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## **Web Based Application for Unused Medicine Donation – MedDonate**

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### **ABSTRACT—**

A fundamental gift from science to people is medicine. But occasionally, people are unable to fully benefit from this gift of science. This could be the result of a lack of funding or a shortage of medications. This application is about gathering unused medications from patients who completely recover from their illnesses, rendering any remaining prescriptions useless. Those medications can then be gathered and used for further good deeds. NGOs, individuals, or hospitals who are certain about the prescriptions can use this extra medication. The use of this entry will also result in less medication waste. The purpose of this project is to set up an online platform for collecting unused medications that can then be distributed to those in need. This project will concentrate on gathering unused medications from patients who have fully recovered from their illnesses and are no longer in need of them. Then, people and organizations can receive these medications and either use them for their own medical needs or donate them further. By properly utilizing unused medications, this strategy can help lower the cost of providing national health services and enable those who cannot afford these medications to receive better medical care.

*Keywords— medicine donation, online medicine donation, web- based unused medicine donation, web-portal for donation of medications.*

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### **I. INTRODUCTION**

In the human race, life is a crucial issue. Many people have experienced health issues recently. The provision of health care is a necessity in developing nations. People in developing countries have limited access to medical facilities due to a shortage of doctors and paramedical staff. As a result, those countries have a high demand for healthcare. One of the developing nations is India. In the private sector, India has established public health and raisin organizations. Additionally, the availability of healthcare services in India after the merger is crucial: India is a very populous nation. By 2021, India will have a population of about 1.38 billion people.

The World Health Organization estimates that there are 1.34 doctors per 1,000 Indian citizens (W.H.O). People's well-being and the nation's poverty are eradicated by poverty, which also raises concerns about public health. India's total population is estimated to be 6.7% below the poverty line (the mean income of 2 USD every day). Because the majority of those participating in these competitions are unable to afford health care. For most of them, it is the most important factor besides the "drug dosage". Because of this, they cannot afford high- quality medical services and medications, which leads to a variety of illnesses and the loss of many lives.

People in extreme poverty who use our application are able to afford a variety of necessary medications and retain those medications for future use. Here, our goal was to develop a web application that would aid in the collection of unused medications from donors, as well as offer assistance to those with limited financial resources or who are unable to pay for quality healthcare. Accredited doctors could also recommend specific medications for this site's low-income users.

Based on the results of the survey we conducted, we can infer that 86.9% of respondents agreed that there should be a reliable website where people can donate their unwanted or unused medications. They also found our portal to be a reliable website, and they were willing to donate their medications there in order to assist the needy or underprivileged by providing them with medication. For these reasons, we developed this website.

People frequently have questions about the expiration dates of medications, so we also made the decision to add an expiration date validation check to the portal itself. As a result, we are requiring that medicines have valid expiration dates (5months from date of registration).

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### **II. PREVIOUS WORKS**

This section of the literature study presents some facts based on the speculative research of numerous authors who contributed to this area. Many websites have given money to help pay for the poorest people's medical research and treatment costs, including MESCO Social and Environmental Management

Organization. Give India was founded on April 28, 2000, with the belief that equality of opportunity is the basis of civilization. Regardless of their circumstances, everyone should have the same chance to succeed in life.

This is untrue, though. India's diverse economy grew at a rate of 10.91% in 2016–17 as opposed to 8.50% in 2015–16. With a growth rate of 9.5% compared to the Asian growth rate of 7.5%,

India has also produced a high percentage of the most expensive individuals. 33 million children do not attend school and engage in various forms of child abuse, 350 million Indians continue to face the issue of open evacuation due to the lack of sanitation facilities, and nearly 18,000 million villages in India still do not have access to water storage facilities. Additionally, 36% of children in India under the age of five are malnourished.

Give India wanted to alter this diversity. They accomplish this by bringing together those who wish to donate and charitable organizations. India is a populous nation, and we value our people highly. We will be able to resolve our issues if each of us pledges to assist. We can be sure enough that as a society, if we are pursuing a way of life, we will need support.

Friendship NGO, Donate - Saving to help or radically better life.

- Friendship NGO: A vision of a world where everyone has an equal opportunity to live with dignity and hope, especially those who are hard to reach and unspoken, guides the friendship movement in social work around the world. The Social Purpose Organization (SPO) is a group that works to solve social issues while putting the needs of the communities it supports first. The concept of friendship hasn't changed much over the past 20 years, but it's now more crucial than ever in a world where challenges like exclusion, environmental hardship, extreme poverty, inequality, and injustice are on the rise. By giving users (donors and receivers) simple user interfaces and streamlining the donation process, we hope to eliminate the aforementioned issues and encourage as much interaction as possible between donors and receivers.

