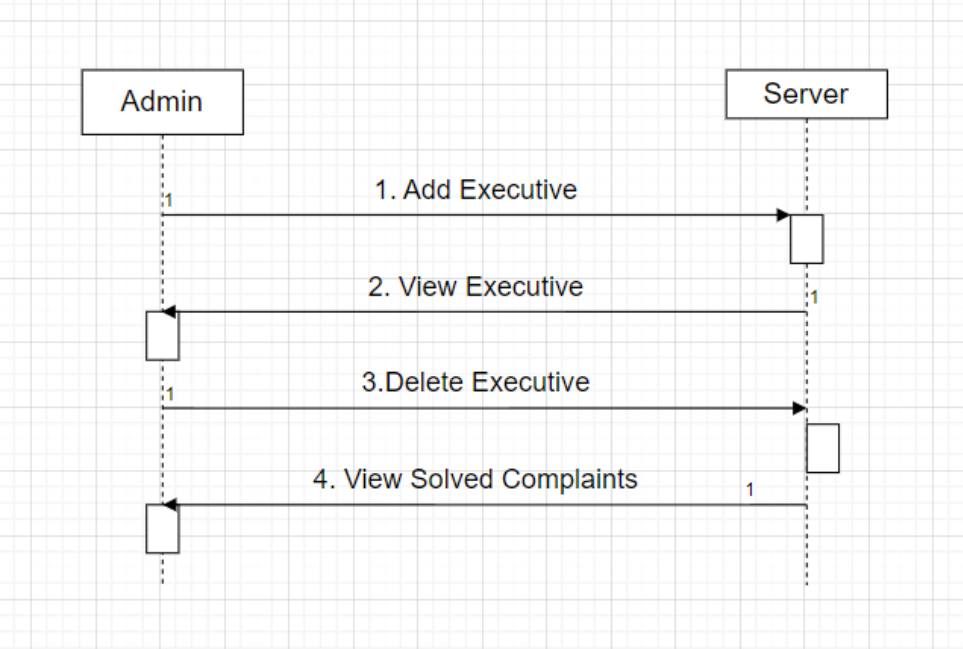

Figure 3.4: Admin Sequence Diagram

To view the list of executives, the admin simply selects the ”View Executives” option. The system then displays a comprehensive list of all executives registered in the system. The admin can further investigate an executive’s profile by selecting them from the list, revealing more detailed information such as their contact details and account status.

To delete an executive, the admin identifies the executive they wish to remove and clicks the ”Delete” button. The system prompts the admin to confirm the deletion, ensuring they are aware of the action. Upon confirmation, the executive account is permanently removed from the system, ensuring the grievance system maintains an organized and up-to-date executive roster.

This sequence diagram effectively illustrates the admin’s role in managing executives within the mobile application, particularly in tasks like adding, viewing, and deleting executives from the system. This centralized control ensures the grievance system has a sufficient number of qualified executives to effectively address student grievances.

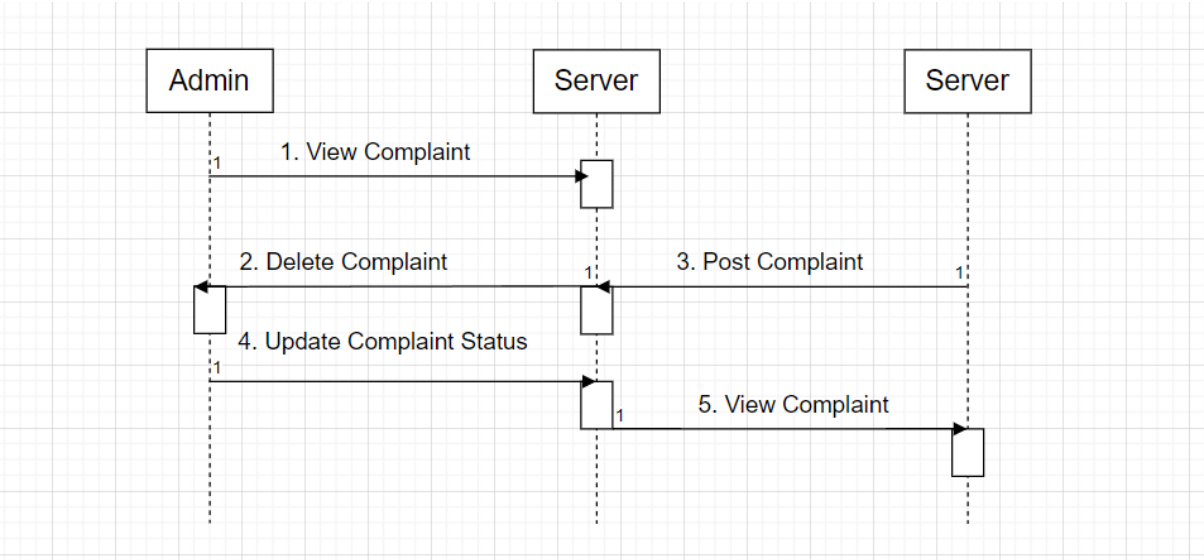

Figure 3.5: Student/ Executive Sequence Diagram

The Grievance management process through a user-friendly interface and intuitive navigation. The executive and student sequence diagrams effectively illustrate the interactive process between the two parties, ensuring efficient communication and collaboration in resolving student concerns.

Executives, acting as grievance resolution officers, initiate the process by logging into the secure mobile application. They can then view a comprehensive list of all pending grievances, select specific complaints for investigation, and update their status accordingly. The status options include ”In Progress,” indicating ongoing investigation, ”Resolved,” indicating a successful resolution, and ”Closed,” indicating that the complaint is no longer relevant or requires further action. Executives can also delete complaints that are no longer relevant or have been resolved through other means.

Students initiate the grievance reporting process by logging into their mobile application accounts. They can then submit complaints by providing the necessary details, including the category, subject, and a detailed description of the issue. Upon submission, the system creates a new complaint record and sends an email notification to the executive, informing them of the new complaint. Students can track the progress of their complaints by reviewing the updated status, which can be ”In Progress,” ”Resolved,” or ”Closed.”

The executive and student (Figure 3.5) sequence diagrams demonstrate the well-designed and efficient grievance management system facilitated by the

mobile application. The centralized system promotes seamless communication and collaboration between executives and students, ensuring that student concerns are addressed promptly and effectively. The user-friendly interface and intuitive navigation make it easy for both executives and students to engage with the system, regardless of their technical expertise.

3.3.3 Class Diagram

The class diagram(Figure 3.6) describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among the classes. It explains which class contains information and also describes responsibilities of the system. This is also known as structural diagram.

