NOTIFICATION MODULE

1. Description:

The Notification Sender class is a vital component of the Notification Module package in the system. It facilitates the sending of confirmation SMS notifications to users, enhancing communication and providing important updates.

1.1 Confirmation SMS Notifications:

The inclusion of the send Confirmation SMS method in the Notification Sender module is a valuable feature that enables seamless communication with users. This method leverages the capabilities of the BulkSMS API to send SMS notifications to recipients.

To send a confirmation SMS notification, the method requires two parameters: the recipient's name and phone number. These parameters are used to personalize the message and ensure it reaches the intended recipient.

The method constructs the necessary API request data in JSON format, including the recipient's phone number, message body, and encoding. It then establishes an HTTP connection to the BulkSMS API endpoint, authenticates the request using the provided username and password (API credentials), and sets the necessary request properties.

Upon successful authentication and request setup, a POST request is sent to the API, containing the constructed request data. The API processes the request and sends the SMS notification to the recipient's phone number.

The method handles both successful and error responses from the API. In the case of a successful response, the reply text is retrieved and printed to the console, providing confirmation that the SMS notification was sent. In the event of an error response, the method displays an error message along with the associated details, allowing for troubleshooting and issue resolution.

Overall, the Notification Sender class and its send Confirmation SMS method greatly enhance the system's communication capabilities by enabling the seamless and personalized delivery of confirmation SMS notifications to users.

2. Motivation:

In today's fast-paced world, communication plays a vital role in keeping users informed and engaged. The sendConfirmationSMS method provides a convenient and efficient way to send confirmation SMS notifications to users. By leveraging the capabilities of the BulkSMS API, the system ensures that users receive important updates and confirmations directly to their mobile devices.

The motivation behind implementing this module is to enhance user experience and streamline communication processes. By incorporating SMS notifications, the system can provide timely and personalized information to users, such as confirming wallet balance deductions. This improves user trust, transparency, and overall satisfaction with the system.

The sendConfirmationSMS method takes advantage of the BulkSMS API's features and functionalities. It allows for seamless integration with the SMS gateway service, eliminating the need for complex infrastructure and management of SMS infrastructure on the system's side. This saves development time and resources, enabling the system to focus on its core functionalities while relying on a specialized service for SMS delivery.

The personalized nature of the SMS notifications strengthens the connection between the system and its users. By including the recipient's name and customizing the message content, the notifications feel more tailored and relevant to individual users. This personal touch enhances user engagement and fosters a positive user experience.

The motivation behind integrating the Notification Module with the User Authentication Module is to establish a secure and controlled communication channel with users. By verifying the user's identity and authorization through the User Authentication Module, the Notification Module can ensure that notifications are delivered only to the intended recipients.

Additionally, the error handling capabilities of the sendConfirmationSMS method ensure that any issues or failures in sending SMS notifications are promptly identified and addressed. The method provides detailed error messages and associated details, facilitating troubleshooting and resolution of potential delivery problems. This proactive approach to error handling ensures reliable and effective communication with users.

