

# NGO Donation Management System

Repository: <https://github.com/C0deEnigma/ngo-donation-management-system>

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## 1. Introduction

The **NGO Donation Management System** is a web-based platform built using the Django framework. Its primary goal is to streamline the interaction between a **Non-Governmental Organization (NGO)** and **donors**, enabling transparent campaign management, efficient donation handling, and centralized administrative control.

The system follows Django's **Model–View–Template (MVT)** architecture and is structured as a collection of modular Django apps, each responsible for a distinct domain of functionality.

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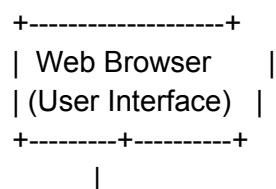
## 2. System Architecture

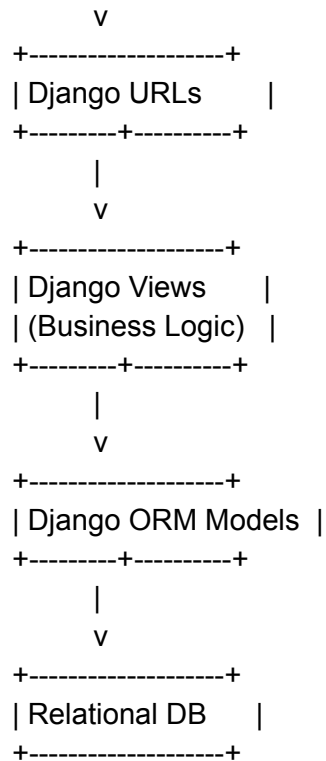
### 2.1 High-Level Architecture

The system follows a classic **three-tier architecture**:

1. **Presentation Layer**
  - HTML templates rendered using Django Template Language (DTL)
  - CSS served via Django static files
2. **Application Layer**
  - Django views (function-based or class-based)
  - Business logic for campaigns, donations, registrations, and authentication
3. **Data Layer**
  - Django ORM
  - Relational database (SQLite used in initial development; switched to MySQL for scalability)

### 2.2 Architectural Diagram





## 2.3 Modular App Design

App Name	Responsibility
accounts	Authentication, user profiles, roles
registrations	Registration for user in campaigns
campaigns	Campaign creation, display, and lifecycle
donations	Donation processing and history tracking
pages	Static and informational pages

This modularity improves **maintainability, scalability, and testability**.

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## 3. Database Schema

### 1. User

Extends Django's `AbstractUser` and represents all platform users (admins and donors).

#### Key Fields

- `id` (PK)
- `username` (*unique, required*)
- `email` (*unique, required*)
- `password`
- Standard Django auth fields (`is_staff`, `is_superuser`, etc.)

#### Constraints

- `email` is unique
  - `username` remains Django-default (unique)
- 

### 2. Campaign

Represents a fundraising campaign run by the NGO.

#### Key Fields

- `id` (PK)
- `title`
- `description`
- `goal_amount` (*nullable*)

- start\_date
- end\_date (*nullable*)
- is\_active
- image (*nullable*)
- created\_at

#### Indexes

- is\_active
- start\_date

#### Notes

- Campaigns are ordered by newest first
  - Campaigns cannot be deleted if registrations exist
- 

### 3. Registration

Links a **User** to a **Campaign** (one registration per user per campaign).

#### Key Fields

- id (PK)
- user\_id (FK → User)
- campaign\_id (FK → Campaign)
- name (*optional*)
- created\_at

## Constraints

- **Unique (user\_id, campaign\_id)**

## Delete Rules

- User deletion → registrations deleted
  - Campaign deletion → blocked if registrations exist
- 

## 4. Donation

Stores donation transactions linked to a registration.

