Database Lab Project

Project Title:

Hope: Empowering Charities through effective fundraising management.

Members:

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1. Introduction

1.1 Purpose

The purpose of our project, "Hope: Empowering Charities through effective fundraising management," is to create a comprehensive software solution that simplifies and enhances the management of charity, donation, and fundraising activities.

1.2 Intended Audience and Reading Suggestions

The intended audience for our project, "Hope: Empowering Charities through effective fundraising management," includes charitable organizations, administrators, donors, event planners, and developers.

1.3 Benefits, Objectives, and Goals

- **Improved Donor Management**: Enable charities to maintain detailed donor profiles, facilitating personalized interactions and donor retention.
- **Efficient Fundraising Event Management**: Simplify event planning, coordination, and tracking, resulting in more successful fundraising campaigns.
- **Transparent Donation Tracking**: Provide donors with a transparent view of their contributions, enhancing trust and engagement.
- **Enhanced User Experience**: Create a user-friendly platform for donors, event planners, and administrators, fostering engagement and ease of use.

- **Security and Compliance**: Implement robust security measures to protect donor information and ensure compliance with data privacy regulations.

2. Overall Description

2.1 Product Functions

hopeBD will offer the following major functions:

- Efficient Donor Management
- Streamlined Fundraising Event Coordination
- Seamless Donation Tracking
- Comprehensive Report Generation
- User Role and Permission Management
- Secure Online Donations through Payment Gateway Integration

2.2 User Classes and Characteristics

Donors:

- **Characteristics**: Regular users who make donations to charitable organizations.
- **Responsibilities**: Contribute donations and engage with charitable events. Donors use the system primarily for contributing to causes and accessing personal donation records.

Collectors:

- **Characteristics**: Users responsible for creating and managing organizations and donation sectors.
- **Responsibilities**: Create new charitable organizations and define donation sectors within these organizations. Collectors facilitate the setup of organizational structures to ensure effective fundraising management.

Admin:

- **Characteristics**: Highly privileged users with full access rights.
- **Responsibilities**: Verify and validate newly created donation sectors to ensure they meet the organization's criteria and guidelines. Admins play a crucial role in

maintaining the integrity of the donation sector system and ensuring alignment with organizational goals.

2.3 Operating Environment

hopeBD will operate on modern web browsers and will require an internet connection. It will interact with external databases and APIs for ingredient information.

2.4 Assumptions and Dependencies

Assumptions:

1. **Third-Party Integrations**: Successful integration with third-party services (e.g., payment gateways) is assumed; changes or limitations may impact functionality.
2. **Internet Connectivity**: Users are assumed to have reliable internet access; system usability depends on this.
3. **Security Compliance**: Assumption that security measures align with regulations; changes may require updates for compliance.
4. **Scaling and Performance**: System assumed to handle expected user traffic and data loads; exceeding expectations may affect performance.
5. **User Adoption and Engagement**: Assumption that users will actively engage with the software; user participation is crucial for achieving objectives.

Dependencies:

1. **Payment Gateways**: The project depends on third-party payment gateway services (SSLCOMMERZ) for secure online donations. Integration and proper functioning of these payment gateways are essential for collecting donations.
2. **Email Services**: The system relies on email services for sending notifications, updates, and communication with users. Dependence on email service providers for timely and reliable email delivery.
3. **Mapping Services**: If the project incorporates location-based features (e.g., event mapping), it may depend on external mapping services (e.g., Google Maps) for accurate location data and mapping functionality.

4. **Web Hosting Environment**: The software relies on a web hosting environment for deployment. Dependence on the hosting provider's infrastructure and services for system availability.
5. **Database Management System**: The project relies on the chosen database management system (MySQL) for data storage and retrieval. The proper functioning of the database is crucial for data integrity.

2.5 User Documentation

The user documentation components that will be delivered along with the "Hope: Empowering Charities through effective fundraising management" software include:

1. **User Manuals**: Comprehensive user manuals providing step-by-step instructions on using the system's features and functionalities.
2. **Online Help**: Interactive online help resources integrated into the application for users to access context-sensitive assistance.
3. **Tutorials and Guides**: A collection of tutorials and guides to assist both administrators and regular users in performing specific tasks within the system.

These documentation components will be delivered in digital formats accessible through the software's user interface. They will adhere to industry-standard documentation formats and best practices to ensure usability and ease of understanding for users.

3. System Features

3.1 Functional Requirements

For Donors:

- **REQ-1**: The system shall allow donors to enter their personal information, including name, contact details, and donation preferences.
- **REQ-2**: The system shall enable donors to add, edit, and delete their donation details, such as donation amounts, dates, and modes of payment.
- **REQ-3**: The system shall provide a user-friendly interface for donors to input their donation information accurately, including specifying donation amounts and selecting preferred payment methods.