Author & Year	Paper	Contribution
Saurabhi Nagdeote. 2021 JETIR May 2021, Volume 8, Issue 5	Online Medicine Donation System	The application helps the user to donate unused medicines to NGO. In this organization there are three person namely, Admin, NGO and User. Admin will login and manage users by deleting and blocking the users providing improper or expired medications. Admin also has consultant to like the appointment asked by NGO.
Prof. Sunil Sangde. IJARSCT Volume 2, Issue 2, February 2022	Unused Medicine Donation System for NGOs	The website will be made so that the user can donate the unused medicine to NGO. That NGO can help needy people. The user can donate the medicine. The proposed system will also ask the user for the images of the medicines that he/she wants to donate so that there will be no further confusion on NGO side.
Shubham Kumar. International Journal of Computer Applications Volume 184 No.15, June 2022	An Online Web Portal for Donating Unused Medicine to NGOs	Sponsors may hand out their medications via this web-portal and registered physician could recommend medications to the patients who cannot afford these expensive medications. Participants in our program are providers of pharmacists, recipients who will receive free medicine.

Fig 1: Literature Review of previous works

### III. THE PROPOSED SYSTEM

In the following section, we will talk about the designing and building of our web application. We are following two consecutive steps which comprise of: -

- Develop the overall donation structure.
- Develop a web site.

#### A. Theory Design

This section focuses on our program's conceptualization, which is an example of a program that serves as the fundamental idea that can be used to replicate and comprehend our program. The web-based program would serve as a conduit for the delivery of medications to those in need between authorized sources and users. Through this web-portal, sponsors can distribute their medications to patients who can't afford the pricey ones. NGO's, individuals, or service providers must register on our web portal, where the system will validate the account and the data submitted by the user.

In the registration process:

- Name (Organization/ Individual)
- Address of Residence

- Contact Number
- Email for Registration
- Password

of the users will be mandatory.

Conceptual flow described would look like:

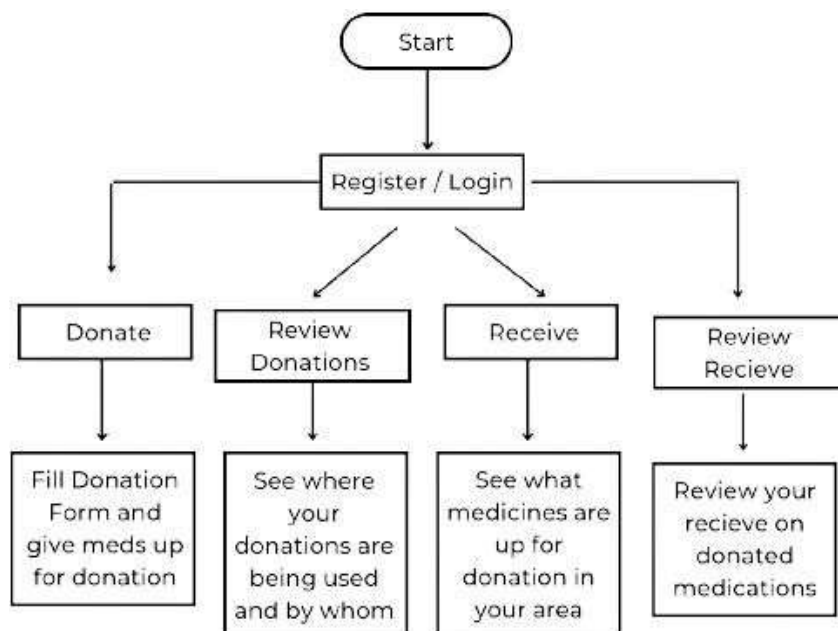


Fig 2: General flow of the project

Additionally, a user can ask for any medication they require. They are given the ability to search for medications geographically. Users have the freedom to select based on their location by entering a location in the search box, and the corresponding medications that are available for donation there will then appear. As a result, the program will satisfy participants' needs.

As we have the earlier-mentioned problem, which is as follows:

- Loss of labor force
- The exorbitant cost of medications
- Finding those in need is challenging.
- Challenges using donated medications.

