

A Study on Hotel Residence Verification Using Aadhar With Biometric

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Abstract

The Hotel Residence Verification System is an all-encompassing system created to improve the procedure for confirming hotel guests' identification and guaranteeing a safe and quick check-in process. The system has a mobile application for customers to book hotels as well as a web application for administrators and hotel authorities. During the booking procedure, users must use their Aadhar card, an exclusive form of identification in India, to confirm their identity. The Hotel Residence Verification System's main goal is to improve security and authentication procedures in the hotel business while giving visitors a smooth user experience. The technology ensures that only legitimate and verified guests are accommodated by incorporating Aadhar card verification into the booking process, minimising the possibility of fraudulent activities and improving overall security. The Hotel Residence Verification System provides hotels with a complete solution to verify visitors' identity and speed up the check-in procedure. Aadhar card verification is integrated into the mobile application, which improves security while giving users a smooth and comfortable experience. The technology aids the hotel sector's initiatives to improve guest verification procedures, lessen fraud, and provide a safe and secure environment for all visitors.

Keywords: Hotel verification, Aadhar, Security, Web, Mobile application

1. Introduction

The hotel sector is continuously changing, with a focus on seamless guest experiences and security. By introducing a reliable identity verification method for hotel visitors, the Hotel Residence Verification method seeks to improve the check-in procedure. Along with a Smartphone application that enables customers to book hotel rooms by authenticating their Aadhar card, an exclusive identification card in India, this system integrates a web application for administrators and hotel authorities.

The Hotel Residence Verification System offers customers a quick and easy check-in procedure while addressing the demand for enhanced security and authentication protocols within the hotel industry. Aadhar card verification is made possible during the booking procedure. The method makes sure that only verified, lawful guests are accommodated, lowering the possibility of fraud and boosting overall security measures.

To manage guest information, room bookings, and verification procedures, the system comprises of a web application created for administrators and hotel authorities. Administrators have access to a thorough dashboard where they can check guest information, control room availability, and track the status of guest verification. In order to ensure smooth operations, hotel staff can update room statuses, monitor visitor arrivals and departures, and work with the administration. The Smartphone application offers a user-friendly interface where visitors can look up hotels, see what rooms are available, and book them. Users are asked to scan their Aadhar card as identification during the booking process utilising the mobile application's built-in scanning functionality. This verification process increases security and lessens the chance of unauthorised access by ensuring that only people with legitimate identity may proceed with the booking. The Hotel Residence Verification System makes use of cutting-edge technologies to streamline check-in and enhance security measures, including Aadhar card verification and mobile application integration. The system's dependency on manual verification procedures is decreased, errors are reduced, and overall efficiency is increased by implementing Aadhar card verification.

2. Literature Review

One Kamta Nath Mishra In addition to fingerprints, iris, face, and palatal patterns, smartcards also contain DNA sequences and palatal patterns that can be used to identify a deceased person, but fingerprints, iris, and face can also be used to verify a person's identification while they are still alive. The usage of smartcards as one of the most practical and trustworthy types of electronic identity verification systems is currently very widespread. We can create a trustworthy system of personal identification by integrating biometrics into the host. As a result, disputes and issues with the protection of intellectual property rights may be avoided. Governmental bodies in Europe and the United States have so chosen to incorporate digital biometric data in future ID documents. [1,2] Recently, biometrics and digitalization technology have been used to increase the legitimacy of traditional watermarking methods. Digital watermarking and biometric identification have been used to address access control and authenticity verification systems. We can create a trustworthy system of personal identification by integrating biometrics into the host. As a result, disputes and issues with the protection of intellectual property rights may be avoided. Governmental organisations in Europe and the United States have so opted to incorporate digital biometric data in future ID documents. Dr. K.Ravikumar and others [3] One of the various techniques that may be used to verify and authenticate people is face recognition technology inside biometrics. This surveillance and security technology is used by all three parts of government, law enforcement, and the business sector to monitor and manage access. It currently has a wide range of applications, and undoubtedly, new ones are continually being found. In this study, we create a facial recognition system that allows users to be recognised and verified using their Aadhar credentials. Bhagwan Chowdhry and others [4]. In this article, we discuss India's ten-year experience creating a digital identity. Surprisingly, 1.25 billion Indian citizens now have a digital identification called Aadhar, a 12-digit random number connected to each person's biometrics. We go over the available technology, the infrastructure requirements, the costs, the advantages, the political trade-offs, the arguments that this