### Key Fields

- id (PK)
- registration\_id (FK → Registration, nullable)
- amount
- payment\_status (*Pending / Success / Failed*)
- payment\_provider
- transaction\_id (*nullable*)
- created\_at

### Indexes

- payment\_status
- created\_at

## Constraints

- **Conditional Unique (transaction\_id, payment\_provider)**
  - Applied only when transaction\_id is not null or empty

## Delete Rules

- Registration deletion → donation retained with registration\_id = NULL

## Relationships (Summary)

- User 1 — \* Registration \* — 1 Campaign
- 1
- └ \* Donation

## Design Notes

- Ensures **one registration per user per campaign**
- Supports **safe payment retries**
- Prevents campaign deletion when dependent data exists
- Optimized for **scalable MySQL deployments**

## 4. System Flow Diagrams

### 4.1 User Registration & Login Flow

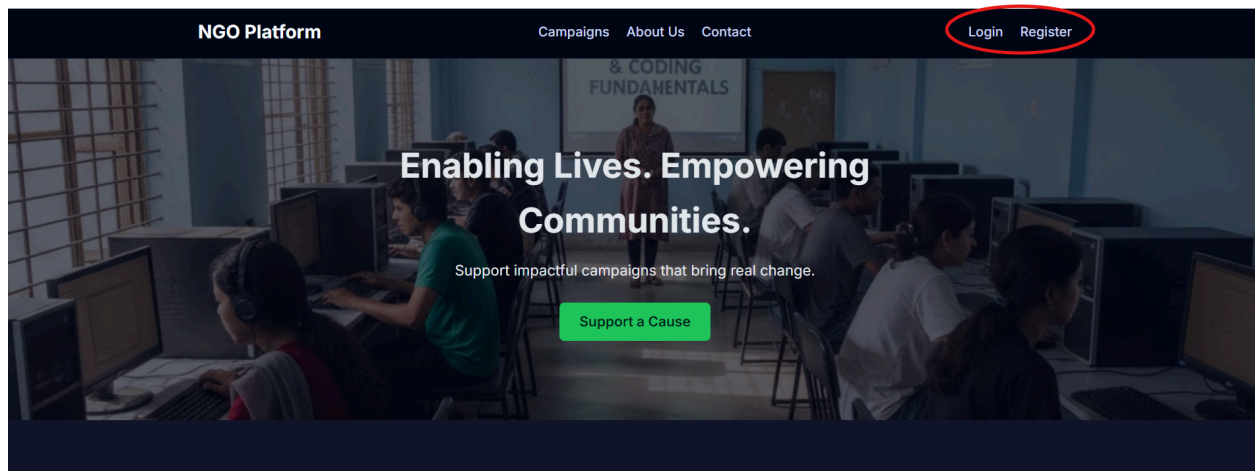
User → Register/Login → Authentication

↓

Role Assigned

↓

User Dashboard



Home page

A screenshot of the 'Create Account' sign-up page. The header is dark blue with 'NGO Platform' on the left and 'Campaigns', 'About Us', 'Contact', 'Login', and 'Register' on the right. The main content area is a light gray box titled 'Create Account'. It contains form fields for 'Username', 'Email', 'Password', and 'Password confirmation'. Below the 'Password' field, there are four bullet points of password requirements. At the bottom of the form is a green 'Sign Up' button and a link 'Already have an account? Login'.

Sign up page

NGO Platform

CampaignsAbout UsContact

LoginRegister

Login

Username

Password

Login

Don't have an account? [Register](#)

Login Page

NGO Platform

CampaignsAbout UsContact

Logged in as user1My ProfileLogout

User Profile

Username: user1

Email: none16094@gmail.com

Date Joined: Jan. 14, 2026, 11:39 p.m.

Last Login: Jan. 19, 2026, 1:04 a.m.

Your Registrations

Campaign	Registered On
Education for Every Child Registered as: Nobody	Jan. 18, 2026, 10:17 p.m.
Accessible Healthcare for Communities Registered as: Nobody	Jan. 17, 2026, 11:49 p.m.
Skill Development for Sustainable Livelihoods Registered as: Nobody	Jan. 17, 2026, 11:12 p.m.

Your Donations

Campaign	Amount	Status	Date
Education for Every Child	₹ 50000.00	Success	Jan. 18, 2026, 10:34 p.m.
Education for Every Child	₹ 5000.00	Failed	Jan. 18, 2026, 10:33 p.m.
Skill Development for Sustainable Livelihoods	₹ 6000.00	Failed	Jan. 18, 2026, 1:17 a.m.