Our suggested methodology is meant to bring about some significant system changes, such as:

- Assist many people with unstable finances.
- Assistance with keeping track of medications.
- Contribute to improving people's wellbeing.
- Support the maintenance of community harmony.

#### B. Web-application Development

The portion of the medicine donation portal construction process is shown in this section. The development phase is divided into three sections as follows:

- Back-end and Server
- Authentication and Security
- User Experience and Front-end

The image below illustrates the project's intricate architecture:

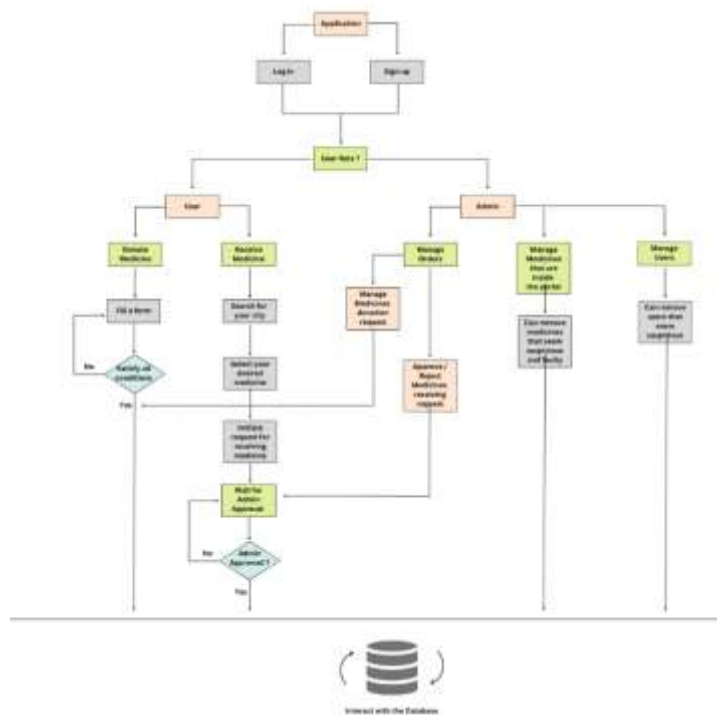


Fig 3: Detailed architecture

- *Back-end and Server*

In order to use the database on the MySQL server interface, we first prepared a look of user JSON object database recipients in accordance with the portal's requirements. We then used the database with enough security measures to prevent external unauthorized access.

We used two separate logins (administrator and user) for our portal's privacy and security so that anyone else cannot access or modify the configuration of the control panel. The control panel keeps the entire system in check and up to date by verifying that the program was delivered based on the user record.

User role can do donation / receiving of medications as per needed. Administrators can review the portal's overall donations and receiving logs and can also delete some of them if they are thought to be suspicious.

- *Authentication and Security*

To access the portal services, all users must first register. The registration will only be successful after the required information has been verified and validated.

We have used the standard HTTPs authentication method, which authorizes a strong user password that is encrypted and verified by the email address with an encrypted quote. Until the existing user logs out of the portal or the system is unavoidably removed after the precise time the session is over, session authentication-based user login and access will be validated. As a result, we work to make our web portal more dependable and secure for the current users in order to enable these types of significant security features.

Input validation has also been used to ensure better and more accurate registrations, such as the requirement that no one enter an email address without a domain name or a contact number with fewer than ten digits. Additionally, user input is sanitized (escaped of special characters) wherever it is taken into account to guard against attacks like XSS (Cross-site- scripting) and others.

- *User Experience and Front-end*

Our web portal offers secure access to allow users to personalize their information, and the portal's content changes depending on the user's preferences (Admin / User). Whether the user is an admin or a public, the portal will display the content according to the login information.

To make it simpler to access the actual user, it has user-friendly compatibility with a number of devices and browsers. We have used the MERN stack, which stands for MongoDB, Express, React, and NodeJS, except for the database part we have implemented SQL database MySQL as the requirement of the project demanded a SQL based relational database approach, throughout the development lifecycle. ExpressJS is an open-source framework for building web applications written in JavaScript, and ReactJS is a JavaScript library for building user interfaces. Due to its adaptability and scalability, as well as its simplicity in modification and data retrieval, MERN has been used by us.

In order to write scalable CSS and enhance the user experience of our web application, we have also integrated the support of SASS (scss). Additionally, we've made our app user-friendly on mobile devices. Users of mobile devices can access all features without experiencing any user experience loss.

