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AI-Enhanced Donation Management System

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Abstract: In today's world where wastage of essential items is a problem and needy people suffer because of it, people want to donate but lack a platform which works as a bridge between NGOs and Donors.

In this paper, we are introducing an AI-Enhanced donation management system which is easy to use and reliable for the donation of food, medicine, clothes, books and toys. Our system has dedicated dashboards for NGOs as well as donors for clear communication. We used Optical Character Recognition for scanning medicine expiry date and batch number, FAQ Chatbot for easy donation instruction, and Geolocation for tracking nearby NGOs.

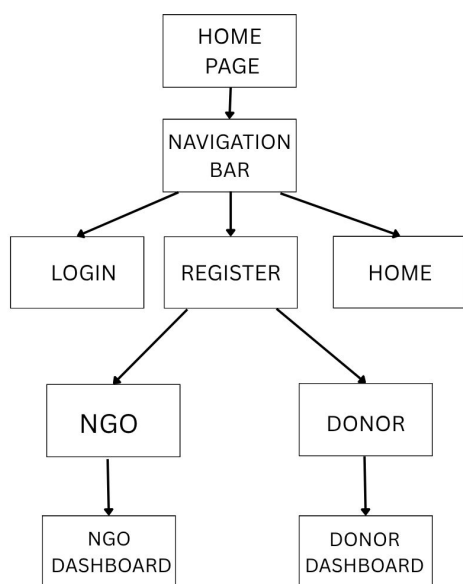
Keywords: Donation Management, Optical Character recognition, Donor Impact Tracker, FAQ Chatbot, Artificial Intelligence, Geolocation, Online Donation

I. INTRODUCTION

On a daily basis a large number of necessities like food, clothes, medicines, books and toys goes to waste and doesn't reach to the people who need them the most. Donors want to help but they lack realtime information about certified NGOs. NGOs can't reach genuine donors. This platform helps to connect donors with NGOs for a safer donation management. We integrated AI to this platform to make it smarter for donation handling and easier for the donors as well as NGOs. On this platform NGOs can list needs and donors can donate to them. Donors can manage their donations through donor dashboard. The NGOs can list emergency donations and emergency alerts will be visible on the donor dashboard. We made this platform to decrease the gap between donors and NGOs who want to help needy people.

II. METHODOLOGY

For the core, we utilized the MERN stack which is modern and flexible tech: The frontend and backend is built with React, Javascript and modified CSS to create a smooth, user-friendly interaction. For the backend we used Node.js and Express, for handling APIs and server operations. All user and NGO and donation data is stored on the database; i.e MongoDB.



We introduced an AI chatbot to help people navigate the platform and answer common questions. Additionally, an OCR component that reads and verifies information on drug packages, better securing health-related donations.

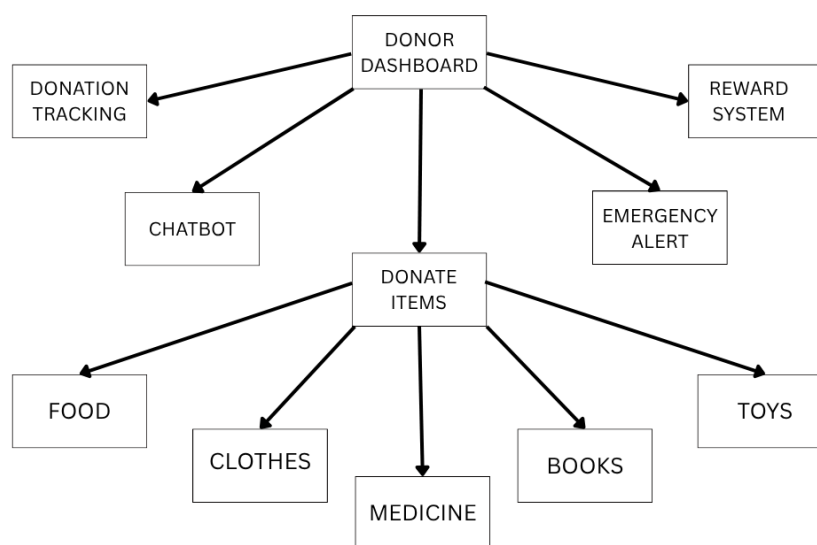
Real-time pickups and deliveries can be tracked using geolocation feature for NGOs and donors. There is a reward system in place, after every third donation you receive a coupon as appreciation gift. NGOs can put out emergency alerts that donors see right away.