For Collectors (Organization Managers):

- **REQ-1**: The system shall enable collectors to add, edit, and delete fundraising events, including event details such as event dates, locations, and goals.
- **REQ-2**: The system shall provide a user-friendly interface for collectors to manage event information efficiently, allowing them to track event progress and results.
- **REQ-3**: The system shall support the generation of comprehensive reports on donor contributions and event outcomes, assisting collectors in decision-making and strategy refinement.

For Admins:

- **REQ-1**: The system shall allow admins to create and manage user accounts, including user registration, role assignment, and user access control.
- **REQ-2**: The system shall enable admins to verify and validate newly created donation sectors, ensuring alignment with organizational criteria and guidelines.
- **REQ-3**: The system shall provide admin tools to monitor and maintain data privacy and compliance with security regulations.
- **REQ-4**: The system shall support secure integration with payment gateways, ensuring the protection of payment data and financial transactions.

4. Other Nonfunctional Requirements

4.1 Performance Requirements:

1. **Response Time**: The system should respond to user interactions (e.g., donation processing, report generation) within 2 seconds to provide a seamless user experience.
2. **Scalability**: The system should be capable of handling a growing user base and increasing data volumes without significant performance degradation.
3. **Concurrent Users**: It should support a minimum of 500 concurrent users without a noticeable decrease in performance.
4. **Data Load Time**: Large data sets, such as donor records or event information, should load within 5 seconds for efficient data access.

4.2 Safety Requirements:

1. **Data Backup**: The system should automatically backup data daily to ensure data recovery in case of system failures or data loss.
2. **User Data Privacy**: Strict data privacy measures should be in place to protect sensitive donor information. Compliance with data protection regulations, such as GDPR, is mandatory.
3. **System Availability**: The system should maintain a minimum uptime of 99.9% to ensure uninterrupted access for users and donors.
4. **Emergency Procedures**: In the event of system failures or security breaches, clear and documented emergency procedures should be in place to minimize downtime and data exposure.

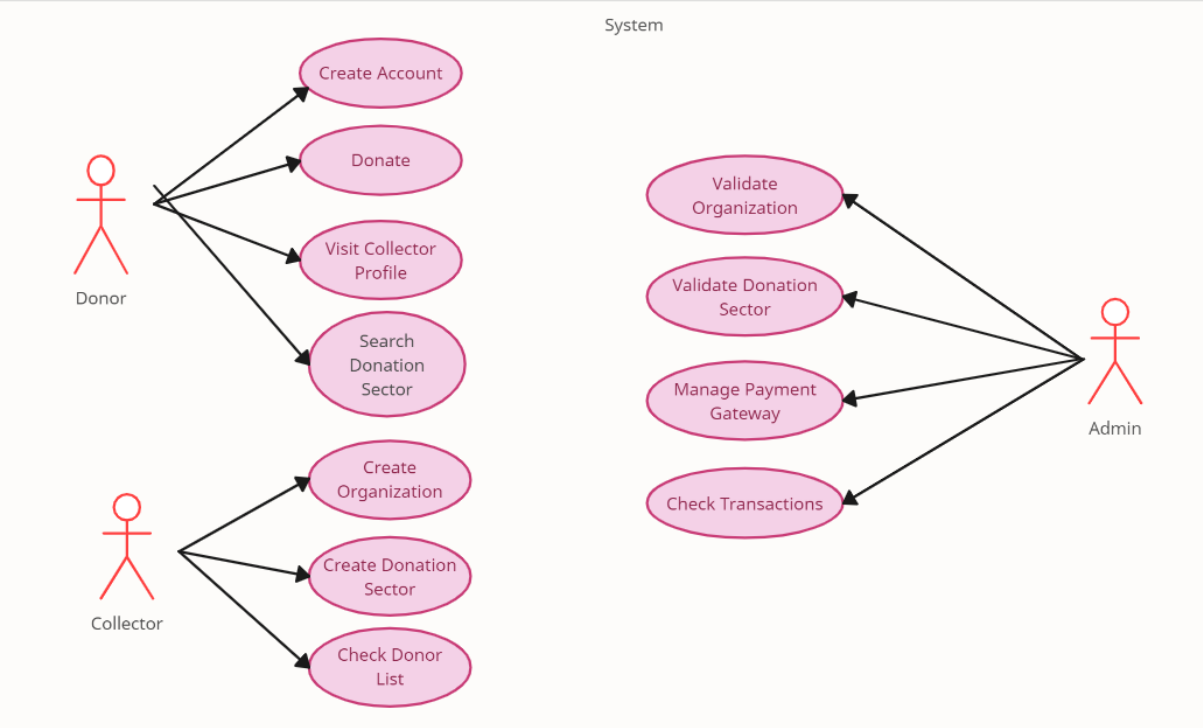
4.3 Security Requirements:

1. **Data Encryption**: All sensitive data, including donor information and financial transactions, must be encrypted using industry-standard encryption protocols.
2. **Access Control**: Role-based access control (RBAC) should be implemented to restrict access to system features based on user roles and permissions.
3. **Audit Trails**: The system should maintain audit logs to track user activities, including login attempts, data modifications, and security-related events.
4. **Vulnerability Scanning**: Regular vulnerability assessments and security audits should be conducted to identify and mitigate potential security threats.