## IV. RESULTS AND DISCUSSIONS

Through this application, those in need will have access to an online platform for the distribution of drugs and unused medications. Users can act as either a donor or a receiver in this instance, as was already mentioned.

In order to manage the application's overall flow and obtain special permissions for particular activities, admin views are also developed. It is primarily used to track user donations and requests, and the administrator is empowered to delete any requests that don't seem right or look suspicious.

Using SASS, we primarily focused on optimizing mobile and tablet screens while creating this application, in addition to the desktop view (.scss). This step was crucial because the majority of users prefer using mobile devices to access websites, which would maximize user engagement with our application.



Fig 4: Homepage



Fig 5: Login / Register Page

Here the users can register / login and access the functionalities of the portal.

When a user successfully authorizes their way into the application, this page loads (by signing in or registering). Four essential features are functionalized by this dashboard:

1. Giving a medication.
2. Benefiting from a medicine that was donated.
3. The previous transactions page, where you can manage and view every transaction (money-less) of a medicine you've given or received.
4. Profile page, which is the user's profile page and contains all relevant data about the user. This is viewable and editable so that it is always current.



Fig 6: Dashboard after login / signup

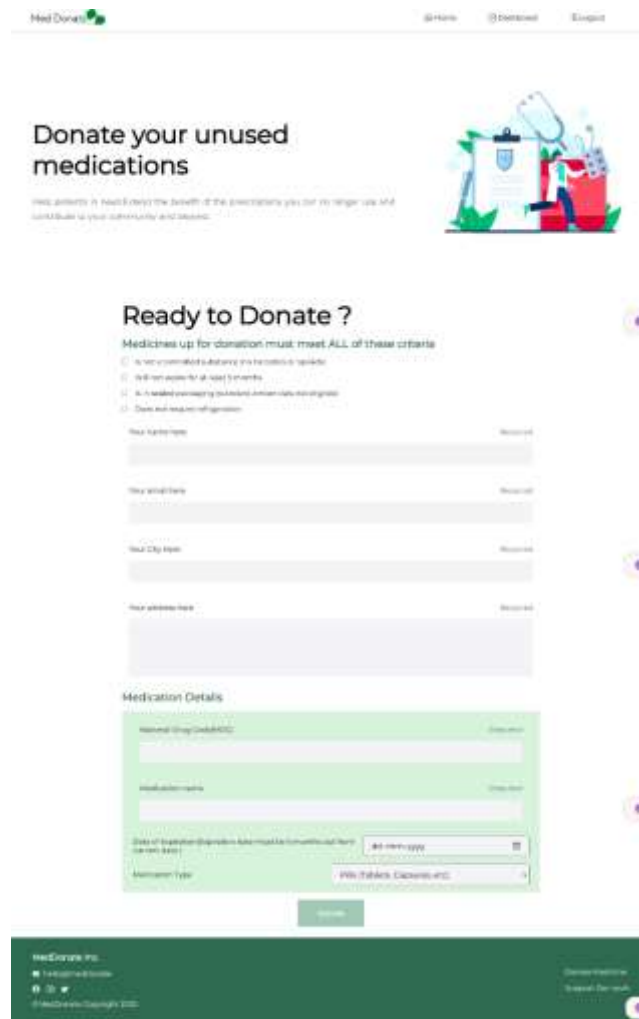


Fig 7: Medicine Donation Page

The user (donor) must fill out the entire form and follow all donation guidelines in order to donate medications. The admin side would then confirm and validate this, and only then might others be able to benefit from this donation.