## User dashboard (after login)

The screenshot shows the Django administration interface. At the top, there's a header with 'Django administration' on the left and 'WELCOME, CODEENIGMA. VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header, the 'Site administration' section is visible. It contains five main categories: ACCOUNTS (Users), AUTHENTICATION AND AUTHORIZATION (Groups), CAMPAIGNS (Campaigns), DONATIONS (Donations), and REGISTRATIONS (Registrations). Each category has a '+ Add' and a 'Change' link. To the right of these categories is a 'Recent actions' sidebar. It lists 'My actions' with a list of recent events, including user logins, donations, and campaign registrations, each with a status indicator (red 'x' for pending, green checkmark for successful).

Django administration

WELCOME, CODEENIGMA. VIEW SITE / CHANGE PASSWORD / LOG OUT

Site administration

ACCOUNTS

Users [+ Add](#) [Change](#)

AUTHENTICATION AND AUTHORIZATION

Groups [+ Add](#) [Change](#)

CAMPAIGNS

Campaigns [+ Add](#) [Change](#)

DONATIONS

Donations [+ Add](#) [Change](#)

REGISTRATIONS

Registrations [+ Add](#) [Change](#)

Recent actions

My actions

- ✗ user1 | 500.00 | Pending Donation
- ✗ user1 | 500.00 | Pending Donation
- ✗ Jiangly | 100.00 | Pending Donation
- ✗ Jiangly | 10.00 | Pending Donation
- ✗ aurora → Skill Development for Sustainable Livelihoods Registration
- ✗ user1 | 40000.00 | Pending Donation
- ✗ user1 | 5000.00 | Pending Donation
- ✓ Education for Every Child Campaign
- ✓ Accessible Healthcare for Communities Campaign
- ✓ Skill Development for Sustainable Livelihoods Campaign

## Admin Dashboard (Django Default authentication)

The screenshot shows the 'Select user to change' page in the Django Admin. It features a search bar at the top with a magnifying glass icon and a 'Search' button. Below the search bar, there's an 'Action:' dropdown menu set to '-----' and a 'Run' button. To the right of the dropdown, it says '0 of 4 selected'. Below this is a table with four columns: USERNAME, EMAIL, STAFF STATUS, ACTIVE, and DATE JOINED. The table lists four users: aurora, C0deEnigma, Jiangly, and user1. Each row has a checkbox on the left. Below the table, it says '4 users'.

Select user to change

Search

Action: ----- [Run](#) 0 of 4 selected

<input type="checkbox"/>	USERNAME	EMAIL	STAFF STATUS	ACTIVE	DATE JOINED
<input type="checkbox"/>	aurora	kaushik11064@gail.com	✗	✓	Jan. 18, 2026, 1:21 a.m.
<input type="checkbox"/>	C0deEnigma	kaushik9261@gmail.com	✓	✓	Jan. 13, 2026, 9:08 p.m.
<input type="checkbox"/>	Jiangly	shivam_k3@ch.iitr.ac.in	✗	✓	Jan. 18, 2026, 4:25 a.m.
<input type="checkbox"/>	user1	none16094@gmail.com	✗	✓	Jan. 14, 2026, 11:39 p.m.

4 users

## Admin (users)

Select campaign to change

ADD CAMPAIGN +

Action:  Run 0 of 3 selected

<input type="checkbox"/>	TITLE	GOAL AMOUNT	TOTAL DONATIONS (₹)	START DATE	END DATE	IS ACTIVE
<input type="checkbox"/>	<a href="#">Skill Development for Sustainable Livelihoods</a>	4000000	20000.00	Jan. 13, 2026	Jan. 31, 2026	
<input type="checkbox"/>	<a href="#">Accessible Healthcare for Communities</a>	5000000	21050.00	Jan. 13, 2026	-	
<input type="checkbox"/>	<a href="#">Education for Every Child</a>	10000000	120000.00	Jan. 13, 2026	Jan. 28, 2026	

3 campaigns

Admin (campaigns) - Total aggregated amounts mentioned per campaign as mentioned in requirements of admin dashboard.