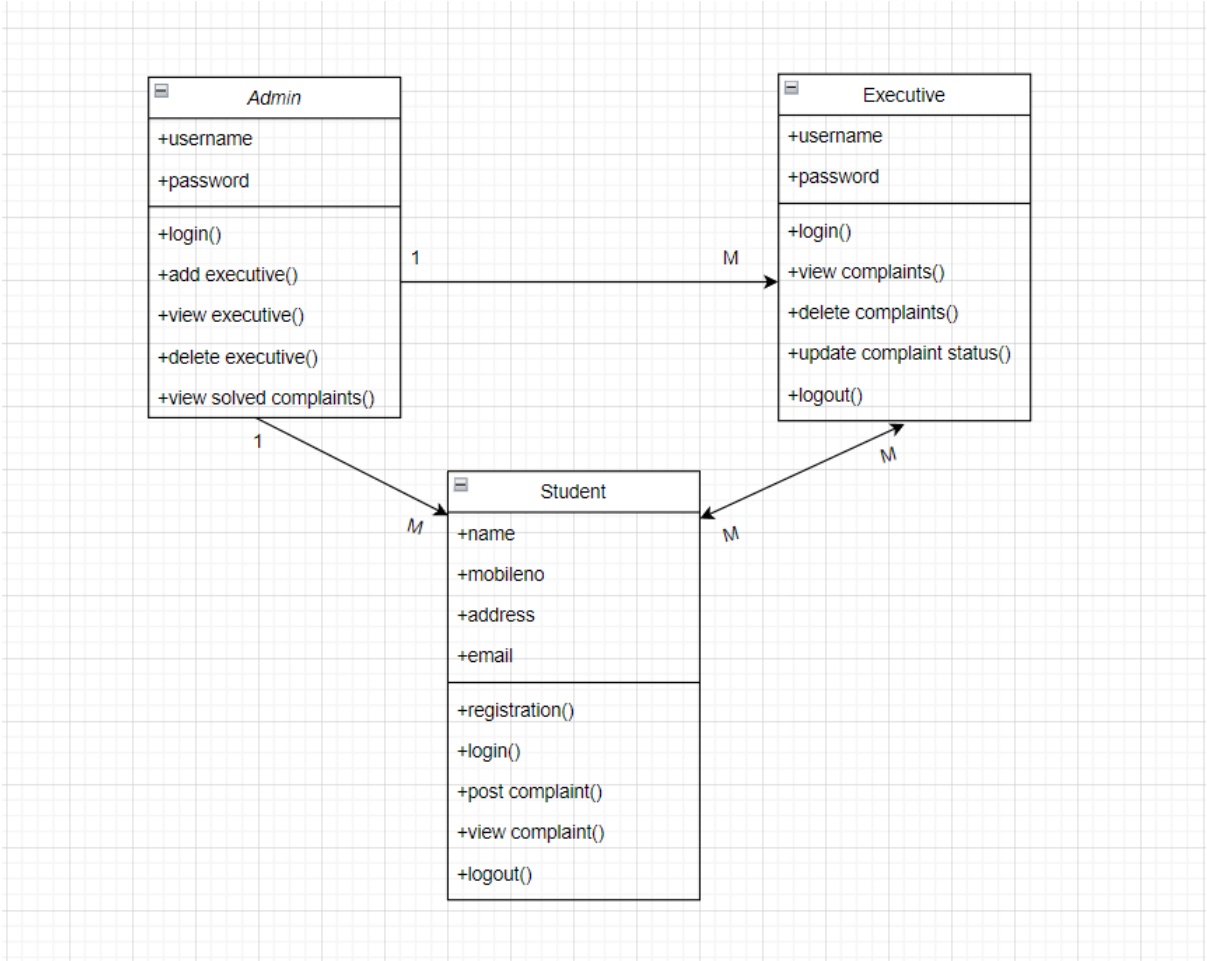

Figure 3.6: Class Diagram

The class diagram for the student grievance application effectively captures the core entities and their interactions within the grievance management system. The diagram comprises three primary classes: Student, Executive, and Admin, each representing distinct roles in the grievance resolution process.

The Student class represents individuals who can register and submit grievances through the mobile application. Attributes associated with the Student class include name, email address, phone number, and registration number. The class encapsulates the behavior of submitting grievances and viewing their status, enabling students to effectively report and track their concerns.

The Executive class represents individuals responsible for reviewing, investigating, and resolving student grievances. Attributes associated with the Executive class include name, email address, and phone number. The class encompasses behaviors such as viewing assigned grievances, updating grievance status, and resolving grievances, empowering executives to effectively manage and address student concerns.

The Admin class represents individuals with overall control over the grievance management system. Attributes associated with the Admin class include name, email address, and phone number. The class encapsulates behaviors such as adding, editing, and deleting executives, providing administrators with the necessary tools to oversee the system's functionality and manage executive roles.

The class diagram for the student grievance application serves as a valuable tool for designing and developing the mobile application. It provides a clear representation of the core entities, their relationships, and the interactions between them. By understanding the class diagram, developers can create a system that is efficient, scalable, and user-friendly, effectively addressing student grievances and fostering a supportive learning environment.

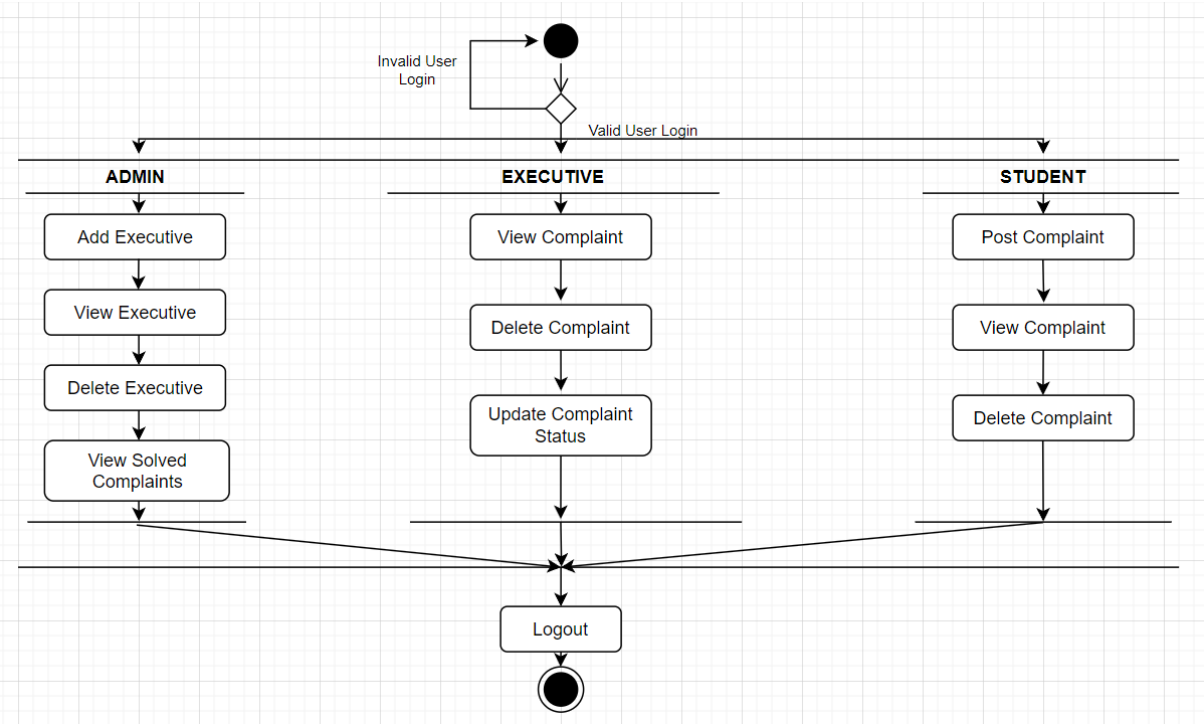

Figure 3.7: Activity Diagram

3.3.4 Activity Diagram

It is a behavioral diagram (Figure 3.7) which reveals the behavior of a system. it sketches the control flow from initiation point to a finish point showing the several decision paths that exist while the activity is being executed. This doesn't show any message flow from one activity to another, it is sometimes treated as the flowchart. Despite they look like a flowchart, they are not.

In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. The activity diagram for the student grievance system mobile application effectively captures the sequential steps involved in submitting, investigating, and resolving student grievances. The diagram illustrates the distinct roles of students, executives, and administrators within the grievance resolution process.

The student initiates the grievance resolution process by submitting a grievance through the mobile application. This involves providing detailed information about the issue, including the category, subject, and a comprehensive description. Once submitted, the student can track the progress of their grievance by viewing its status, which can be "In Progress," indicating ongoing investigation,

”Resolved,” indicating a successful resolution, or ”Closed,” indicating that the complaint is no longer relevant or requires further action.

Upon receiving an assigned grievance, the executive reviews the details, including the student’s description and any relevant evidence or attachments. The executive then investigates the issue, which may involve gathering additional information from the student, conducting interviews with witnesses, or reviewing relevant documentation. Based on the investigation, the executive updates the grievance status accordingly. If the grievance is resolved, the executive may provide a summary of the resolution and any recommendations for preventing similar issues in the future.

The admin plays a crucial role in managing the executive pool within the grievance management system. The admin has the authority to add new executives, providing them with access to the system and assigning them to grievances. Additionally, the admin can edit executive details, ensuring the system maintains accurate and up-to-date information. Finally, the admin has the ability to delete executives, removing them from the system when necessary. The activity diagram clearly illustrates the flow of control between the different activities, indicating the sequential steps involved in the grievance resolution process.