Here's how it operates:

- 1) Both NGOs and donors sign up and get access to their own dashboards.



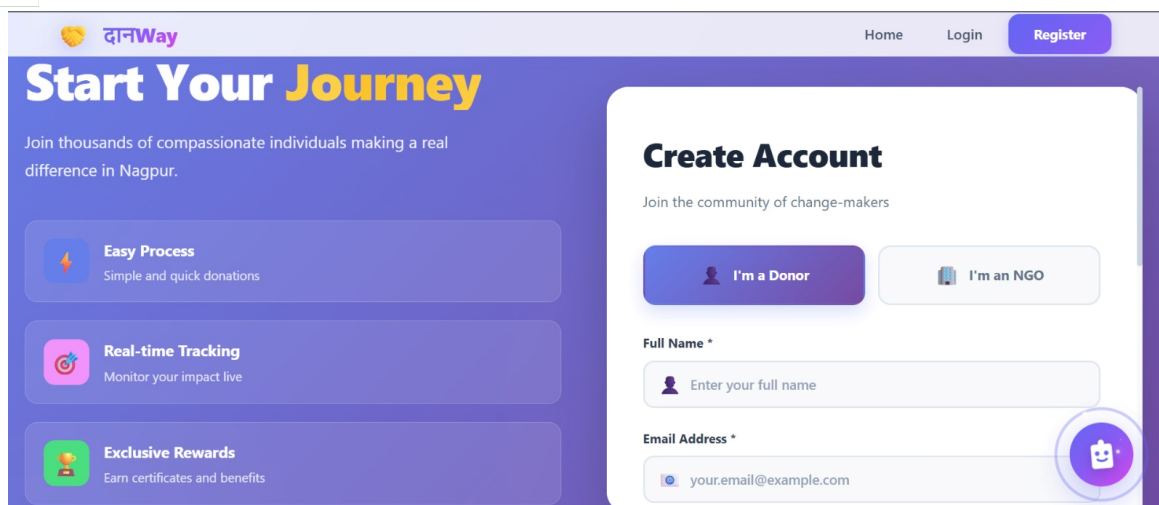
- 2) NGOs list what they need or highlight emergencies.
- 3) Donors select which NGOs they want to help and specify what they're donating.



- 4) The system uses OCR to verify medicine donations and logs everything securely.
- 5) Geolocation keeps everyone updated on where donations are.
- 6) Donors receive acknowledgments and rewards as they continue giving.

III. RESULT AND DISCUSSION

Our AI-Powered Donation Management Platform combines the capabilities of today's technology and is transforming giving to be easy, smart and even fun. Through the use of AI, OCR, and geolocation we bring a secure and transparent way to work together with NGOs and donors. The inbuilt incentive structure provides motivation to keep participating. In the future, we are continuing to integrate blockchain for added transparency, supporting more languages in our chatbot and using AI to predict trends and needs surrounding donation.



दानWay Home Login Register

Start Your Journey

Join thousands of compassionate individuals making a real difference in Nagpur.

- Easy Process**
Simple and quick donations
- Real-time Tracking**
Monitor your impact live
- Exclusive Rewards**
Earn certificates and benefits