3. *Relevance to other modules:*
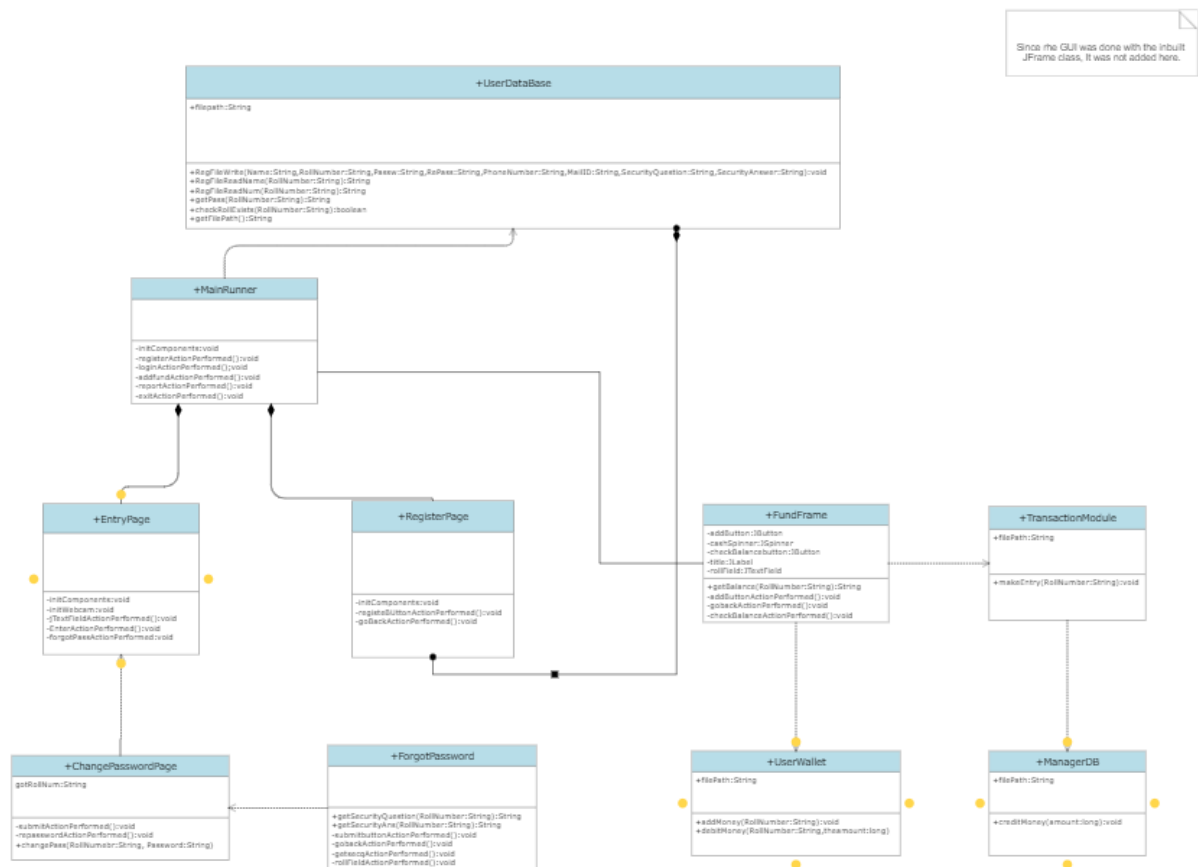
3.1 Relevance with User Management:

The Notification Module integrates with the User Authentication Module to enhance data security and confidentiality by ensuring that only authorized users receive notifications. This integration helps in maintaining the privacy of sensitive information and prevents unauthorized access to notifications.

When sending notifications, the Notification Module can access user information stored in the User Management Module. This information may include user profiles, contact details, and notification preferences. By utilizing this data, the Notification Module can personalize and target notifications appropriately.

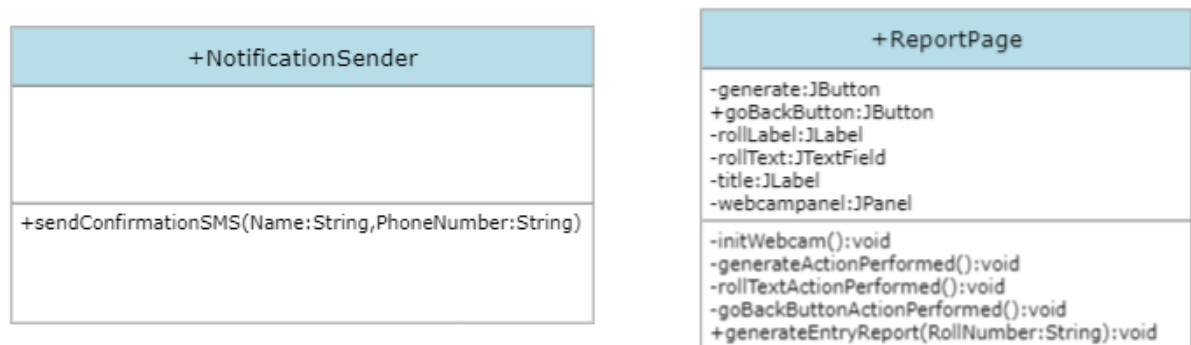The integration between these modules adds an additional layer of security to the notification process. It prevents unauthorized users from accessing sensitive information and receiving notifications intended for other users. This helps to safeguard confidential data and maintain the integrity of the system.

4. Appendix:

Class diagram of the whole project:

Class diagram of the module:

Activity diagrams of each function:

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 ●──▶ sendConfirmationSMS ──▶ Create SMS body ──▶ Prepare API URL ──▶ Open Connection
                                                                            │
                                                                            ▼
   Write request data ◀── Set request content type ◀── Set request method ◀── Set request properties
         │
         ▼
   Get response ──────▶ ◇ ──Success── Process Succesful Repsonse ──▶ ◉
                        │
                      Error
                        │
                        ▼
               Handle Error response ────────────────────────────────┘
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