3.4 Analysis

Although the scale of this project is relatively small, to produce a professional solution is it imperative that the current problem is understood accurately. However, this task has been made doubly difficult by the lack of support from the company. Thankfully, the Application manager has been kind enough to spare me some of his own time to discuss the problem with me further. Therefore, this chapter is concerning with analyzing the current situation and expectations of the user for this system.

3.4.1 Requirement Analysis

Taking into account the comparative analysis stated in the previous section we could start specifying the requirements that our website should achieve. As a basis, an article on all the different requirements for software development was taken into account during this process. We divide the requirements in 2 types: **functional** and **nonfunctional requirements**.

Functional Requirements

Functional requirement should include function performed by a specific screen outline work-flows performed by the system and other business or compliance requirement the system must meet.

Functional requirements specify which output file should be produced from the given file they describe the relationship between the input and output of the system, for each functional requirement a detailed description of all data inputs and their source and the range of valid inputs must be specified.

The functional specification describes what the system must do, how the system does it is described in the design specification.
If a user requirement specification was written, all requirements outlined in the user requirements specifications should be addressed in the functional requirements.

Non Functional Requirements

Describe user-visible aspects of the system that are not directly related with the functional behavior of the system. They are also called **Non-behavioral requirements**. Non-Functional requirements include quantitative constraints, such as response time (i.e. how fast the system reacts to user commands.) or accuracy (i.e. how precise are the systems numerical answers). Some of them are Portability, Reliability, Usability, Time Constraints, Error messages Actions which cannot be undone, should ask for confirmation, Responsive design should be implemented, Space Constraints, Performance Standards, Ethics, Interoperability, Security, Privacy and Scalability.

3.5 Input Design and Output Design

3.5.1 Input Design

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy.

3.5.2 Objectives

Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing

facilities.

When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow.

3.5.3 Output Design

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

Feature	**Description**
User-friendly Interface	Intuitive design for easy navigation and complaint submission.
Mobile Compatibility	Application compatible with Android devices.
Real-time Tracking	Ability for students to track the status of their grievances.
Immediate Resolution	Swift and efficient complaint resolution process.
Transparency	Promotion of transparency in the grievance resolution process.

Table 3.1: Feature Matrix

3.5.4 Feasibility Study

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are:

Economical Feasibility

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

Technical Feasibility

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

Social Feasibility

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

Category	Description
Student Information	Name, ID, Contact Details
Grievance Type	Academic, Administrative, Personal, Others
Date of Grievance	When the issue occurred
Description	Detailed explanation of the grievance
Department/Unit	Relevant academic or administrative unit
Status	Pending, Under Review, Resolved
Actions Taken	Steps or resolutions implemented
Deadline for Action	If applicable, time frame for resolution
Communication	Correspondence and updates on the grievance

Table 3.2: Student Grievance System Table

3.6 Software Requirement Specification

Software Requirements Specification (SRS) is the starting point of the software developing activity. As system grew more complex it became evident that the goal of the entire system cannot be easily comprehended. Hence the need for the requirement phase arose. The software project is initiated by the client needs. The SRS is the means of translating the ideas of the minds of clients (the input) into a formal document (the output of the requirement phase).
The SRS phase consists of two basic activities:
(i) Problem/Requirement Analysis:
The process is order and more nebulous of the two, deals with understand the problem, the goal and constraints.
(ii) Requirement Specification:
Here, the focus is on specifying what has been found giving analysis such as representation, Specification languages and tools, and checking the specifications are addressed during this activity.
The requirement phase terminates with the production of the validate SRS document. Producing the SRS document is the basic of this phase.

3.6.1 Role of SRS

The purpose of the SRS is to reduce the communication gap between the clients and the developers. SRS is the medium though which the client and user needs are accurately specified. It forms the basis of software development. A good SRS should satisfy all the parties involved in the system.

Purpose:

The purpose of this document is to describe all external requirements for the E-learning System. It also describes the interfaces for the system.

Scope:

This document is the only one that describes the requirements of the system. It is meant for the use by the developers, and will also by the basis for validating the final deliver system. Any changes made to the requirements in the future will have to go through a formal change approval process. The developer is responsible for asking for clarifications, where necessary, and will not make any alternations without the permission of the client.

Overview:

The SRS begins the translation process that converts the software Requirements into the language the developers will use. The SRS draws on the Use Cases from the user Requirement Document and analyses the situations from a number of perspectives to discover and eliminate inconsistencies, ambiguities and omissions before development progresses significantly under mistaken assumptions.

Chapter 4

IMPLEMENTATION

4.1 System Modules

The student grievance system comprises a well-structured framework with distinct modules designed to streamline and optimize the grievance resolution process. These modules are tailored to address various facets of the system's functionality, ensuring a comprehensive and user-friendly experience. Key modules include the Grievance Submission module, where users can submit their grievances seamlessly, providing essential details. The Administrative Dashboard serves as a centralized hub for administrators to review and manage incoming grievances efficiently. Additionally, the Notifications module keeps users informed about the progress of their submitted grievances, fostering transparent communication. The Change Password module empowers users to proactively manage their account security. Together, these modules form a cohesive and efficient system, aiming to enhance the overall experience for both students and administrators involved in the grievance resolution process.

User Role	**Description**
Admin	Overall Control over the app and handling the executives.
Executive	Responsible for handling & resolving student grievances.
Student	End-user submitting grievances and tracking their status.

Table 4.1: User Roles

4.1.1 Admin Module

The ADMIN module has a set of functionalities for managing faculty, coordinators, and handling complaints within an educational or organizational context.

Add Faculty / Add Coordinator:

Add Faculty: The ”Add Faculty” functionality empowers the administrator to seamlessly integrate new faculty members into the system. This involves entering comprehensive details such as the faculty member's full name, contact information, academic qualifications, subject expertise, and any other pertinent information required for effective management.

Add Coordinator: Similar to the process of adding faculty, the ”Add Coordinator” feature is designed for incorporating coordinators into the system. Coordinators often bear additional responsibilities, such as overseeing specific departments or programs. The administrator can input details about the coordinator's role, department, and other relevant information.

View Faculty / View Coordinator:

View Faculty: The ”View Faculty” module provides the administrator with a comprehensive overview of all faculty members within the system. This includes a detailed list or individual profiles, encompassing information like names, contact details, subjects taught, academic credentials, and any other pertinent details for efficient management.

View Coordinator:Similarly, the ”View Coordinator” functionality enables the administrator to access a consolidated view of coordinators along with their designated responsibilities. This module ensures transparency by offering insights into each coordinator's role, departmental affiliations, and other relevant details.

View Complaints:

The ”View Complaints” module serves as a centralized hub for administrators to access a comprehensive list of complaints submitted by students, faculty, or other users. The complaints may span various categories, including academic concerns, misconduct, or facility-related issues. This module enhances the administrator's awareness of the challenges faced by the educational community.

View Solved Complaints:

Once a complaint has undergone the resolution process, the ”View Solved Complaints” module allows the administrator to review a catalog of success-

fully resolved complaints. This feature aids in maintaining an organized record of the resolution outcomes, offering insights into the effectiveness of the grievance resolution procedures.

Delete Complaints:

The ”Delete Complaints” functionality empowers the administrator to manage the system’s database by removing or archiving resolved complaints. This housekeeping feature ensures that the system maintains a clean and efficient record, focusing on active and unresolved complaints while preserving historical data.

Delete Faculty:

The ”Delete Faculty” feature provides the administrator with the capability to remove a faculty member from the system when necessary. To prevent accidental deletions, this functionality may involve a confirmation process, safeguarding the integrity of faculty data within the system.

The Admin Module is a crucial component of the Student Grievance Application, offering collectively provide the administrator with the tools needed to manage personnel (faculty and coordinators) and handle complaints efficiently. The comprehensive set of features aims to streamline administrative tasks, promote a well-functioning educational institution, and address concerns any concerns proactively or issues that may arise, contributing to an overall enhanced user experience.