Select registration to change

ADD REGISTRATION +

Search

Action:  Run 0 of 8 selected

<input type="checkbox"/>	NAME	USER	CAMPAIGN	CREATED AT
<input type="checkbox"/>	<a href="#">Nobody</a>	user1	Education for Every Child	Jan. 18, 2026, 10:17 p.m.
<input type="checkbox"/>	<a href="#">Jiangly</a>	Jiangly	Skill Development for Sustainable Livelihoods	Jan. 18, 2026, 7:44 a.m.
<input type="checkbox"/>	<a href="#">Jiangly</a>	Jiangly	Accessible Healthcare for Communities	Jan. 18, 2026, 4:25 a.m.
<input type="checkbox"/>	<a href="#">Shivam Kaushik</a>	aurora	Skill Development for Sustainable Livelihoods	Jan. 18, 2026, 2:35 a.m.
<input type="checkbox"/>	<a href="#">Shivam Kaushik</a>	aurora	Education for Every Child	Jan. 18, 2026, 1:32 a.m.
<input type="checkbox"/>	<a href="#">Shivam Kaushik</a>	aurora	Accessible Healthcare for Communities	Jan. 18, 2026, 1:23 a.m.
<input type="checkbox"/>	<a href="#">Nobody</a>	user1	Accessible Healthcare for Communities	Jan. 17, 2026, 11:49 p.m.
<input type="checkbox"/>	<a href="#">Nobody</a>	user1	Skill Development for Sustainable Livelihoods	Jan. 17, 2026, 11:12 p.m.

8 registrations

FILTER

Show counts

↓ By campaign

[All](#)
[Skill Development for Sustainable Livelihoods](#)
[Accessible Healthcare for Communities](#)
[Education for Every Child](#)

↓ By created at

[Any date](#)
[Today](#)
[Past 7 days](#)
[This month](#)
[This year](#)

Admin (registrations for campaigns)

Start typing to filter...	ADD DONATION +							
ACCOUNTS								
Users + Add								
AUTHENTICATION AND AUTHORIZATION								
Groups + Add								
CAMPAIGNS								
Campaigns + Add								
DONATIONS								
Donations + Add								
REGISTRATIONS								
Registrations + Add								

