Charity CrowdFunding Platform

Project Documentation

1. Introduction

The Charity Funding Platform is a web-based application developed using **Django**, **Django REST Framework**, and **PostgreSQL**. It enables users to create campaigns, donate to existing causes, and volunteer for charitable events. The platform provides transparency and efficiency in raising and managing charitable funds.

2. Objectives

- Provide a secure platform for managing charity campaigns.
- Allow donors to contribute easily through a simple interface.
- Enable volunteers to register their availability.
- Generate QR codes for easy donation tracking.
- Ensure data persistence using **PostgreSQL**.
- Expose APIs for integration and testing with **Postman**.

3. Technology Stack

- **Backend Framework**: Django 5.x, Django REST Framework
- **Database**: PostgreSQL (managed via pgAdmin)
- **Frontend**: Django Templates (or React if extended)
- **APIs**: REST APIs tested via Postman
- **Libraries Used**:
  - `qrcode` → for QR code generation
  - `pillow` → image handling

    - `djangorestframework` → REST APIs
    - `psycopg2` → PostgreSQL adapter

4. System Architecture

Client (Browser/Postman)

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Django Views / DRF API

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PostgreSQL Database

5. Database Design

Tables

1. **Campaign**
    - id (PK)
    - title
    - description
    - goal_amount
    - created_at (auto timestamp)
2. **Donation**
    - id (PK)
    - donor_name
    - amount
    - campaign (FK → Campaign)

    - verified (Boolean)

3. **Volunteer**
    - id (PK)
    - name
    - email
    - phone
    - available (Boolean)

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6. Features

Campaign Management

- Create, view, and manage charity campaigns.
- Generate **QR codes** for each campaign.

Donation Management

- Donors can contribute to campaigns.
- Admins can verify donations.

Volunteer Management

- Volunteers can register and mark availability.

REST API Endpoints (examples)

- `POST /api/campaigns/create/` → Create a campaign
- `GET /api/campaigns/` → List campaigns
- `POST /api/donations/create/` → Make a donation

- `POST /api/donations/{id}/verify/` → Verify a donation
- `POST /api/volunteers/create/` → Register volunteer
- `POST /api/volunteers/{id}/avail/` → Update availability

7. API Testing with Postman

1. Start Django server: py manage.py runserver
2. py manage.py runserver

8. Security

- CSRF disabled for APIs (handled via DRF).
- Validation on input fields.
- PostgreSQL for secure and reliable data storage.

9. Future Enhancements

- Add **payment gateway integration** (Razorpay, Stripe).
- Implement **JWT authentication** for secure API access.
- Build **React/Angular frontend** for better UI.
- Add **admin dashboard** with analytics.

10. Conclusion

The Charity Funding Platform provides a transparent and scalable solution for managing charitable contributions. It ensures smooth handling of campaigns, donations, and volunteers while maintaining secure data management with PostgreSQL.