4.1.2 Executive Module

View Complaints:

The ”View Complaints” module within the EXECUTIVE module serves as a centralized dashboard for executives, offering a comprehensive list of complaints submitted by various stakeholders. This feature provides executives with a holistic overview of the reported issues, allowing them to prioritize and address concerns based on their urgency or significance.

Update Complaint Status:

Executives, being higher-level administrators or staff members, possess the authority to manage and update the status of complaints. The ”Update Complaint Status” functionality empowers executives to mark complaints with rele-

vant statuses such as ”in progress,” ”resolved,” or any other custom status. This real-time status update mechanism facilitates effective tracking of the resolution progress, ensuring transparency and accountability in grievance handling.

4.1.3 Student Module

Registration:

The ”Registration” module within the STUDENT module facilitates the onboarding of students into the system. Students can create accounts by providing essential details such as their full name, contact information, and other relevant identification data. This module ensures a seamless and secure registration process, establishing a unique identity for each student within the system.

Post Complaint:

The ”Post Complaint” functionality is a key feature for students to voice their concerns and grievances. Students can use this module to submit detailed complaints regarding various issues they may encounter during their academic journey. Whether it’s facility-related problems, academic concerns, or other grievances, students can articulate the problem, attach supporting documents if necessary, and submit the complaint for review and resolution.

View Complaints:

The ”View Complaints” module empowers students to keep track of the complaints they have submitted. This feature provides students with a personalized dashboard displaying a list of their reported issues along with the current status of each complaint. It enhances transparency, keeping students informed about the progress and resolution of their grievances.

Delete Complaint:

In some instances, students may have the option to delete a complaint they have submitted. However, to prevent misuse or accidental removal of essential records, this functionality is typically subject to specific conditions or restrictions. The ”Delete Complaint” feature, if available, allows students a degree of control over their submissions while maintaining the integrity of the grievance resolution process.

These modules collectively provide a comprehensive system for students to register, submit complaints, and monitor the progress of their reported issues. On the other hand, executives have tools to oversee the entire list of complaints and update their status, ensuring a streamlined process for handling and resolving grievances within the educational institution or organization.

Chapter 5

RESULTS AND DISCUSSION

The Student Grievance Mobile Application has been successfully implemented, delivering a robust and user-friendly system for the management of student grievances. The prominent feature, the Admin Module, demonstrates its effectiveness through various functionalities. The authentication and authorization mechanisms ensure secure access to the admin module, maintaining the overall system's integrity. Executive management capabilities, encompassing the addition, viewing, and deletion of executives, provide the admin with a dynamic toolset for assembling and maintaining a proficient team capable of promptly addressing student grievances.

The comprehensive oversight afforded by the admin's ability to view detailed lists of resolved complaints enhances their capacity to track progress and identify patterns, contributing to informed decision-making. The reporting functionality empowers the admin to generate insightful reports on the grievance resolution process, facilitating strategic decision-making for continuous system improvement. The graphical representation of use cases through the use case diagram enhances the application's user-friendliness, providing a clear and intuitive overview of the admin's role and fostering ease of understanding and system navigation. In summary, the results affirm the successful implementation of the Student Grievance Mobile Application, delivering an effective solution for streamlined grievance management and resolution.

5.1 Main Page and Login Page

The Main page (Figure 5.1) of the 'Student Grievances' mobile application serves a dual purpose, introducing users to the app's logo and providing convenient access through two prominent options: login and registration. The app's logo, prominently displayed on the home page, is a visually appealing blue and white circle featuring our College Logo "VIGNAN". Emblazoned with the name of the app "VGNT C-HUB," the logo encapsulates the app's identity and conveys its overarching vision of serving as a centralized hub for student voices and opinions.

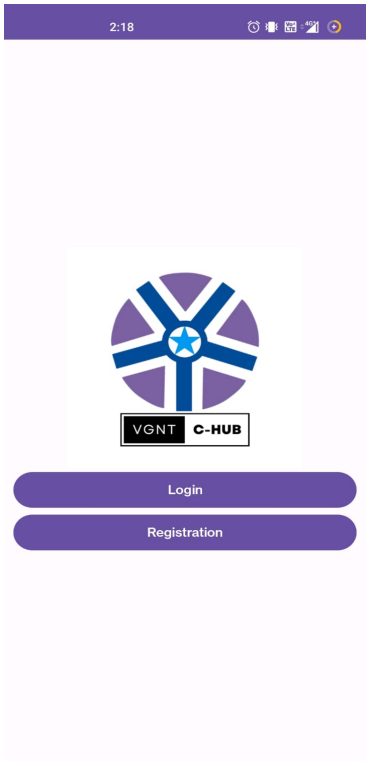

Figure 5.1: Main Page

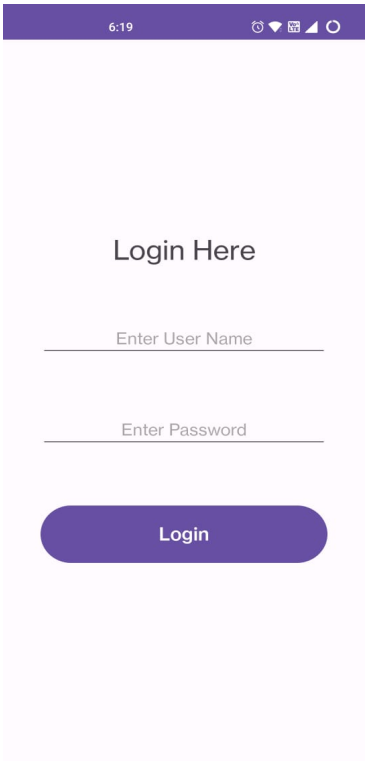

Figure 5.2: Login Page

Positioned beneath the logo are two distinct buttons. The login button, designed for existing users, facilitates seamless access to their accounts by prompting them to enter their credentials. On the other hand, the registration button is tailored for new Student users, offering a straightforward pathway for creating an account and becoming part of the app's vibrant community. This intuitive design ensures that users, whether returning or new, can effortlessly navigate and engage with the application's features, aligning with the app's

commitment to providing a user-friendly and inclusive platform for addressing student grievances.

The login section (Figure 5.2) of the 'Student Grievances' mobile application is designed with the primary purpose of facilitating existing users in seamlessly accessing their accounts by entering their credentials. To successfully log in, users are required to provide their designated username, which corresponds to the mobile number used during the registration process, and their associated password.

5.2 Student Register and Login

The registration section (Figure 5.3) of the 'Student Grievances' mobile application serves the fundamental purpose of enabling new users to effortlessly create an account and become part of the app's community. This crucial onboarding process requires users to furnish personal and academic details to initiate their registration.

Within the registration section, users encounter a user-friendly interface comprising seven distinct fields. The first field, Mobile Number, necessitates the entry of a 10-digit mobile number, serving both as a unique username and a verification tool. The subsequent field, Gender, offers a choice between Male and Female through radio buttons, allowing users to specify their gender. Branch, the next field, prompts users to select their field of study from the options CSE, ECE, or MECH via radio buttons, streamlining the registration process.

Year, the following field, offers a straightforward selection of the user's academic year—options include 1, 2, 3, or 4—via radio buttons. The Section field requires users to input their section details, contributing to the identification of their class and batch. The Password field demands the creation of a robust and secure password to fortify the user's account against unauthorized access.