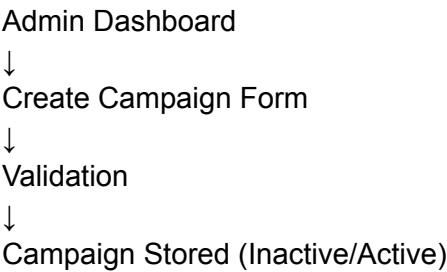
<div> <input type="text"/> <input type="button" value="Search"/> </div>																																																																																																		
<div> <div>Action: <span>-----</span> <span>Run</span> 0 of 15 selected</div> <table> <tr> <th><input type="checkbox"/></th><th>NAME</th><th>USER</th><th>CAMPAIGN</th><th>AMOUNT</th><th>PAYMENT STATUS</th><th>PAYMENT PROVIDER</th><th>TRANSACTION ID</th><th>CREATED AT</th></tr> <tr> <td><input type="checkbox"/></td><td>Nobody</td><td>user1</td><td>Education for Every Child</td><td>50000.00</td><td>Success</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 10:34 p.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Nobody</td><td>user1</td><td>Education for Every Child</td><td>5000.00</td><td>Failed</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 10:33 p.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Jiangly</td><td>Jiangly</td><td>Skill Development for Sustainable Livelihoods</td><td>500.00</td><td>Failed</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 7:44 a.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Jiangly</td><td>Jiangly</td><td>Accessible Healthcare for Communities</td><td>50.00</td><td>Success</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 4:40 a.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Jiangly</td><td>Jiangly</td><td>Accessible Healthcare for Communities</td><td>100.00</td><td>Failed</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 4:40 a.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Shivam Kaushik</td><td>aurora</td><td>Skill Development for Sustainable Livelihoods</td><td>10000.00</td><td>Success</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 2:36 a.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Shivam Kaushik</td><td>aurora</td><td>Skill Development for Sustainable Livelihoods</td><td>10000.00</td><td>Failed</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 2:35 a.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Shivam Kaushik</td><td>aurora</td><td>Education for Every Child</td><td>70000.00</td><td>Success</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 1:32 a.m.</td></tr> <tr> <td><input type="checkbox"/></td><td>Shivam Kaushik</td><td>aurora</td><td>Accessible Healthcare for</td><td>16000.00</td><td>Success</td><td>stripe_test</td><td>-</td><td>Jan. 18, 2026, 1:24 a.m.</td></tr> </table> </div>									<input type="checkbox"/>	NAME	USER	CAMPAIGN	AMOUNT	PAYMENT STATUS	PAYMENT PROVIDER	TRANSACTION ID	CREATED AT	<input type="checkbox"/>	Nobody	user1	Education for Every Child	50000.00	Success	stripe_test	-	Jan. 18, 2026, 10:34 p.m.	<input type="checkbox"/>	Nobody	user1	Education for Every Child	5000.00	Failed	stripe_test	-	Jan. 18, 2026, 10:33 p.m.	<input type="checkbox"/>	Jiangly	Jiangly	Skill Development for Sustainable Livelihoods	500.00	Failed	stripe_test	-	Jan. 18, 2026, 7:44 a.m.	<input type="checkbox"/>	Jiangly	Jiangly	Accessible Healthcare for Communities	50.00	Success	stripe_test	-	Jan. 18, 2026, 4:40 a.m.	<input type="checkbox"/>	Jiangly	Jiangly	Accessible Healthcare for Communities	100.00	Failed	stripe_test	-	Jan. 18, 2026, 4:40 a.m.	<input type="checkbox"/>	Shivam Kaushik	aurora	Skill Development for Sustainable Livelihoods	10000.00	Success	stripe_test	-	Jan. 18, 2026, 2:36 a.m.	<input type="checkbox"/>	Shivam Kaushik	aurora	Skill Development for Sustainable Livelihoods	10000.00	Failed	stripe_test	-	Jan. 18, 2026, 2:35 a.m.	<input type="checkbox"/>	Shivam Kaushik	aurora	Education for Every Child	70000.00	Success	stripe_test	-	Jan. 18, 2026, 1:32 a.m.	<input type="checkbox"/>	Shivam Kaushik	aurora	Accessible Healthcare for	16000.00	Success	stripe_test	-	Jan. 18, 2026, 1:24 a.m.
<input type="checkbox"/>	NAME	USER	CAMPAIGN	AMOUNT	PAYMENT STATUS	PAYMENT PROVIDER	TRANSACTION ID	CREATED AT																																																																																										
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FILTER	
Show counts	
By payment provider	
All stripe_test	
By payment status	
All Pending Success Failed	
By created at	
Any date Today Past 7 days This month This year	

Donations (Registrations for campaign) - Data can be exported to csv, as mentioned in the requirements of admin dashboard.

4.2 Campaign Creation Flow



Django administration

WELCOME, CODEENIGMA. VIEW SITE / CHANGE PASSWORD / LOG OUT

Site administration

ACCOUNTS

Users [+ Add](#) [Change](#)

AUTHENTICATION AND AUTHORIZATION

Groups [+ Add](#) [Change](#)

CAMPAIGNS

Campaigns [+ Add](#) [Change](#)

DONATIONS

Donations [+ Add](#) [Change](#)

REGISTRATIONS

Registrations [+ Add](#) [Change](#)

Recent actions

My actions

✗ user1 | 500.00 | Pending Donation

✗ user1 | 500.00 | Pending Donation

✗ Jiangly | 100.00 | Pending Donation

✗ Jiangly | 10.00 | Pending Donation

✗ aurora → Skill Development for Sustainable Livelihoods Registration

✗ user1 | 40000.00 | Pending Donation

✗ user1 | 5000.00 | Pending Donation

✓ Education for Every Child Campaign

✓ Accessible Healthcare for Communities Campaign

✓ Skill Development for Sustainable Livelihoods

Django administration

WELCOME, CODENIGMA / VIEW SITE / CHANGE PASSWORD / LOG OUT

Home » Campaigns » Campaigns » Add campaign

Start typing to filter...

