

Research on an Application Based Internal Student Grade Reporting System

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Abstract: *In recent years, digital platforms have significantly transformed various aspects of communication and information sharing. This project proposes the development of a WhatsApp-based student internal marks reporting system aimed at providing parents with convenient and timely access to their child's CIE performance.*

Keywords: WhatsApp API, Admin interface, WhatsApp integration

1. Introduction

In today's digital age, communication has become an integral part of our lives, transforming how we interact and share information. The popularity and widespread usage of instant messaging platforms like WhatsApp have opened new avenues for efficient and convenient communication. Students must have easy access to their academic progress and internal assessment marks in education. However, traditional methods of disseminating this information, such as physical mark sheets or email notifications, often need more immediacy and convenience.

To address this issue, we present the "WhatsApp-based Students Internal Marks Reporting System," a revolutionary project that leverages the power of WhatsApp to provide students with instant and seamless access to their internal assessment marks. This system aims to bridge the communication gap between students, teachers, and educational institutions by integrating WhatsApp into the educational ecosystem. It offers a streamlined approach to reporting internal marks, making the process efficient, transparent, and easily accessible for all stakeholders.

The primary objective of this project is to enable students to receive their internal marks directly on their registered WhatsApp numbers. Students will no longer need to wait for physical mark sheets or search through their email inboxes to access their grades. The WhatsApp-based student internal marks reporting system is an innovative project that aims to provide an efficient and convenient way for schools to share students' internal marks with their parents. Leveraging the widespread usage of WhatsApp, this system eliminates the need for traditional paper-based reports or manual communication methods, enabling real-time and seamless information exchange.

The project focuses on developing a secure and automated system that integrates with existing college management software and leverages the popularity of WhatsApp to deliver internal marks to parents directly on their WhatsApp numbers. Doing so ensures that parents stay informed about

their child's academic progress promptly, fostering better communication between schools and parents.

Objectives

- **Providing timely updates:** The system can be designed to send regular updates on students' academic progress to their parent's WhatsApp numbers.
- **Simplifying communication:** WhatsApp is a widely used messaging platform, and many people are familiar with its features. Using it as a platform to send updates can make communication more accessible, convenient, and user-friendly.
- **Saving time and effort:** The automated reporting system can save time and effort for teachers and college administrators. Instead of sending reports manually to each parent. Improving parent-teacher communication.

2. Literature Survey

The impact of using WhatsApp messenger on students' academic achievement in the English language" M.F.AI-Faki (2019) The study found that using WhatsApp had a positive impact on students' academic achievement. An application of WhatsApp for online examination system" R. Priya, N. Selvi and N. Gaeta (2019). This study does not focus on an internal marks reporting system; it provides insights into the potential of WhatsApp as a platform. A WhatsApp-based learning community in an undergraduate course. Y. A. M. Azzam and M. M. A. Aly (2017) This study describes the development and implementation of a WhatsApp-based learning community in an undergraduate course.

3. Methodology

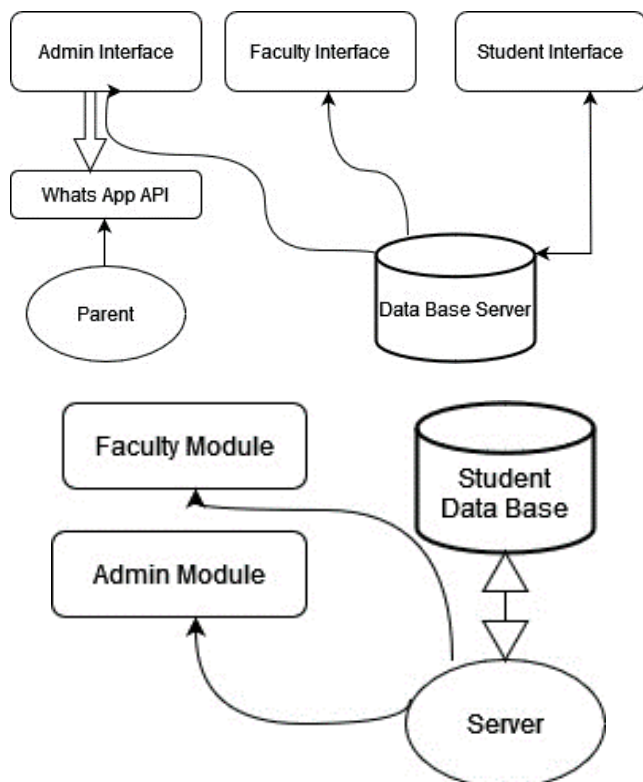


Figure 1: Architecture

The architecture follows a client-server model, where the clients (student interface, admin interface, and faculty interface) interact with the respective management systems to perform their operations. The WhatsApp integration system bridges the admin management system and the WhatsApp platform for sending marks to parents in *figure 1*.

- Student Interface: This is the interface provided to the students. Admin can register by providing their USN (University Seat Number), semester, and parents' WhatsApp number.
- Admin Interface: This interface allows the admin to manage the student's marks. They can log in, enter/update students' marks, and view students' marks.
- WhatsApp Integration: This component handles the integration with the WhatsApp platform. It allows the system to send marks to parents' WhatsApp numbers. It can utilize WhatsApp APIs or third-party services for sending messages.
- Faculty Interface: This interface is provided to the faculty members. They can view the students' marks through this interface.
- Student Management System: This system manages student-related data such as registration information, marks, and other details. It provides APIs for the student interface, admin interface, and faculty interface to interact with the data.
- Admin Management System: This system manages admin-related functionalities such as authentication, entering/updating marks, and viewing student marks. It communicates with the student management system for data operations.
- Faculty Management System: This system manages faculty-related functionalities such as authentication and

viewing student marks. It communicates with the student management system to retrieve student marks data.