To avoid typos and ensure password accuracy, the subsequent Retype Password field necessitates users to re-enter the same password. Finally, the registration section culminates with a prominent "Register" button located at the bottom. Upon completing all the required fields, users can tap this button to sub-

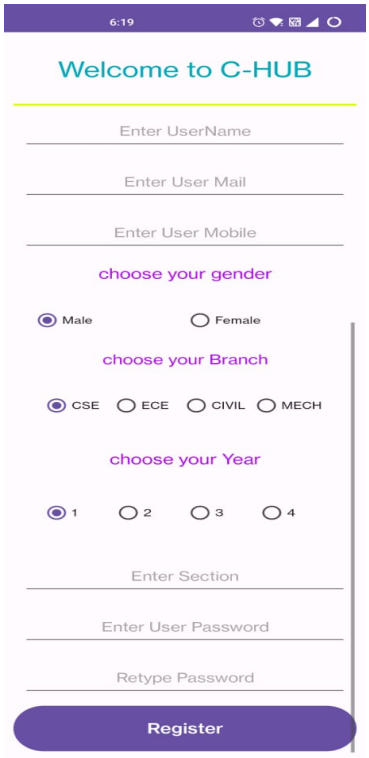

Figure 5.3: Student Registration

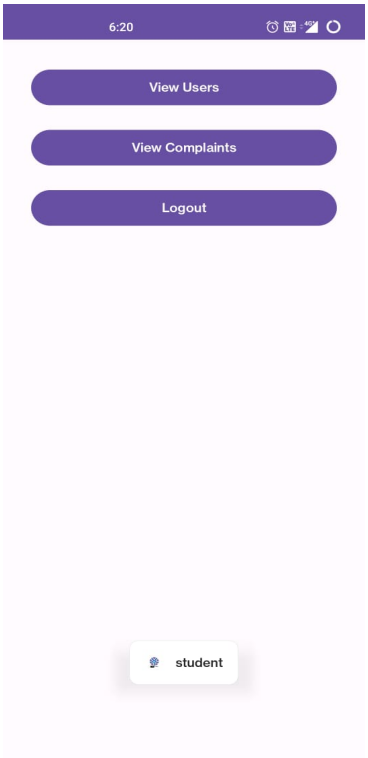

Figure 5.4: Student Login

mit their registration form, thereby successfully creating their account within the 'Student Grievances' mobile application. This meticulous design ensures a smooth and secure registration process, aligning with the app's commitment to user convenience and data security.

The user interface (Figure 5.4) of the 'Student Grievances' mobile application is purposefully designed to provide students with a straightforward and accessible platform, offering three distinct options: viewing users, accessing complaints, and logging out. The interface features three prominently displayed buttons against a purple background with white text, each serving a specific function.

The "View Users" button, marked in white text, enables users to access a comprehensive list of fellow app registrants. Within this section, users can explore individual profiles, including contact details, fostering a sense of community and facilitating communication among users.

The second button, labeled "View Complaints," grants users access to a compiled list of grievances submitted on the app. This section provides comprehensive details, including the status and comments associated with each complaint,

offering transparency and insight into the grievance resolution process.

The ”Logout” button, also presented against the purple backdrop, allows users to seamlessly conclude their app session. Choosing this option terminates the current user session, necessitating a subsequent login to re-engage with the application’s features.

Augmenting the interface is a small icon featuring an outline of a person, strategically positioned in the bottom right corner. Accompanied by the label ”student,” this icon serves as a visual indicator, signaling that the user is currently logged in as a student and has full access to the application’s functions. The ’Student Grievances’ mobile application’s user interface prioritizes simplicity and functionality, empowering students to effortlessly navigate through the available options, fostering community engagement, and enhancing the overall user experience.

5.3 Admin Functionalities

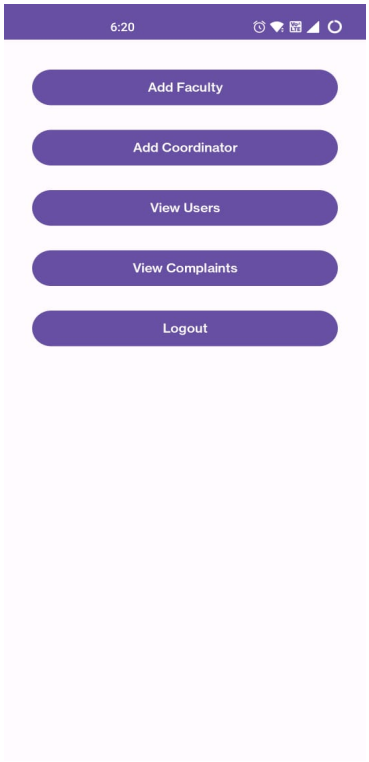

Figure 5.5: Admin Login

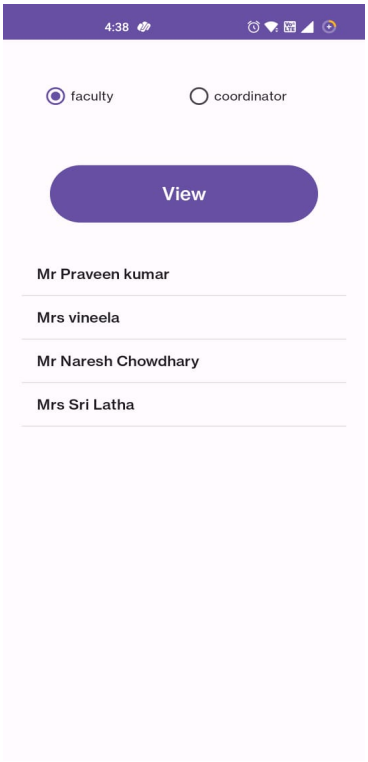

Figure 5.6: View Users

The interface tailored for administrators (Figure 5.5) within the ’Student Grievances’ mobile application is specifically designed to facilitate compre-

hensive management of users and complaints on the platform. Administrators are presented with five distinct options against a purple background with white text, each geared towards specific administrative tasks.

The ”Add Faculty” option empowers administrators to seamlessly integrate new faculty members into the app. Administrators can input essential details such as the faculty’s name, mobile number, email, and password, streamlining the process of expanding the faculty database.Similarly, the ”Add Coordinator” option enables administrators to include new coordinators in the app, individuals responsible for handling and assigning complaints to faculty members. Details required for addition include the coordinator’s name, mobile number, email, and password, facilitating efficient complaint management.

The ”View Users” (Figure 5.6) option offers administrators an overview of all registered executives on the app. Administrators can delve into individual profiles, gaining insights into user details and contact information, fostering a transparent and communicative environment.

For streamlined grievance oversight, the ”View Complaints” option allows administrators to access a consolidated list of posted complaints. Comprehensive details, including status and comments associated with each complaint, offer administrators valuable insights into the ongoing resolution processes.

The ”Logout” option, situated prominently on the interface, permits administrators to conclude their session securely. Opting for logout terminates the current administrative session, necessitating subsequent login procedures to resume app functionality. A small icon featuring a person, accompanied by the label ”admin,” resides in the bottom right corner of the interface. This icon serves as a visual cue, indicating that the logged-in user assumes an administrator role, endowed with access to the application’s administrative functions.

5.4 Add Executive

The interface designed for adding faculty members (Figure **??**) in the ’Student Grievances’ mobile application serves the pivotal purpose of enabling administrators to seamlessly incorporate new faculty members into the system. Geared towards individuals who will be responsible for managing student

grievances, this interface necessitates the input of specific personal and academic details by administrators to complete the registration process.

Comprising seven distinct fields, the interface ensures a comprehensive collection of relevant information. The administrator initiates the process by entering the faculty member's name in the "User name" text field, serving as both a username and an identifier for the faculty member. Subsequently, the administrator inputs the faculty member's 10-digit mobile number in the designated field, essential for verification and communication purposes.