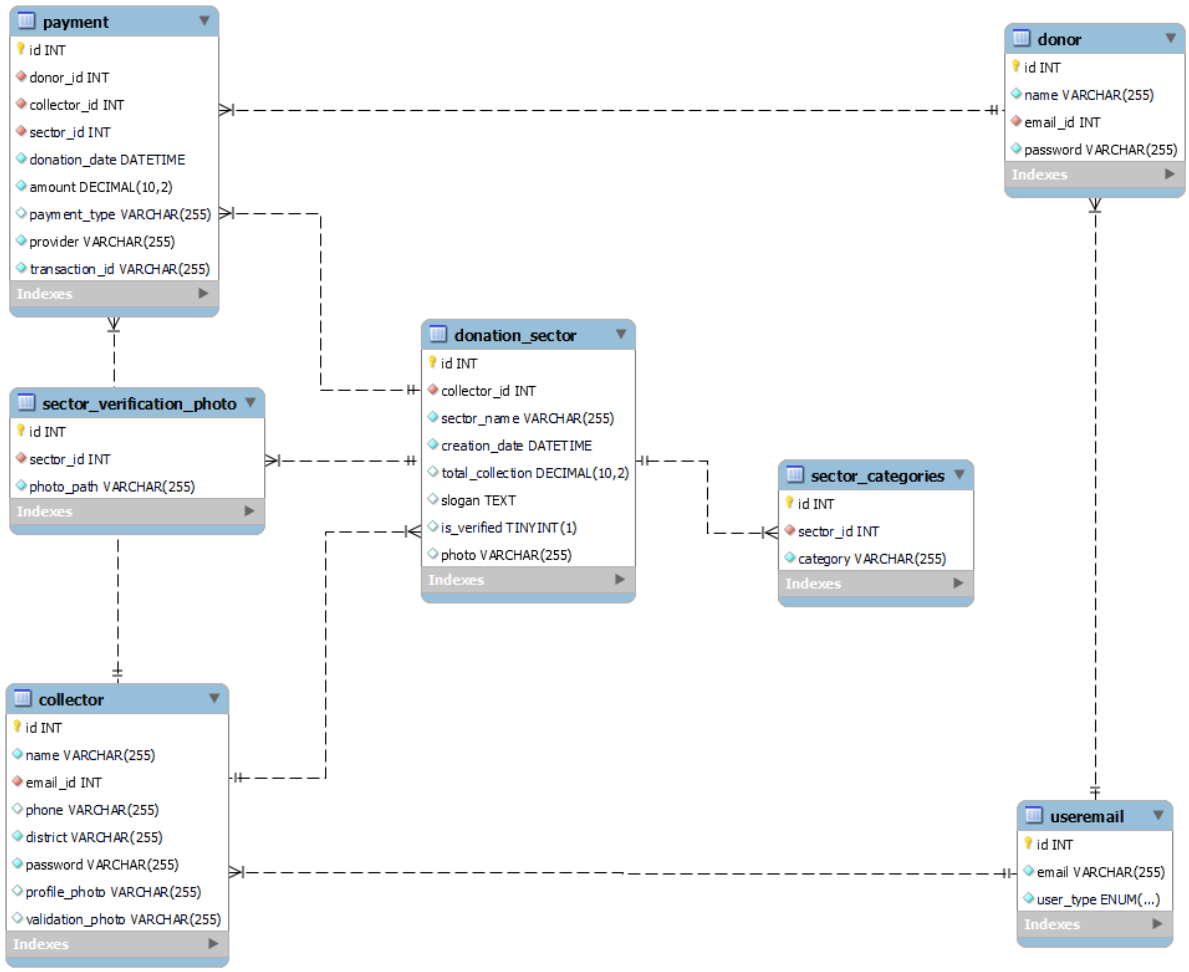
4.4 Software Quality Attributes:

1. **Usability**: The system should have an intuitive user interface with user-friendly navigation and clear instructions to enhance user adoption and satisfaction.
2. **Reliability**: It should be highly reliable, with minimal system downtime and data consistency to ensure trust among donors and organizations.
3. **Scalability**: The system should be scalable to accommodate growth in users and data, ensuring long-term viability.
4. **Maintainability**: Code should be well-documented, and system updates should be easy to implement for efficient maintenance.
5. **Performance Efficiency**: The system should efficiently use system resources and respond quickly to user requests to maximize performance.

Use Case Diagram



ER Diagram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sector_id INT
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provider VARCHAR(255)
transaction_id VARCHAR(255)
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name VARCHAR(255)
email_id INT
password VARCHAR(255)
Indexes
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photo VARCHAR(255)
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