- Database: These are used to store the necessary data. The student, admin, and faculty management systems interact with the respective databases to read/write data as needed *figure-2*.

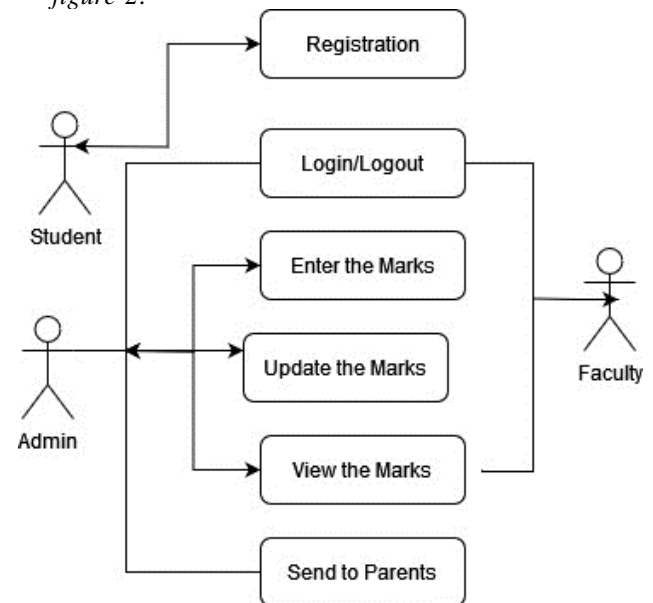


Figure 2: Usecase Diagram.

Detailed design

1) User Roles and Permissions:

- Admin: Manages the system, user accounts, and overall configuration.
- Faculty: View student marks data.
- Parents: Receive marks reports and communicate with teachers.

2) System Components:

- User Interface: A WhatsApp-based interface for admin to manage the system and enter marks data and Faculty can View the marks.
- Database: Stores student information, marks data, and user accounts.
- WhatsApp API: Integrates with the WhatsApp Business API to send marks reports to parents' WhatsApp numbers.

3) System Workflow:

- Admin: Manages user accounts and permissions. Configures system settings, such as the message template for marks reports.
- Admin register Faculty to the system using their credentials.
- Access a dashboard to enter and manage marks data.

4) Admin Management System

This system manages the admin-related functionalities such as, authentication, entering/updating marks, and viewing student marks. It communicates with the student management system for data operations.

5) Faculty Management System

- This system manages faculty-related functionalities such as authentication and viewing student marks. It communicates with the student management system to retrieve student marks data
- Database: These are used to store the necessary data. The student management system, admin management system,

and faculty management system interact with the respective databases to read/write data as needed in *figure 1-8*.

4. Results

Figure 3: Admin and faculty should login to the system

Figure 4: Admin register the faculty information

Figure 5: Admin Enter the student information such as student name, USN, parents WhatsApp number, marks, semester

Figure 6: Admin send student marks to their parents WhatsApp number.

Student ID	Username	Parent Phone	Semester	Subject	CIE	Marks	Actions
2BA20IS082	sneha	7204581356	6	CN	1	100	Phone: 7204581356 Remarks: Subject - CN - CIE - 1 - Marks: 100 Send Review
2BA20IS082	Sneha	7204581356	6	AA	1	90	Phone: 7204581356 Remarks: Subject - AA - CIE - 1 - Marks: 90

Figure 7: Faculty can view the marks.

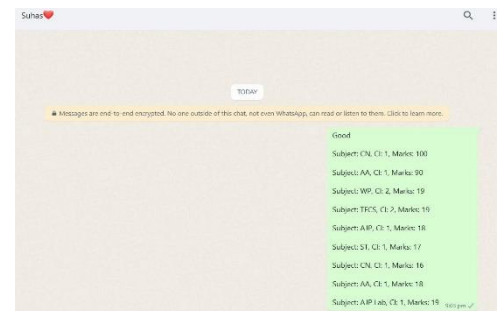


Figure 8: Message sent to parents WhatsApp number.

5. Conclusion

Developing a WhatsApp-based student internal marks reporting system to their parents' WhatsApp numbers has proven to be an effective and convenient way of facilitating communication between teachers and parents. The system successfully automated sending internal marks reports to parents, eliminating the need for manual distribution and reducing the chances of miscommunication or delays. By leveraging WhatsApp's widespread usage and familiarity, the system ensured that parents received timely updates about their children's academic performance directly on their mobile devices. This real-time communication helped parents stay informed and enabled them to actively participate in their child's education, leading to improved parent-teacher collaboration.

References

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- [2] Obtain WhatsApp Business API: Visit the official WhatsApp Business API documentation (<https://developers.facebook.com/docs/whatsapp/getting-g-started/>) to understand the process of setting up and using the API.
- [3] Integrate WhatsApp API with your backend: Utilize the WhatsApp API to send and receive messages. You can use the Twilio API for WhatsApp (<https://www.twilio.com/whatsapp>) or similar services to simplify the integration.
- [4] Develop the internal marks reporting system: Design a system that allows parents to receive their child's internal marks via WhatsApp. Implement features such

- as user authentication, retrieving and processing marks data, and sending automated messages to parents.
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