The interface further prompts the administrator to specify the faculty mem-

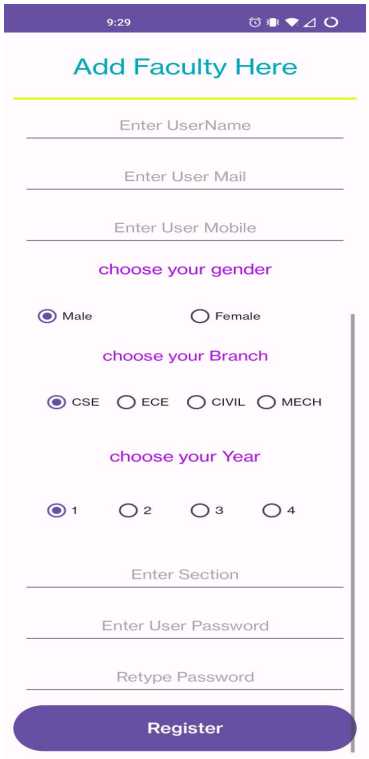

Figure 5.7: Faculty Register

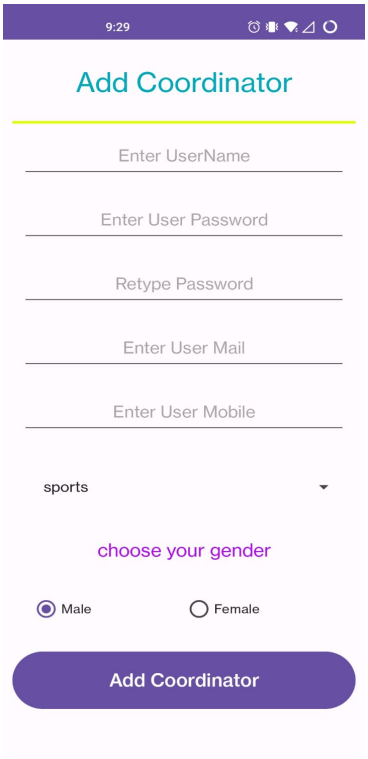

Figure 5.8: Coordinator Register

ber's gender, allowing for selection from the available radio buttons: Male or Female. Branch of teaching is the next parameter, with radio buttons offering choices such as CSE, ECE, or Civil. Year of teaching follows, with options ranging from 1 to 4, providing a quick and efficient means of identifying the faculty member's academic standing.

The interface culminates with a prominently positioned "Register" button at the bottom. Administrators are instructed to tap this button after diligently completing all the required fields. This action prompts the submission of the regis-

tration form, effectively adding the faculty member to the 'Student Grievances' mobile application. The systematic and intuitive design of this interface enhances the efficiency of the faculty member registration process, contributing to the seamless functionality of the broader grievance management system.

The interface tailored for adding coordinators (Figure **??**) within the 'Student Grievances' mobile application is purpose-built to facilitate administrators in seamlessly integrating new coordinators, each tasked with overseeing specific categories of student complaints. To register coordinators on the app, administrators are required to furnish essential personal details of the coordinators and delineate their areas of responsibility.

Comprising five meticulously designed fields, the interface commences with the "User name" text field, where administrators input the coordinator's name. This entry serves a dual purpose as both the username and a means of identification within the system. Following this, administrators establish a secure account for the coordinator by inputting a robust password in the designated text field.

To confirm the password and mitigate potential typos, administrators are prompted to retype the same password in the subsequent text field. Simultaneously, the coordinators' 10-digit mobile number is solicited in another field, serving as a crucial element for both verification and communication purposes.

A distinctive feature of this interface is the inclusion of a category selection mechanism. Administrators are presented with a list of ten categories, each representing distinct areas within the system where students may raise complaints or encounter issues. These categories encompass Exam, Hostel, Transport, Canteen, Library, Placements, Ragging, Events, Infrastructure, and Lab. Administrators can select one or more categories for each coordinator, aligning responsibilities with the coordinators' expertise and preferences.

5.5 Grievance Interaction

The view executive page shows the options to view the faculty list and also the coordinator list and If we want to see the list of faculty we can just select that and click on view then we can see the list of faculty (Figure 5.9).

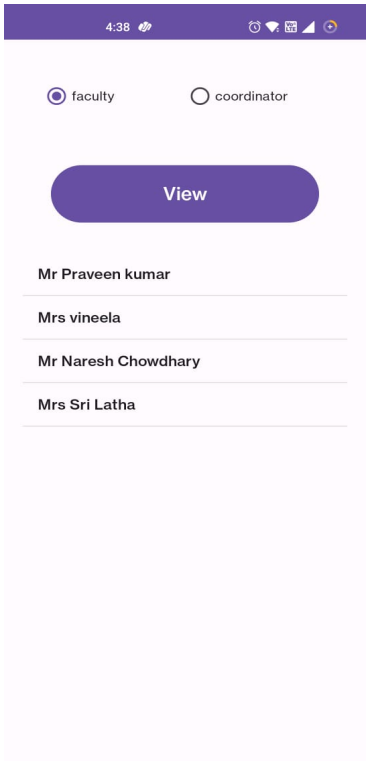

Figure 5.9: View Executive

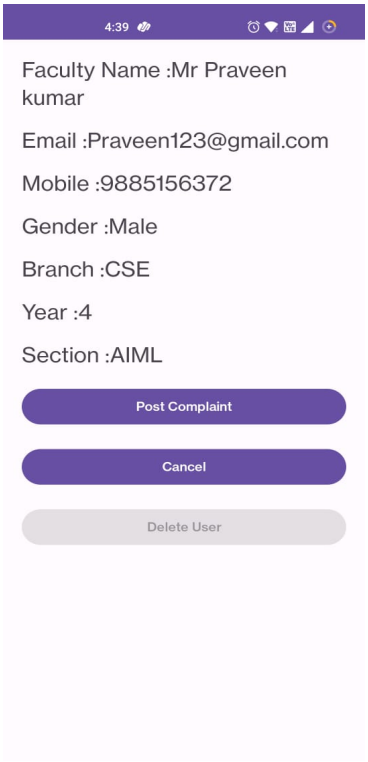

Figure 5.10: Details of Executive

Users are presented with a dedicated section (Figure 5.10) where they can easily access information about the executive members responsible for handling grievances. This section displays essential details, including the names of executives, their email addresses, phone numbers, as well as the specific branch and section they represent within the educational institution. To ensure swift communication and easy accessibility, the app provides a comprehensive profile for each executive, allowing students to initiate contact directly through email or phone.

Moreover, the app incorporates an intuitive feature called ”Post Complaint,” accessible through a clearly labeled button. This streamlined process enables students to submit their grievances efficiently, initiating a transparent and accountable system for addressing concerns. The combination of detailed executive profiles and a straightforward complaint submission feature ensures that students can easily navigate the app, fostering a more collaborative and responsive approach to addressing grievances within the educational community.

Once users have selected a specific faculty member from the executive list, the option to ”Post Complaint” triggers a seamless transition to a new page ded-

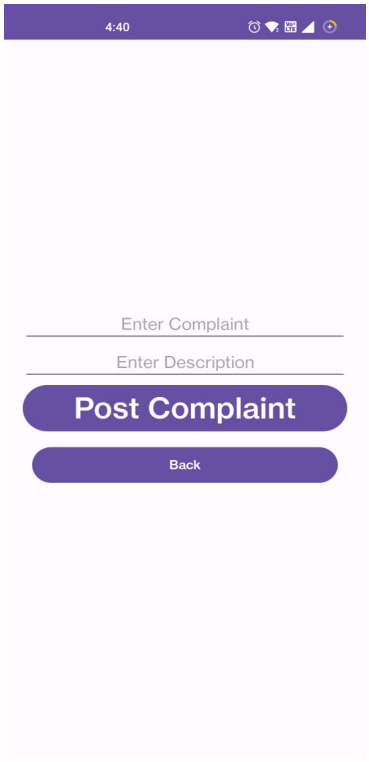

Figure 5.11: Post Complaint

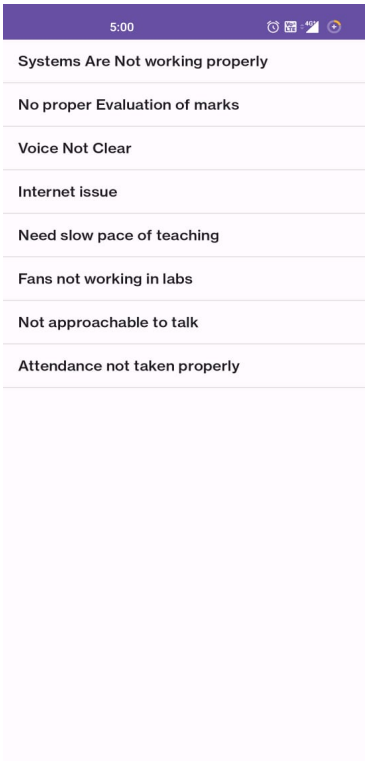

Figure 5.12: View Complaints

icated to filing grievances (Figure 5.11). On this intuitive interface, students are prompted to provide essential details, including a complaint title and a comprehensive description of their concerns. The user-friendly form is designed to capture pertinent information effectively, facilitating a clear understanding of the grievance for swift resolution.