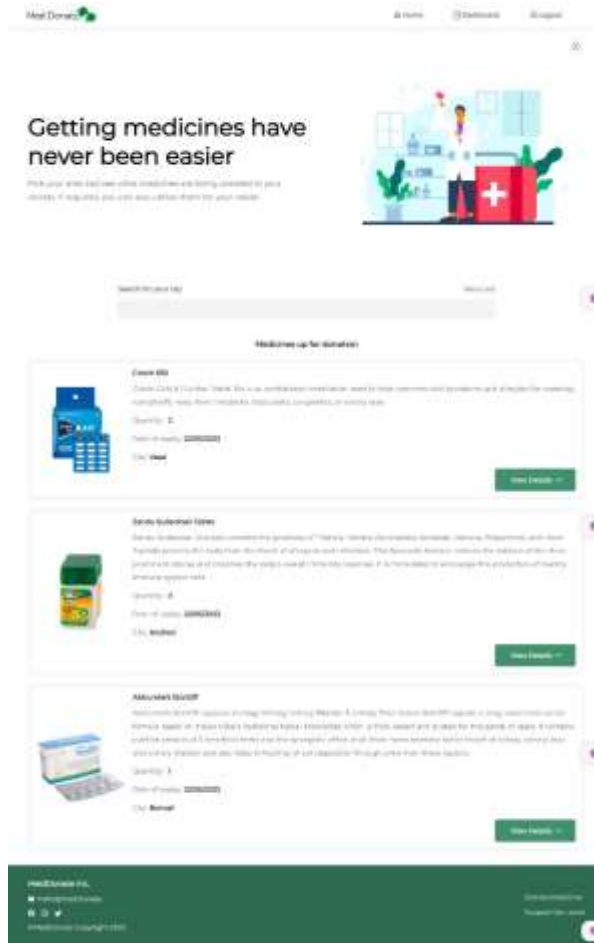


Fig 8: Receiving medicine page.

Once on this page, the user can look for medications in their area, purchase the ones they need for their own use, or donate the extra supplies. When a medication that suits their needs is found, they can continue to view the medication's information in detail, which also includes the donor's information.



Fig 9: Checkout page

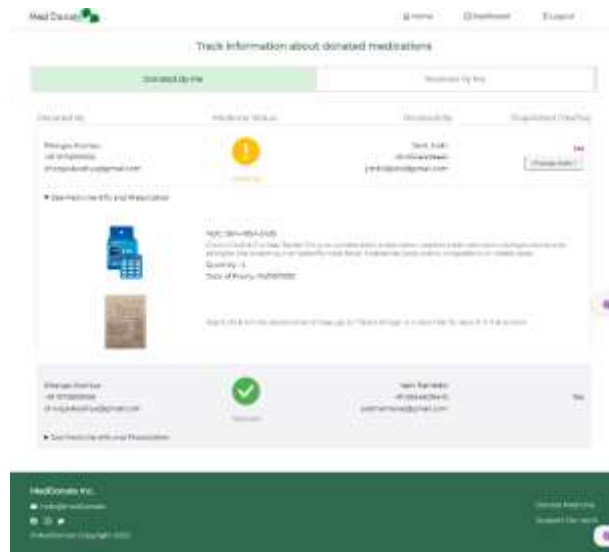


Fig 10: User’s previous transactions

The user can view their donations, who they were made to, and their current status on this page (stays "pending" till admin authorizes it). The user can also view their progress from the side of the donation that is receiving it. Here, the user is not only constrained to donate but to also avail any medications if needed.

- ADMIN functionalities:



Fig 11: Admin dashboard

Three primary functions are available to the administrator when logged in as ADMIN:

1. Managing or editing drugs that are available for donation.
2. Viewing and authorizing / rejecting every transaction (including both donations and medication) that takes place within the application.
3. Managing users which can assist in suspending users' accounts or their requests for donations or other services if something seems fishy.



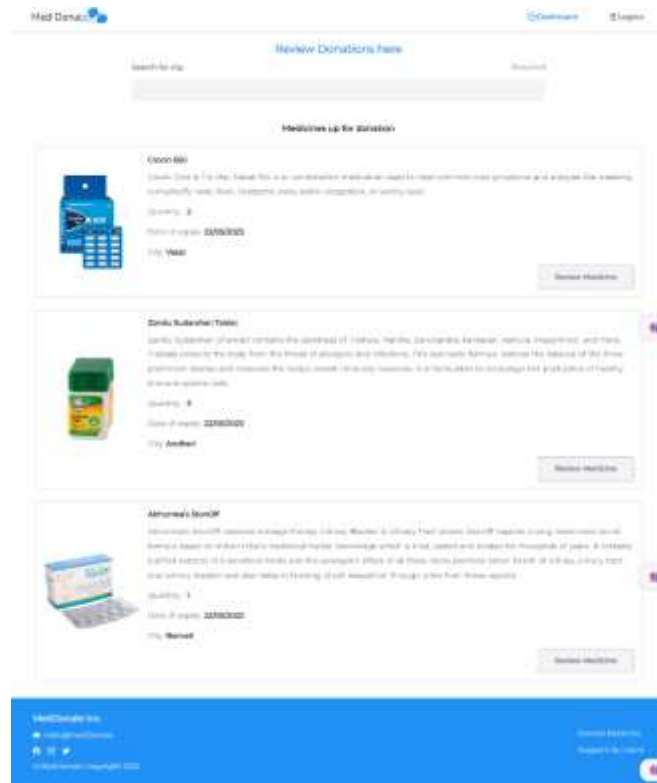


Fig 12: Managing medications.