Create Account

Join the community of change-makers

I'm a Donor **I'm an NGO**

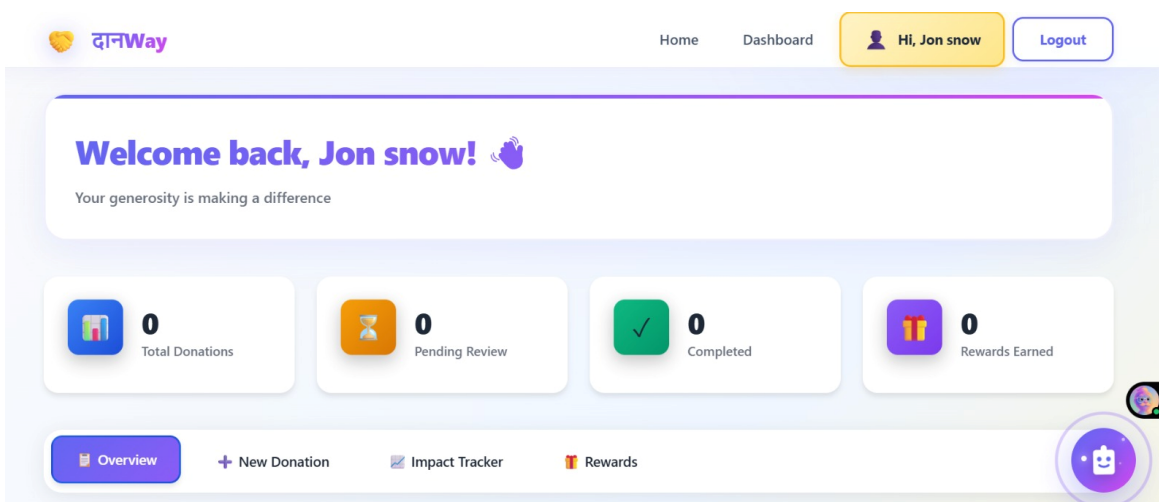
Full Name *

Enter your full name

Email Address *

your.email@example.com

Fig. 1 Registration



दानWay Home Dashboard Hi, Jon snow Logout

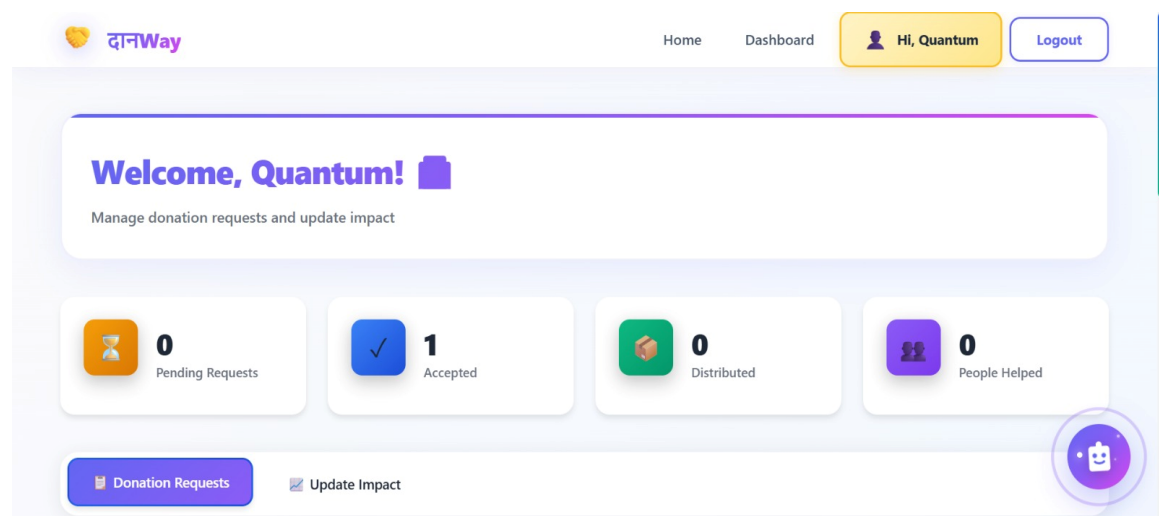
Welcome back, Jon snow!

Your generosity is making a difference

- Total Donations** 0
- Pending Review** 0
- Completed** 0
- Rewards Earned** 0

Overview + New Donation Impact Tracker Rewards

Fig. 2 Donor dashboard



दानWay Home Dashboard Hi, Quantum Logout

Welcome, Quantum!

