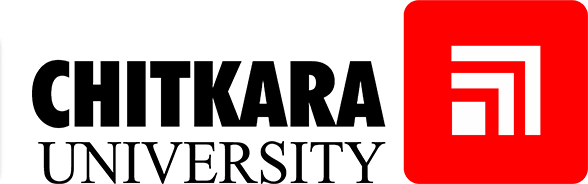
Database Management System

Semester-III(Batch-2024)

# Online Donation System

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**Group - G11(9)**

## Supervised By: Submitted By:

Sachin Garg Sir Agrim Gupta (2410990824) Arshdeep Singh(2410990860) Aryan Bansal(2410990863) Aseem Kamra(2410990868)

**Department of Computer Science and Engineering Chitkara University Institute of Engineering & Technology,**

**Chitkara University, Punjab**

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# Project Title: Online Donation System

**Problem Statements:**

In today’s digital age, managing charitable donations efficiently is crucial for organizations as well as donors. Traditional methods of handling donations often rely on scattered spreadsheets, manual receipts, or fragmented tools, which are time-consuming, error-prone, and lack transparency.

Donors face difficulties such as:

* No centralized platform to track their contributions.
* Inability to view past donations or monitor campaign progress.
* Lack of transparency in how funds are utilized.

Organizations also struggle with:

* Managing large donor records and multiple campaigns.
* Tracking payment histories and generating accurate reports.
* Ensuring data consistency and transparency in fundraising.

To overcome these challenges, an Online Donation System is proposed. This system will allow donors to register, contribute to campaigns, view their donation history, and track fundraising progress online. Organizations can securely manage donor profiles, campaigns, and transactions through a centralized Database Management System (DBMS). Administrators will also be able to generate real-time reports and monitor incoming funds efficiently.

This system reduces manual effort, ensures data integrity, and builds trust by providing a transparent and reliable platform for donors, organizations, and administrators.

**Introduction:**

The Online Donation System is a web-based application that simplifies and streamlines the donation process for both donors and organizations. Instead of relying on scattered spreadsheets, paper receipts, or outdated tools, donors can contribute online and track their contributions easily.

Organizations can manage donor profiles, campaigns, and transactions digitally, while administrators can generate accurate reports and monitor fundraising progress in real time. This system ensures data integrity, reduces errors, and improves transparency in financial records.

By benefiting donors, organizations, and administrators alike, the system makes the donation process efficient, reliable, and trustworthy.

## Scope:

The Online Donation System will:

* Manage donor records, including personal details, contact information, and login credentials.
* Store campaign details, including title, description, fundraising goals, and associated organizations.
* Track all donation transactions, including donor ID, campaign ID, amount, date, and payment method.
* Allow organizations to manage multiple campaigns simultaneously.
* Enable administrators to generate reports on donations by campaign, donor, or date range.
* Support relational queries for quick retrieval of donor history and campaign performance data.

**Objectives:**

The primary objectives of the Online Donation System DBMS are:

* To create a centralized database for storing and managing donor, organization, campaign, and donation information.
* To ensure data integrity and security by implementing relational database design and appropriate constraints.
* To provide real-time access to campaign progress, donation history, and fundraising totals for administrators.
* To improve transparency and trust between donors and organizations through accurate and accessible reporting.
* To reduce redundancy and errors in donation tracking by eliminating manual record-keeping methods.
* To allow scalability for future expansion, such as adding new payment methods, more organizations, and advanced analytics.

## Main Entities and Attributes:

1. **Donor Field**

Donor\_ID (Primary Key)

Name

Email

Phone

Address

Password

1. **Organization Field**

Organization\_ID (Primary Key)

Name

Email

Phone

Address

1. **Campaign Field**

Campaign\_ID (Primary Key)

Title

Description

Target\_Amount

Start\_Date

End\_Date

Organization\_ID (Foreign Key)

1. **Donation Field**

Donation\_ID (Primary Key)

Donor\_ID (Foreign Key)

Campaign\_ID (Foreign Key)

Amount

Donation\_Date

Payment\_Method

1. **Admin Field**

Admin\_ID (Primary Key)