The information about the medications that are up for donation can be viewed and modified here by the ADMIN. The information about the donor is also accessible to ADMIN. Request as well as Account dismissal may result from any malicious encounter by the ADMIN.

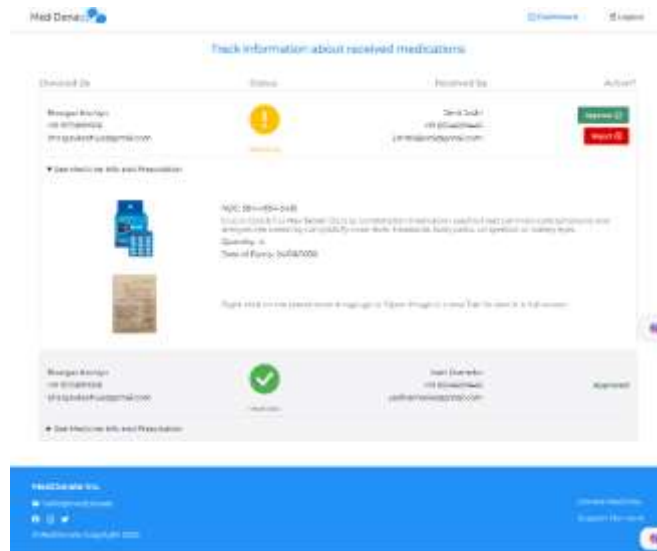


Fig13: Authorization from ADMIN

Any request for the donation of medication or for the receipt of it may be approved or rejected by the ADMIN. In order to ensure the ADMIN of any malicious engagement, the receiver (user) has the option to attach a prescription for the medication given.

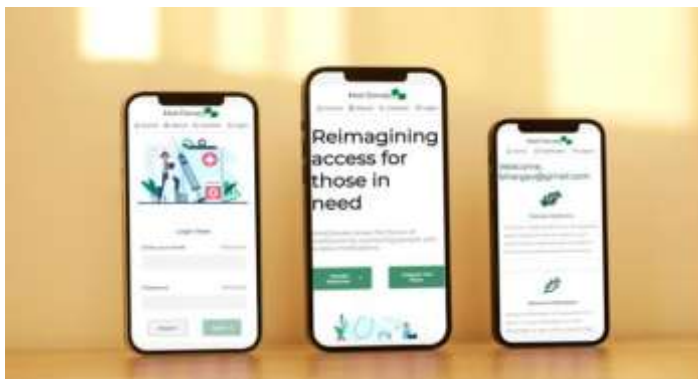


Fig 14: Responsiveness of the application

## V. CONCLUSION

The modern era has begun. People of all socioeconomic backgrounds, educational levels, and knowledge levels are now aware of their health. It is sad that, despite their dire circumstances, those in need are unable to pay much attention to their regular medical care due to their low wages.

By providing free care to those who cannot afford expensive medications, NGOs demonstrate incredible drive. However, they typically receive treatment but not the pricey prescribed medications. Therefore, in the big picture, this amazing act of providing free treatment to the people is useless because they would have to pay for the expensive prescribed medications on their own.

The plan and enhancements of the online portal that we propose are briefly outlined in this essay. This portal will be very successful and bear a tremendous commitment to obtaining the healthcare services for these indigent people. We anticipate that this portal will help reduce medication waste to a greater extent.

This project or this online medicine donation portal has the potential to develop into a complete application in the future, offering all medical services directly on the portal.

## VI. FUTURE SCOPE

This application will soon be able to meet every person's pharmaceutical and medical needs. For instance, the application can be combined with features like video doctor consultations or real-life pharmacists issuing e-prescriptions. To better serve the needs of the people, our application can also include honorable causes like organ and blood donation. Therefore, the application has the potential to develop into a business portal and app that will be distinctive in its functionality and accessibility.

Having said that, we would like to draw a close to this presentation in the hopes that the poor and the needy will benefit from our suggested system, which will also work to improve society by enabling everyone to benefit from cutting-edge, expensive medicine.

We kindly ask each person to assist us and improve society by performing such modest but admirable deeds. We also want to ask people to help us raise awareness of the problems that the poor face and how much of a miracle it would be if each and every person took responsibility and gave as much leftover medication and other things as they could.

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