deployment sparked about financial inclusion and exclusion, as well as the development of data and privacy concerns and the laws that are in place to safeguard them. We also go over some survey data on Aadhar's effects as well as some scholarly empirical research. Including Raja Siddharth Raju [5]. The breadth and benefits of connecting Aadhar cards to other systems are covered in this article, which also provides a brief overview of the Aadhar card. We also list some scenarios when using an Aadhar card could put your security at risk. This report also includes the Supreme Court of India's opinions before discussing the flaws in the current system. Methods: Based on case studies, research articles from reputable media, and observations from the Supreme Court of India, we conducted a literature assessment and divided the instances into three groups. Conclusions: One of the key initiatives in India to spread the global trend of technological innovation is the Aadhar project. The interoperability of diverse e-governance features was the main emphasis of this project's introduction in order to guarantee the best possible utilisation of the information, communication, and technology infrastructure. To this end, the Indian government recently mandated Aadhar cards for numerous applications to the government and encouraged Aadhar-enabled transactions. Usama Bashir Mir and others [6] Focus on personal digital identities is becoming more and more important as levels of digital transformation rise. Information gathered about the citizen's identity is what determines their identity. Determines which goods and services a person is able to use and access. Around 1.1 billion people worldwide still do not have a formal identification, and the United Nations has urged states to provide their people distinctive identities by the year 2030 in its 16th Sustainable Development Goals (SDGs). Subhashis Banerjee and coworkers [7] Though the Supreme Court has yet to rule on the legitimacy of Aadhaar¹, it is plainly evident that the majority of use cases for Aadhar-based biometric authentication (ABBA) have proven to be extremely problematic. Many have argued that the idea behind using biometrics as an authentication factor is faulty. Biometrics are vulnerable to fraud because they are not private information. Authors: Kumar H. Naveen et al. In India, the degree of financial marginalisation is severe. Almost half of the population now lacks access to banking. One of the most crucial criteria for the currently excluded category is financial service. The provision of national portability of identity of the migrant population, which would give them access to essential services like banking and telecom services, plays a crucial role in the financial inclusion by extending the delivery of financial services to the currently excluded.

3. Method

3.1 Methodology

By using this methodology, the Hotel Residence Verification System may be created, offering administrators, hotel staff, and visitors a safe and effective procedure. The technique makes that the solution satisfies the needs of all parties involved, incorporates Aadhar card verification, and provides a smooth user experience across web and mobile applications.

1. **Requirement Analysis:** Analyses the requirements for the Hotel Residence Verification System in depth. Understanding the requirements of administrators, hotel authorities, and

visitors is necessary for this. Name the essential functions, such as user authentication, Aadhar card verification, room administration, and booking capabilities.

2. **System Design:** Create the web application's architecture and user interface for use by administrators and hotel authorities. To visualize the application's flow and interactions, create wireframes and prototypes. Create the user interface for the mobile application so that users can search for hotels, Check availability, and book rooms.
3. **Database Design:** Create a database structure to record information about visitors, accommodations, and verification progress. To enable effective data retrieval and storage, establish the proper linkages between entities.
4. **Web Application Development:** Create the web application for administrators and hotel management using visual.NET code.
5. **Mobile Application Development:** Create a mobile application for Android that allows users to look for hotels and reserve rooms.

The Hotel Residence Verification System offers hotels a complete way to verify visitors' identity and speed up the check-in procedure. Aadhar card verification is integrated into the mobile application, which improves security while giving users a smooth and comfortable experience. The solution is in line with the hotel sector's dedication to strict guest verification procedures, reducing fraud threats, and guaranteeing a secure environment for all visitors.

Figure 1 demonstrates how the UIDAI online portal's XML file, which transmits HTTP requests and responses using servlets, processes the aadhar verification using number at the server end by comparing the aadhar number to the hash value [1].



Fig 1: Aadhar Verification process using aadhar card number.

Fingerprint and iris scans are among the biometric information required to verify Aadhar identities. Biometric data is gathered and associated with an individual's Aadhar number during the Aadhar enrollment process [1]. The UIDAI's database safely houses this biometric information. The individual presents oneself at an authorised Aadhar enrollment centre, where their biometric data is recorded, as seen in Figure 2. This entails employing specialised

equipment to scan their fingerprints. The person exhibits their fingerprint when a verification or authentication request is made [4].

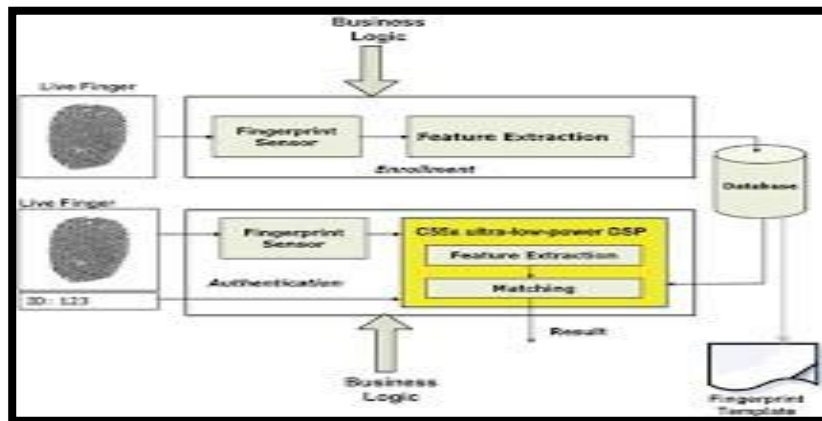


Fig 2: Aadhar Verification using Biometric

4. Implementation

Algorithm to implement Hotel Residence Verification

Step1: Initialize the web application for administrators and hotel authorities.