The ”Post Complaint” feature streamlines the process of reporting concerns, allowing students to articulate their grievances in a structured manner. By including a complaint title, students can succinctly summarize the nature of their concern, while the complaint description field offers a platform to elaborate on the issue, providing necessary context and details. This thoughtful design ensures that the submitted complaints are comprehensive and easy for administrators to comprehend.

Following the successful submission of a complaint by a student through the ”Post Complaint” feature, the app ensures a systematic and organized workflow for administrators. A dedicated section (Figure 5.12) allows executives to view all received complaints in a concise and efficient manner. The complaints are presented in a linear format, with the latest submissions appearing at the top of

the list for immediate attention.

The streamlined display of complaints enables administrators to have a comprehensive overview of the issues raised by students. Each entry in the list provides essential details, such as the complaint title and the timestamp of submission. This chronological arrangement ensures that administrators can promptly prioritize and address the most recent grievances.

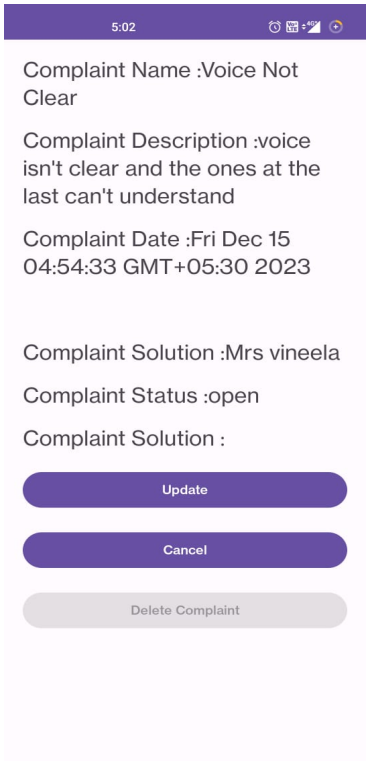

Figure 5.13: Complaint Check

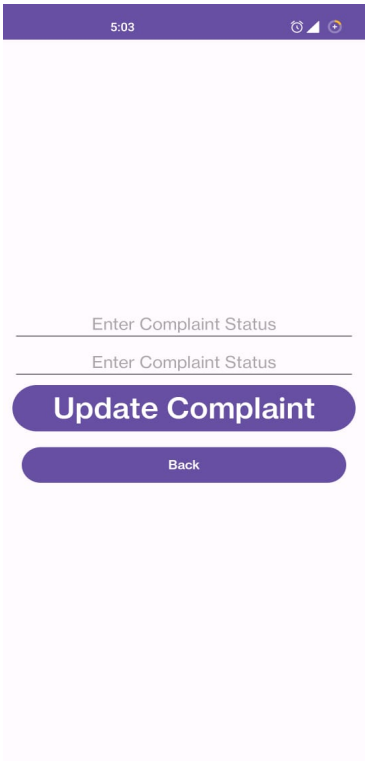

Figure 5.14: Update Complaint

After an executive logs into the system and accesses the list of received complaints, the faculty can click on any specific complaint to view its details. Clicking on a complaint opens a dedicated page (Figure 5.13) displaying the comprehensive information submitted by the student. This includes the complaint name, a detailed description of the grievance, and crucially, the timestamp indicating when the complaint was originally received.

By providing faculty members with the ability to delve into the specifics of each complaint, the app aims to enhance their understanding of the concerns raised by students. The timestamp offers a reference point, allowing faculty to track the timeline of each grievance and consider its urgency.

This feature enables a more thorough and informed review process, empowering faculty members to address student concerns with accuracy and efficiency. By offering a detailed view of each complaint along with its corresponding timestamp, the app supports a transparent and accountable system for managing and resolving grievances within the educational institution.

Faculty can click on the ”Update” button, initiating a seamless transition to a new page (Figure 5.14) dedicated to recording updates. On this Update page, faculty members are presented with an ”Update Status” field where they can input relevant information regarding the progress or resolution of the grievance. This could include details about the actions taken, resolutions proposed, or any other pertinent updates. The user-friendly design of the Update page ensures that faculty can efficiently communicate the status of the complaint.

The introduction of an ”Update” feature enhances transparency in the grievance resolution process, allowing faculty members to keep students informed about the progress made on their concerns. This two-way communication fosters a sense of accountability and demonstrates the institution's commitment to addressing grievances promptly and effectively. By providing a dedicated space for updates, the app facilitates clear and concise communication between faculty and students, contributing to a collaborative and responsive environment within the educational institution.

After a faculty member provides an update on a specific complaint, students can conveniently track the status of their grievances through the app. A dedicated section within the app allows students to view the latest updates and resolution status of their complaints. This information is presented in a clear and accessible format, ensuring transparency in the grievance resolution process.

Upon logging into the app, students can navigate to the ”View Complaints” section, where a comprehensive list of their submitted grievances is displayed. Each complaint entry includes details such as the complaint title, description, and a timestamp of the latest update made by the faculty. Notably, the status of each complaint is prominently featured, indicating whether the grievance is resolved, pending, or undergoing further action.

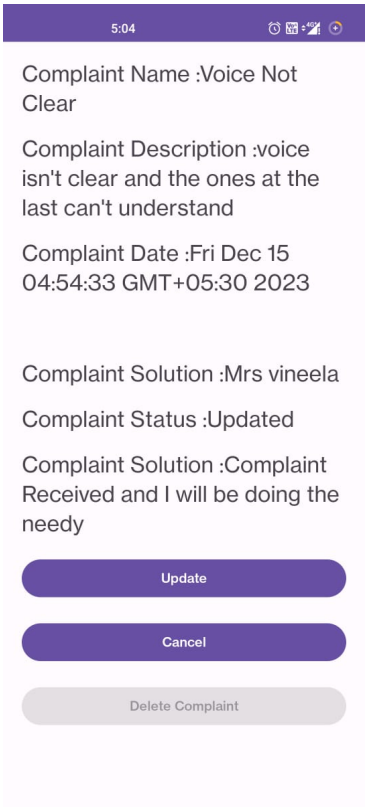

Figure 5.15: Complaint Updated

This feature (Figure 5.15) empowers students by providing real-time information about the progress of their complaints, enhancing communication and accountability within the educational institution. By offering a transparent view of the status updates, the app reinforces its commitment to addressing student concerns in a timely and effective manner. This functionality ensures that students remain well-informed throughout the grievance resolution process, promoting a positive and collaborative relationship between students and the executive team.

5.6 DataBase

In the development of our student grievance mobile app, we opted to leverage Firebase as the backend database solution. Firebase, known for its cloud-based NoSQL database, proved to be an excellent choice for our real-time application needs.