**ACCOUNTS**

Users [+ Add](#)

**AUTHENTICATION AND AUTHORIZATION**

Groups [+ Add](#)

**CAMPAIGNS**

Campaigns [+ Add](#)

**DONATIONS**

Donations [+ Add](#)

**REGISTRATIONS**

Registrations [+ Add](#)

**Add campaign**

Title:

Description:

Goal amount:

Start date:  Today Note: You are 5.5 hours ahead of server time.

End date:  Today Note: You are 5.5 hours ahead of server time.

☒ Is active

Image:  No file chosen

Created at: -

Total Donations (€): -

## 4.3 Donation Process Flow

Donor Login



Browse Campaigns



Select Campaign



Register for Campaign



Enter Amount



Submit Donation



Donation Record Saved



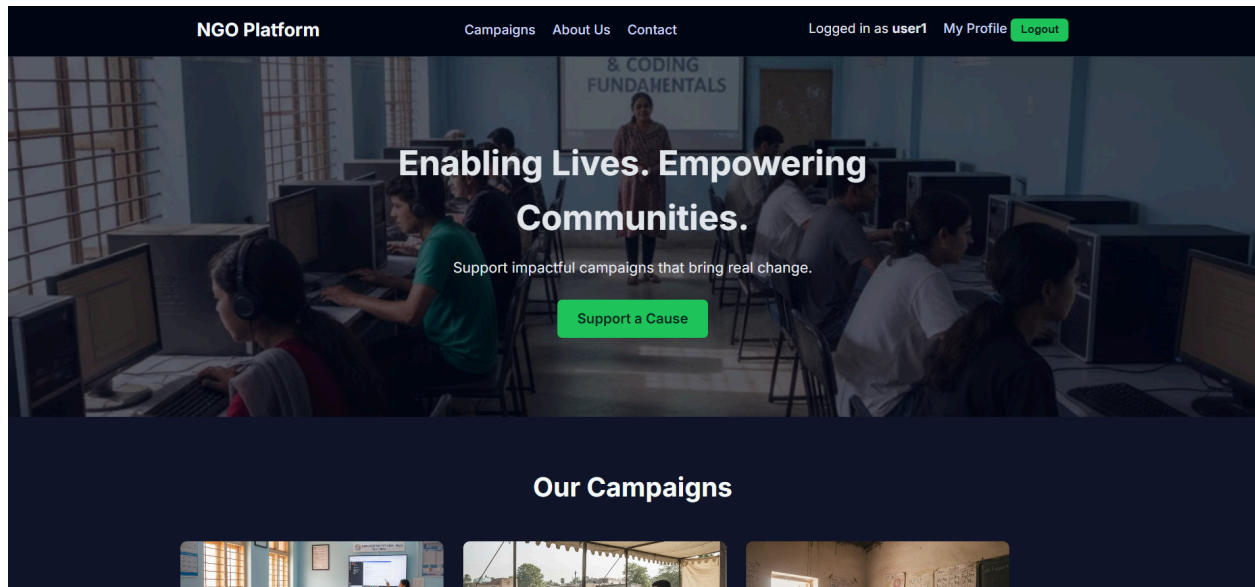
Campaign Amount Updated

## 4.4 Sequence Diagram (Donation)

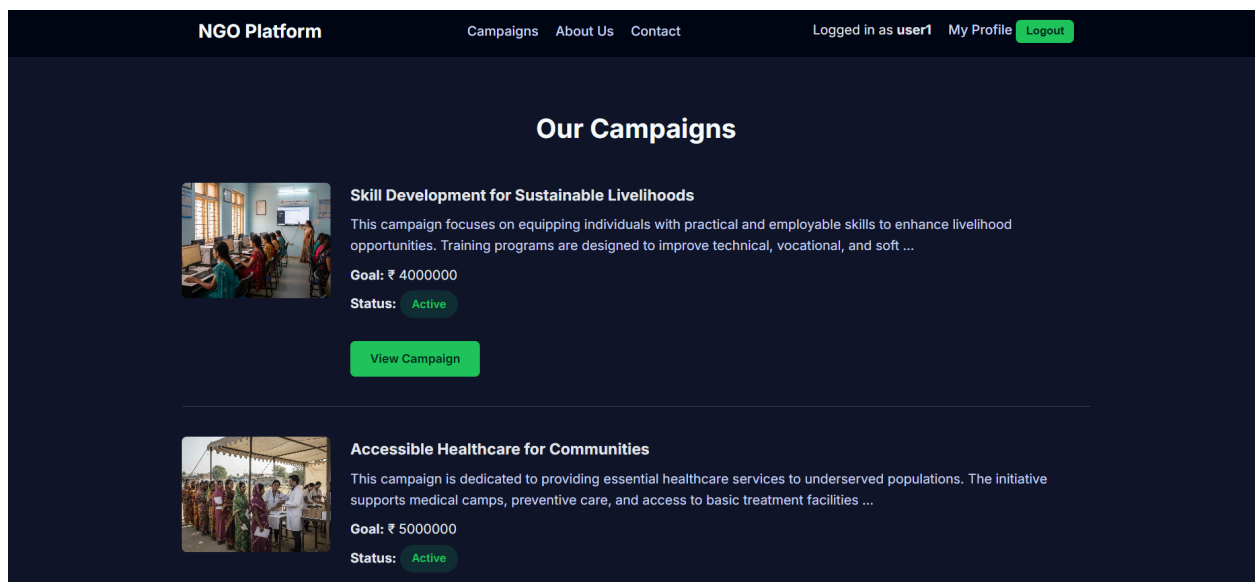
Donor → Campaign Page → Registration Page → Donation Form → View

View → Donation Model → Database

Database → View → Confirmation Page



Go to campaigns from nav bar



Click view campaign to go to detailed page of a campaign

NGO Platform

CampaignsAbout UsContact

Logged in as C0deEnigmaDashboardLogout

Goal Amount

₹ 5000000

Start Date

Jan. 13, 2026

End Date

None

Description

This campaign is dedicated to providing essential healthcare services to underserved populations. The initiative supports medical camps, preventive care, and access to basic treatment facilities for individuals who lack adequate healthcare resources. Our goal is to improve overall well-being and ensure timely medical support for those in need.

Register

Click Register for registering for a campaign

Register for Campaign

Accessible Healthcare for Communities