Name

Email

Password

## Relationship:

**Donor - Donation:** One donor can make many donation. One to many relation. (1:n)

**Campaign –** **Donation:** One campaign can make many donations. One to many relation. (1:n)

**Organization – Campaign:** One organization can run many campaigns. One to many relation. (1:n)

Admin manages Organizations and Campaigns

## Example Attributes to Include in ERD:

**Entity Attributes**

**Donor** Donor\_ID(PK), Name, Phone, Address, Password.

**Organization** Organization\_ID(PK), Name, Email, Phone, Address.

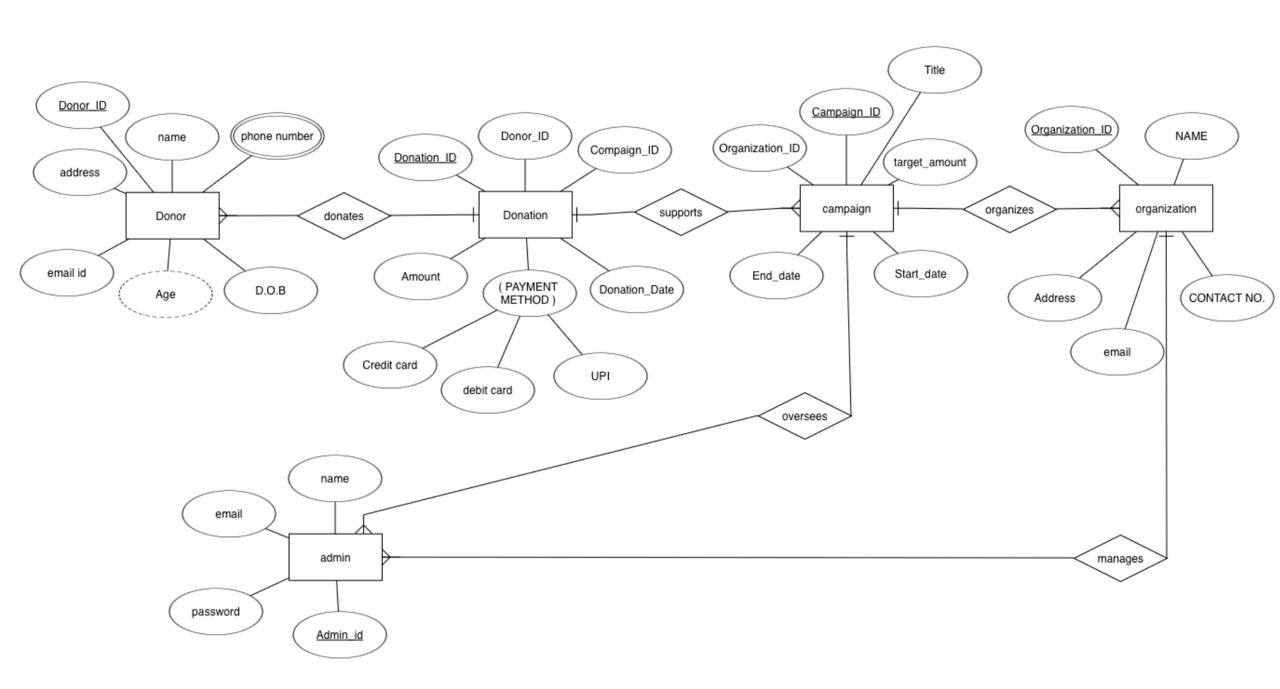
**Campaign** Campaign\_ID(PK), Title, Description, Target\_Amount, Start\_Date, End\_Date, Organization\_ID(FK).

**Donation** Donation\_ID(PK), Donor\_ID(FK), Campaign\_ID(FK), Amount, Donation\_

Date, Payment\_Method.

**Admin** Admin\_ID(PK), Name, Email, Password.

**ER Diagram**

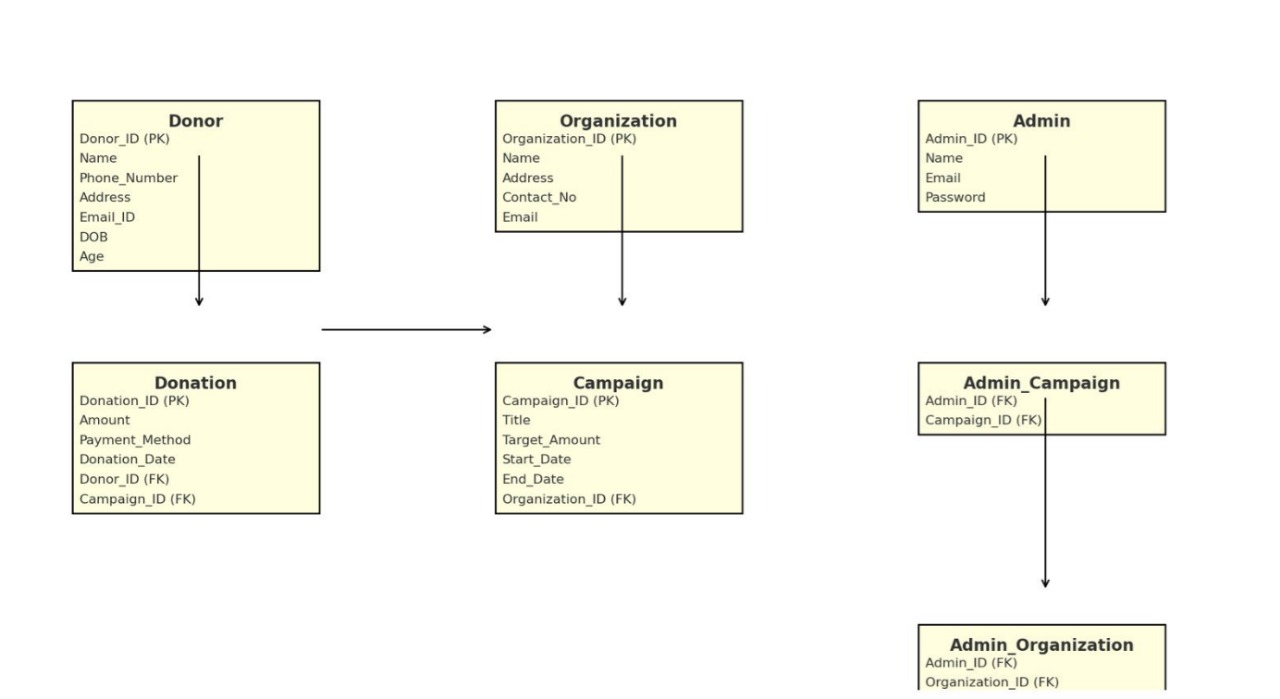
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**ER Model**