Manage donation requests and update impact

- Pending Requests** 0
- Accepted** 1
- Distributed** 0
- People Helped** 0

Donation Requests Update Impact

Fig. 3 NGO dashboard

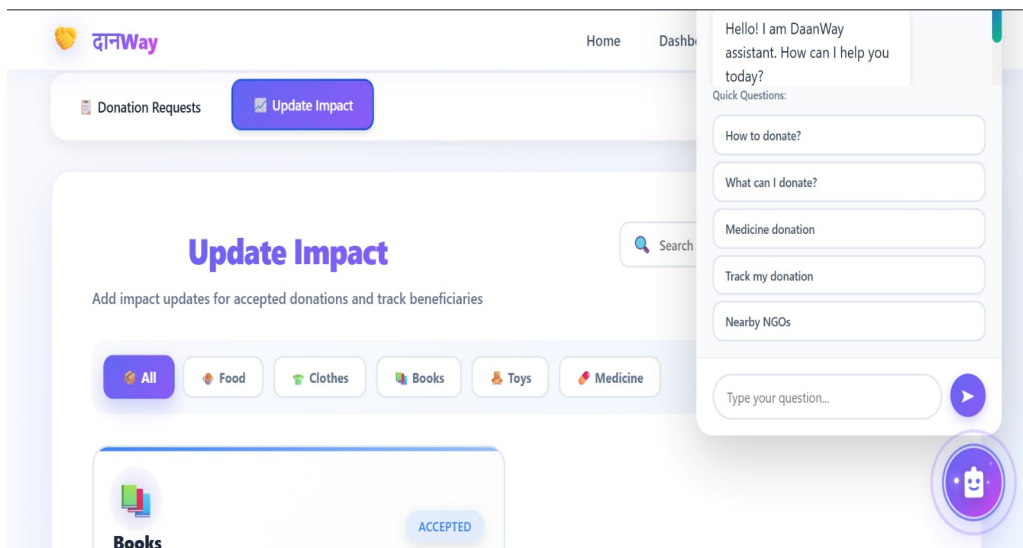


Fig. 4 Impact Tracker and chatbot

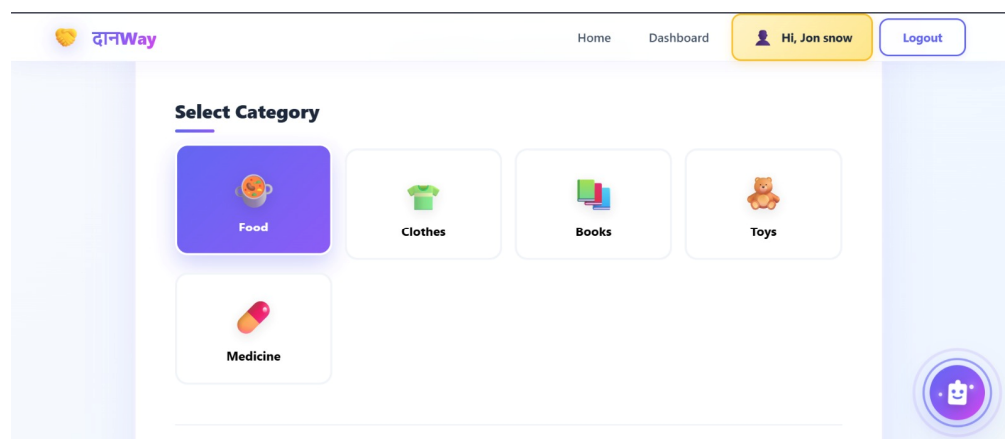


Fig. 5 Multiple categories of donation

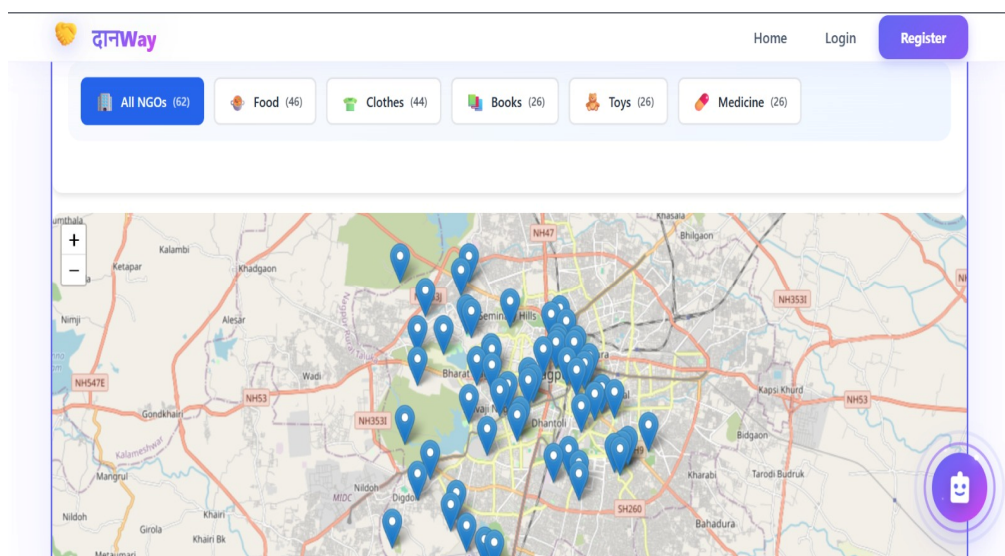


Fig. 6 Geolocation for tracking NGOs