This campaign is dedicated to providing essential healthcare services to underserved populations. The initiative supports medical camps, preventive care, and access to basic treatment facilities for individuals who lack adequate healthcare resources. Our goal is to improve overall well-being and ensure timely medical support for those in need.

Your Name (optional)

Leave blank for anonymous registration

Confirm Registration

Cancel

Fill your name and confirm registration (Anonymous registrations are allowed)

NGO Platform

CampaignsAbout UsContact

Logged in as user1My ProfileLogout

Donate to Accessible Healthcare for Communities

You are supporting this campaign. You can donate any amount of your choice.

Donation Amount (₹)

Minimum donation amount is ₹50.

Proceed to Pay

You will be redirected to the donations page once the registration is complete. After completion of registration, there will be option for donation on campaigns details page as well, as shown in image below -

NGO Platform

CampaignsAbout UsContact

Logged in as user1My ProfileLogout

Active

Goal Amount

₹ 10000000

Start Date

Jan. 13, 2026

End Date

Jan. 28, 2026

Description

This campaign focuses on improving access to quality education for children from underprivileged communities. The initiative supports school enrollment, learning materials, and basic infrastructure to ensure that no child is denied education due to financial or social barriers. By investing in education, we aim to break the cycle of poverty and create long-term opportunities for individuals and communities.


Donate

←

TEST MODE

Accessible Healthcare for Communities

₹1,000.00

Pay with  link

OR

Pay with card

Email

email@example.com





Payment method

Card information

1234 1234 1234 1234

MM / YY

CVC



Cardholder name

Full name on card

Country or region

India

☐ Save my information for faster checkout

Pay securely on this site and everywhere Link is accepted.