**A diagram of a database

AI-generated content may be incorrect.**

**Relational Table(Schema)**

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**Queries**

**Q1.** Get names of all donors.  
 π\_Name(Donor)

**Q2.** Retrieve details of all campaigns run by organization ID = 101.  
 σ\_Organization\_ID = 101(Campaign)

**Q3.** List donor names who have made donations.  
π\_Name(Donor ⨝ Donation)

**Q4.** Find all campaigns that have received donations greater than 10,000.  
π\_Title(σ\_Amount > 10000(Donation ⨝ Campaign))

**Q5.** Get email addresses of all organizations.  
π\_Email(Organization)

**Q6.** List donor names who donated to campaign ID = 202.  
π\_Name(σ\_Campaign\_ID = 202(Donor ⨝ Donation))

**Q7.** Find campaigns managed by a specific admin (say Admin\_ID = 1).  
π\_Title(Campaign ⨝ Organization ⨝ Admin σ\_Admin\_ID = 1)

**Q8.** Retrieve all donations made on “2025-01-01”.  
σ\_Donation\_Date = '2025-01-01'(Donation)

**Q9.** List donors who have donated more than once.  
π\_Name(γ\_Donor\_ID, COUNT(Donation\_ID) > 1(Donation ⨝ Donor))

**Q10.** Get campaigns whose target amount is greater than 1,00,000.  
σ\_Target\_Amount > 100000(Campaign)

**Q11.** Find donors who have not made any donations.  
π\_Name(Donor) – π\_Name(Donor ⨝ Donation)

**Q12.** Retrieve the total donation amount per campaign.  
γ\_Campaign\_ID, SUM(Amount)(Donation)

**Q13.** List organizations that have not started any campaign.  
π\_Name(Organization) – π\_Name(Organization ⨝ Campaign)

**Q14.** Get all campaigns that are currently active between ‘2025-01-01’ and ‘2025-12-31’.  
σ\_Start\_Date ≥ '2025-01-01' ∧ End\_Date ≤ '2025-12-31'(Campaign)

**Q15.** Find donors who donated using “Credit Card”.  
π\_Name(σ\_Payment\_Method = 'Credit Card'(Donation ⨝ Donor))

**Q16.** Retrieve campaign titles and their organizations’ names.  
π\_Title, Name(Campaign ⨝ Organization)

**Q17.** Find campaigns that have received no donations.  
π\_Campaign\_ID(Campaign) – π\_Campaign\_ID(Donation)

**Q18.** List all donors and the campaigns they supported.  
π\_Name, Title(Donor ⨝ Donation ⨝ Campaign)

**Q19.** Get the maximum donation amount received in any campaign.  
γ\_MAX(Amount)(Donation)

**Q20.** Retrieve total donations received by each organization.  
γ\_Organization\_ID, SUM(Amount)(Donation ⨝ Campaign)

**Q21.** List donor names who contributed to more than one campaign.  
π\_Name(γ\_Donor\_ID, COUNT(DISTINCT Campaign\_ID) > 1(Donation ⨝ Donor))

**Q22.** Find campaigns where collected donations exceeded target amount.  
π\_Title(γ\_Campaign\_ID, SUM(Amount)(Donation) ⨝ σ\_SUM(Amount) > Target\_Amount(Campaign))

**Q23.** Get details of admins who manage at least one organization.  
π\_Name, Email(Admin ⨝ Organization)

**Q24.** List organizations with campaigns ending in December 2025.  
π\_Name(σ\_End\_Date LIKE '2025-12-%'(Organization ⨝ Campaign))

**Q25.** Generate a summary report: campaign title, total donations, and number of donors.  
γ\_Title, SUM(Amount), COUNT(Donor\_ID)(Campaign ⨝ Donation)