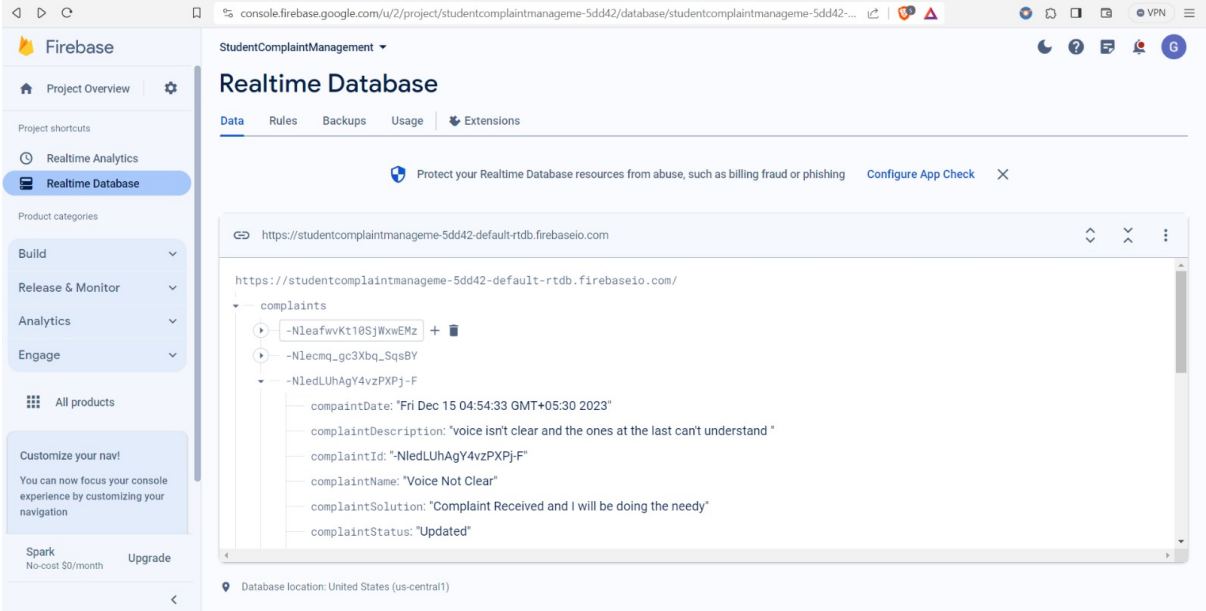

Figure 5.16: Database View

The real-time data synchronization feature of Firebase stands out prominently in our app's functionality. This ensures that any updates or modifications made to the database are immediately reflected across all connected clients. This capability (Figure 5.16) is particularly advantageous for our student grievance app, as it guarantees that the latest information about grievances is accessible to both students and administrators in real-time. Scalability and performance are crucial aspects for our growing user base. Firebase's scalable solutions enable our app to efficiently handle an increasing number of users and grievances. As the student body expands, Firebase seamlessly scales to accommodate the heightened data and user interactions.

Additionally, Firebase offers tools for user feedback and analytics. Firebase Analytics provides insights into user behavior, allowing us to track feature performance and make informed decisions to enhance the overall user experience of our student grievance app. This integration with Firebase significantly contributes to the efficiency, real-time functionality, and security of our student grievance mobile app, creating a robust platform for addressing and resolving student concerns.

Chapter 6

CONCLUSION AND FUTURE SCOPE

6.1 Conclusion

In conclusion, the development and implementation of the Student Grievance System mobile app mark a pivotal milestone in our ongoing commitment to fostering a positive and responsive educational environment. Through this project, we have successfully addressed the limitations of the existing physical complaint box system, introducing a dynamic, technology-driven solution that enhances accessibility, transparency, and efficiency in handling student grievances.

The system's real-time tracking and updates provide students with a newfound sense of confidence and engagement in the grievance resolution process. The user-friendly interface and interactive features contribute to a seamless user experience, empowering students to actively participate in shaping the quality of their educational journey.Furthermore, the heightened security and confidentiality measures incorporated into the mobile app demonstrate our unwavering commitment to protecting the privacy of student grievances. This commitment is vital in building and maintaining trust among our student body, ensuring that they feel secure in expressing their concerns through the app.

As we embrace this technological leap, we anticipate not only a more streamlined grievance resolution process but also a cultural shift towards openness, accountability, and continuous improvement. The Student Grievance System mobile app stands as a testament to our dedication to creating an inclusive and supportive educational community, where the voices of students are not only heard but also actively contribute to the enhancement of our institution.

6.2 Future Scope

In the evolving landscape of the student grievance system application, the integration of robust notification functionalities stands as a pivotal aspect of future development. Implementing a comprehensive notification system will enhance user engagement by providing timely updates on the status of submitted grievances, ensuring students and administrators remain informed throughout the resolution process. This feature could encompass real-time alerts for grievance status changes, acknowledgment of submissions, and reminders for upcoming deadlines, fostering a transparent and communicative environment within the system.

Recognizing the importance of security and user control, the forthcoming enhancements for the student grievance system will include a user-friendly ”Change Password” feature. Empowering users to modify their passwords ensures heightened account security and aligns with best practices for safeguarding sensitive information. This future addition will allow students and administrators to proactively manage their account credentials, promoting a secure digital environment. By incorporating an intuitive interface for password modification, the application aims to prioritize user privacy and security as integral components of its ongoing development.

Onemore avenue for future scope involves the integration of the application with other educational platforms, such as learning management systems (LMS) or student information systems (SIS). This integration could create a more comprehensive ecosystem for student services, enabling a seamless flow of information and enhancing the overall efficiency of administrative processes.

Additionally, the project could benefit from the implementation of machine learning algorithms and analytics tools. These technologies could analyze patterns in grievance data, offering predictive insights into potential issues and empowering the institution to proactively address concerns before they escalate. The incorporation of real-time feedback mechanisms and surveys within the application is another promising avenue for future development, providing continuous input from students and facilitating ongoing improvements in various aspects of the educational experience.

To further enhance transparency and security, the project could explore the integration of blockchain technology. This would ensure the integrity and traceability of each grievance resolution record, addressing concerns related to data authenticity and confidentiality. Furthermore, the application could evolve to support multiple communication channels, including web interfaces and other mobile platforms, to cater to the diverse preferences of the student population.

The future scope also includes the introduction of AI-driven chatbots within the application, offering immediate assistance to students, answering queries, and guiding them through the grievance submission process. Enhanced reporting tools and dashboards for administrators would provide a more sophisticated means of visualizing trends, tracking resolution timelines, and making data-driven decisions to improve institutional processes. Security measures should be continuously bolstered to protect the confidentiality of grievance data and ensure compliance with privacy regulations.

As the ”Student Grievance System” project advances, collaboration features could be extended to foster better interaction between students, faculty, and administrative staff. This holistic approach to addressing and resolving concerns reflects a commitment to creating a responsive and student-centric environment. Scalability should also be a consideration, ensuring the application is designed to meet the needs of larger educational institutions with a higher volume of students and grievances. Furthermore, exploring the potential for global adoption and adapting the system to different cultural and regulatory contexts could position the project as a valuable solution on a global scale. Implementing accessibility features ensures that the application is inclusive and usable by individuals with diverse needs, aligning with principles of equity and diversity in education. Overall, these future scope areas pave the way for the ”Student Grievance System” to evolve into a comprehensive, adaptive, and globally relevant solution.

REFERENCES

[1] K. Aravindhan, K. Periyakaruppan, K. Aswini, S. Vaishnavi and L. Yamini, "Web Portal for Effective Student Grievance Support System," *2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS)*, Coimbatore, India, 2020, pp. 1463-1465.

[2] S. Shah, S. Jha and P. Sonawane, "Smart Student Grievance Redressal System with Foul Language Detection," *2022 8th International Conference on Advanced Computing and Communication Systems (ICACCS)*, Coimbatore, India, 2022, pp. 187-192.

[3] S. Kuhan and L. K. J. Grace, "Design and Implementation of Students Grievance and Database," *2023 2nd International Conference on Applied Artificial Intelligence and Computing (ICAAIC)*, Salem, India, 2023, pp. 1065-1068.

[4] Viral Patel, Daanyaal Kapadia, Deval Ghevariya, Shiburaj Pappu, "All India Grievance Redressal App," *Journal of Information Technology and Digital World*, 2, 91-99, 2020.

[5] Satheeswaran Venkatesan, Arjun R, Nidhin A, Pranav C., "State-Level Students Grievance Support System," *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, 364-367, 2020.

[6] Agarwal, R., & Kaur, A. (2020). "Enhancing Student Satisfaction through an Effective Student Grievance Redressal System," *International Journal of Engineering and Technology*, 8(3), 268-272.

[7] Sharma, S., & Singh, P. (2019). ”A Comparative Analysis of Student Grievance Redressal Mechanisms in Higher Education Institutions,” *Journal of Education and Social Sciences*, 10(2), 1-10.

[8] Shah, J., & Patel, V. (2022, April), ”An Effective Student Grievance Redressal System Using Natural Language Processing,” *International Conference on Intelligent Computing and Information Systems*, 123-128.