Pay

Then, you will be redirected to the mock payment gateway (stripe).  
For successful transaction use card details - 4242 4242 4242 4242 and any future expiry and any cvc.

If you abort the payment, you will be redirected to a page where you get the option to retry payment -

NGO Platform

Campaigns About Us Contact

Logged in as user1 My Profile Logout

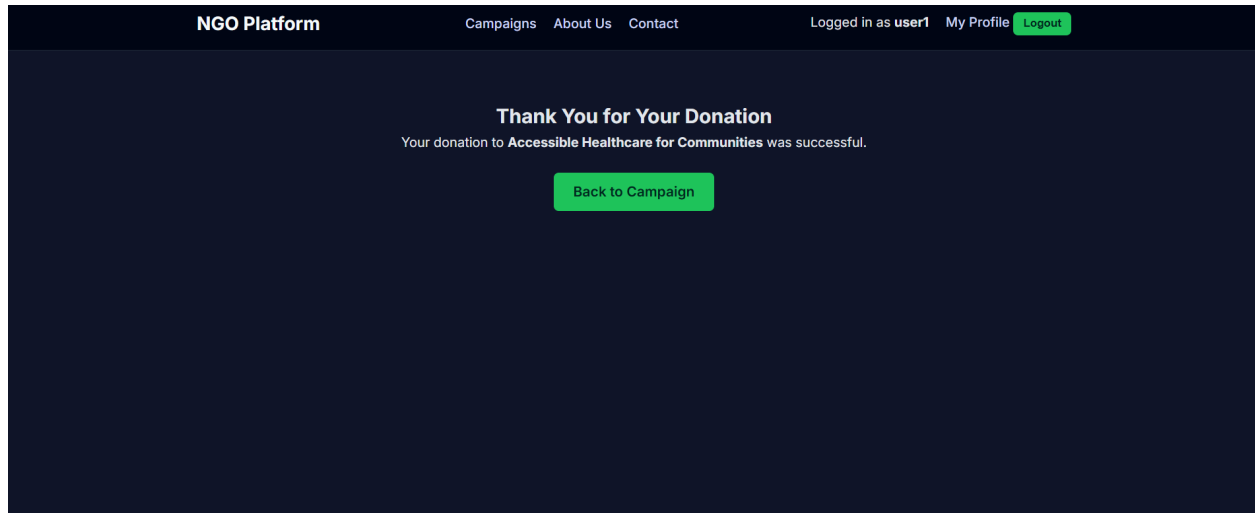
Payment Failed

Unfortunately, your payment could not be completed. You can try again.

Try Again

If the payment is successful, you will be redirected to payment success page -





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## 5. Key Design Decisions (Elaborated)

### 5.1 Django Framework Selection

- Rapid development with built-in authentication
- Secure defaults (CSRF, XSS protection)
- Scalable architecture suitable for NGO platforms

### 5.2 Role-Based Access Control

- Different dashboards and permissions for Admin and Donor
- Prevents campaign creation or approval for users other than Admins

### 5.3 Campaign-Centric Donation Model

- All donations are linked to campaigns
- Enables accurate reporting and transparency

### 5.4 Media Handling

- Campaign images improve donor engagement
  - Django's MEDIA\_ROOT used for file handling
-

## 6. Assumptions (Detailed)

1. **Database:** SQLite is used during development; switched to MySQL for higher scalability.
  2. **Payments:** Donation records assume external payment confirmation or mock payments using Stripe.
  3. **Security:** Django's default middleware stack is enabled.
  4. **Scalability:** System is designed for higher traffic, with future horizontal scaling possible.
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## 7. Future Enhancements

- REST API using Django REST Framework
  - Real payment gateway integration instead of mock-up
  - E-mail authentication during sign-up
  - Deployment
- 

## 8. Conclusion

The NGO Donation Management System demonstrates a **clean, modular, and scalable Django architecture**. With clearly separated concerns, well-defined data relationships, and extensibility in mind, the system provides a strong foundation for real-world NGO fundraising and management platforms.