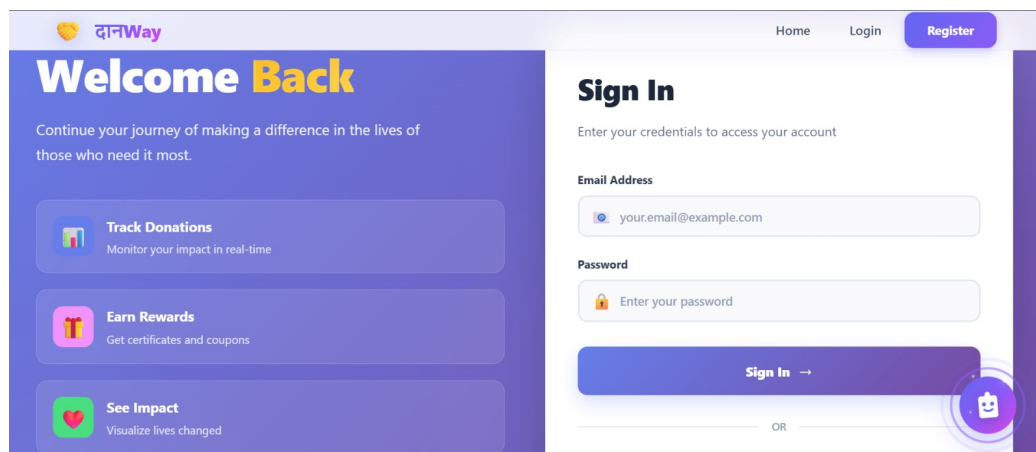


Fig.7 Sign In for NGO and Donors

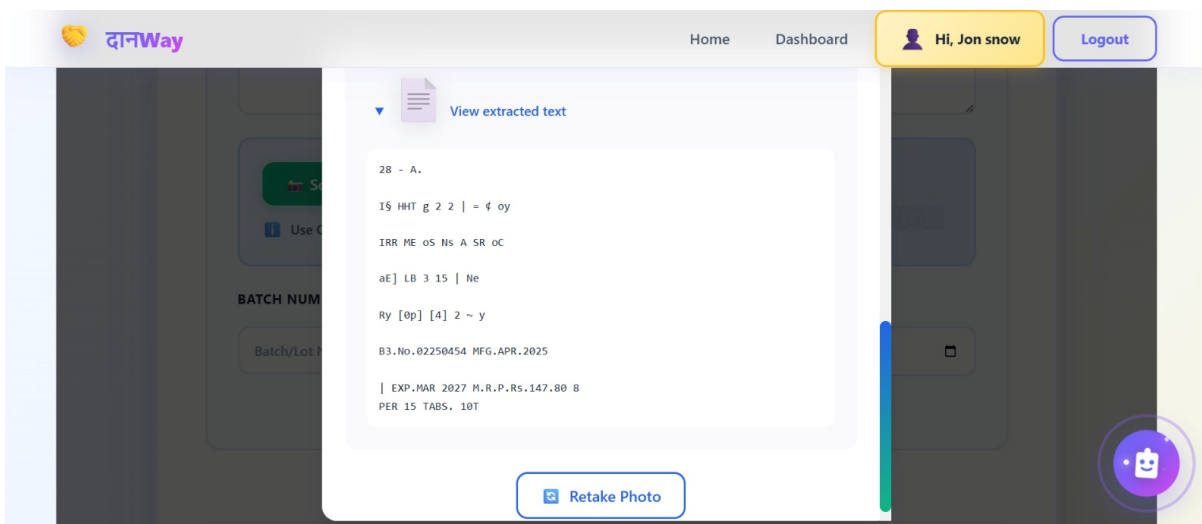


Fig. 8 OCR for Medicine Scanning

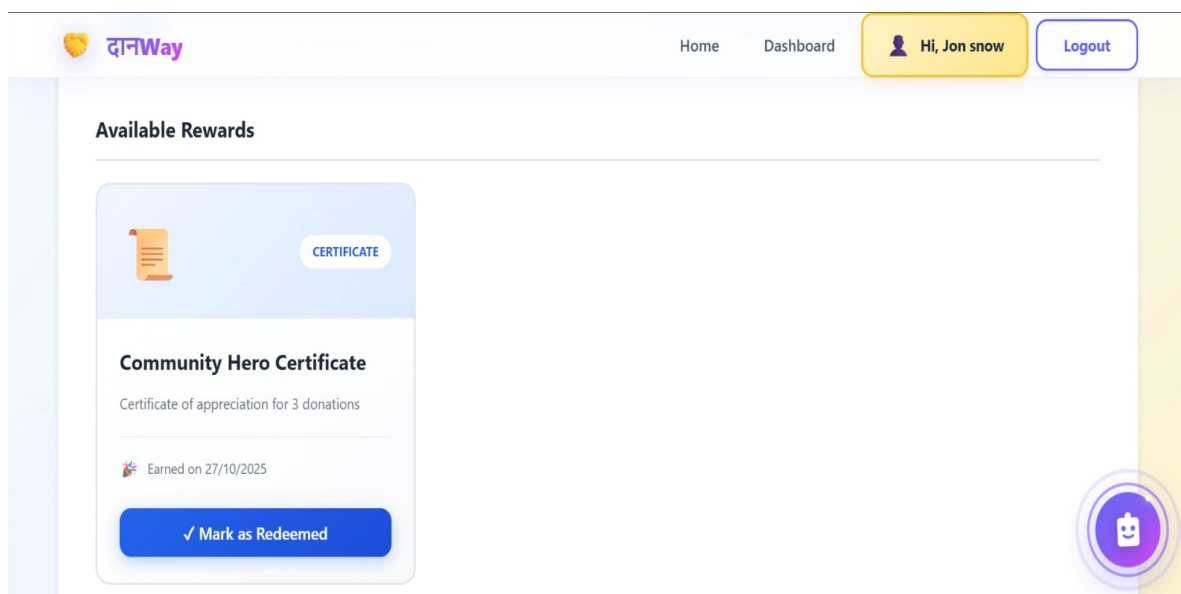


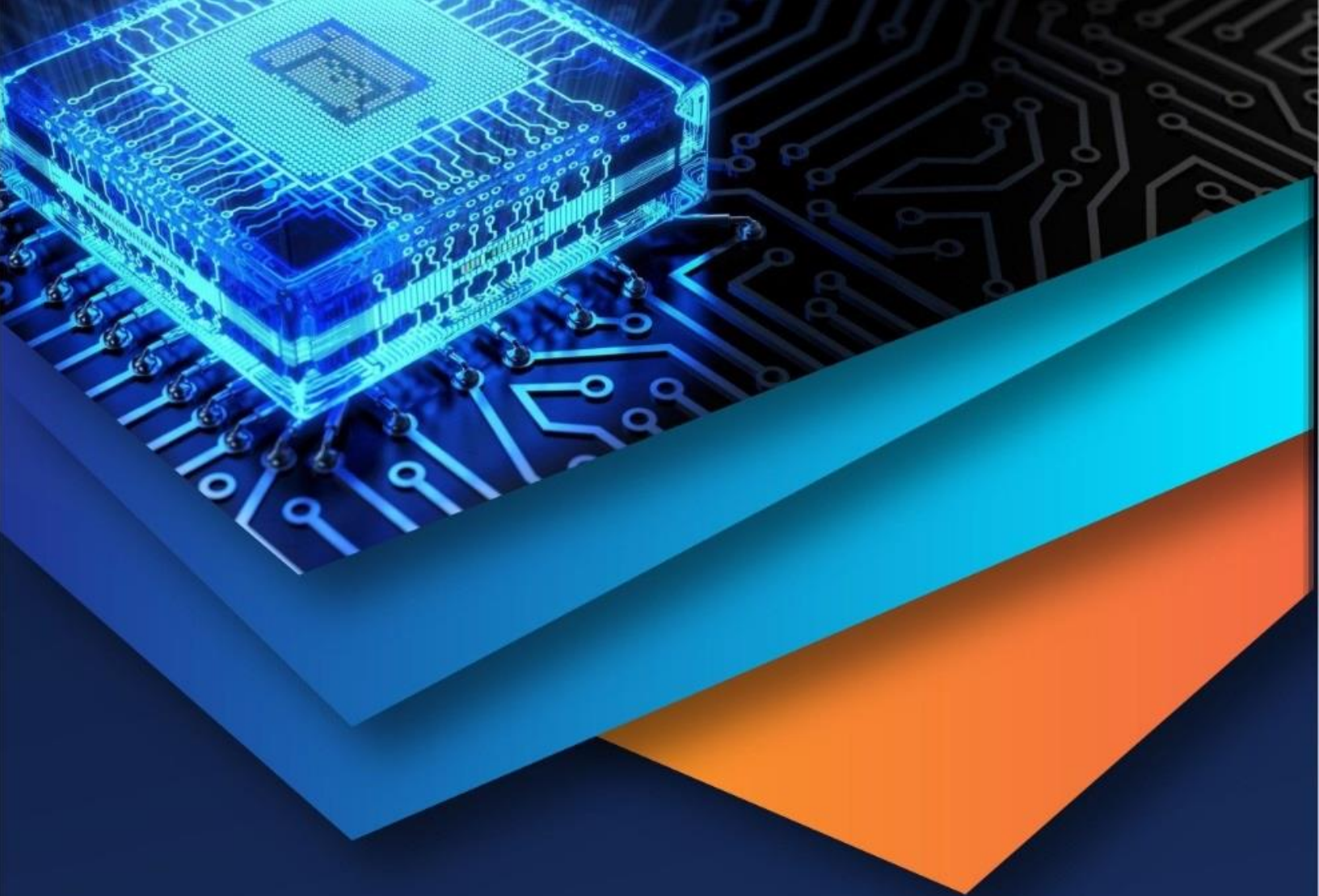
Fig. 9 Reward System after every 3 successful donation

IV. CONCLUSION

AI-enhanced donation management system brings together the best of modern technology to make giving simple, safe and more rewarding. By combining AI, OCR and geolocation, we offer a secure and transparent way of the collaboration of NGOs and donors. The reward system encourages donors to donate more. Looking ahead we plan to add blockchain for transparency and multilingual support. We conducted a dry run of our system with multiple NGOs and donors, and observed: The dashboards are simple and intuitive for everyone to use. The OCR system in the medicine information was more accurate (over 95%). The AI chatbot was designed to handle common questions, so support staff wouldn't get bogged down. It was our way of rewarding to share more often. Real-time geolocation tracking instilled trust, being able to see where the donations were at all times. In general the platform was stable, scalable and helpful for both NGOs and donors.

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