Step2: Display the dashboard with options for managing guest information room bookings, and verification process.

Step3: Initialize the mobile application for users.

Step4: Load and display the login or registration page for users.

Step5: Authenticate the user's credentials or facilitate user registration.

Step6: If the user selects "Search for Hotels":

- a. Retrieve the list of available hotels and their details from the database.
- b. Display the hotels, including location, amenities, and room availability.
- c. Allow the user to select hotel for booking.

Step7: Repeat steps 5 to 6 as long as the user performs tasks.

Step8: Verify Aadhar number and Biometric of user

Step9: If Aadhar and biometric == Template

Verification Successful

Else

Repeat Step 5

Step10: Terminate the applications when the administrator, Hotel or user chooses to log out or exit

Flowchart

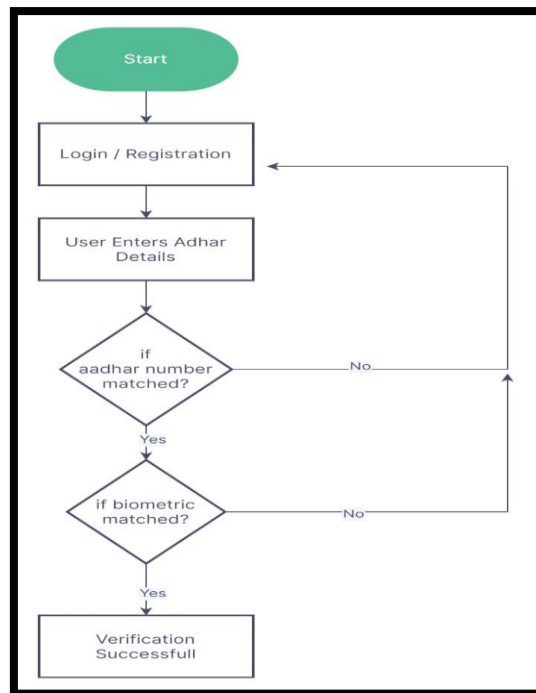


Fig 3: Flow chart on verification process of user using Aadhar

5. Results and Discussions

The process of verifying hotel guests' identities and ensuring a secure and efficient check-in process. The system includes a web application for administrators and hotel authorities and a mobile application for users to book hotel rooms. The below Fig.4 represents the login page of the users. Users are required to verify their identity using their Aadhar card, a unique identification during the booking process.

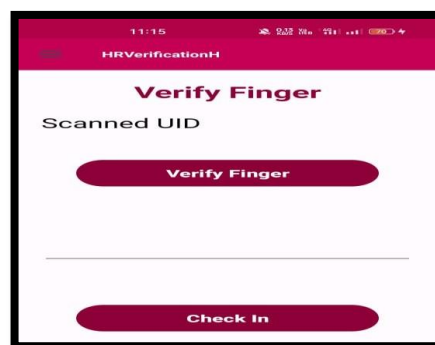


Fig 4: Verifying of Fingerprints

The below Fig.5 represents the check-in process of the user's needs to add the details of their name, mobile and Aadhar number for security purpose and hotel manager will allot the room for the users.

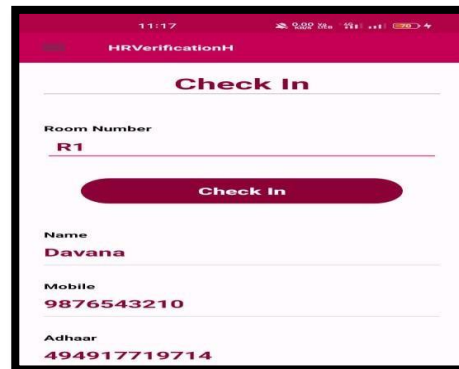


Fig 5: Details of the User's

The below Fig.6 represents the biometric is used for Aadhar verification includes fingerprints during the Aadhar enrollment process, an individual's biometric information is collected and linked to their Aadhar number. The biometric data is securely stored in the UIDAI's database. Biometric data access the individual presents themselves at an authorized Aadhar enrollment center where their biometric data is captured. This involves scanning their fingerprints image using specialized devices.



Fig 6: Verified Fingerprints

6. Conclusion

With its integrated web and mobile applications, the Hotel Residence Verification System offers a novel way to guarantee speedy and secure check-ins while boosting the overall guest experience. The technology accelerates the process of reserving hotel rooms by using a mobile application for customers and a web application for administrators and hotel authorities to confirm Aadhar cards, an exclusive identification card in India. The solution intends to improve hotel security and authentication procedures while giving visitors a simple and convenient experience. Administrators and hotel staff can efficiently manage guest information, room reservations, and verification procedures thanks to the web application. They may check customer information, keep track of verification progress, and update room availability, assuring efficient operations

and better customer service. Hotels may improve their guest verification procedures and increase the safety and security of both their visitors and their facilities by installing the Hotel Residence Verification System. The solution lessens the need for manual verification, reducing mistakes and streamlining processes. The check-in process is quick and easy for guests, who may safely reserve rooms using their verified Aadhaar cards. This saves time and ensures a smooth arrival process.

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