

SDA - Assignment01
BSSE-4-A

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CHARITE-APP

Project Title

CharitE App

Project Description

CharitE is a donation app that respects your privacy. We understand that asking for help can be tough, so we've made it easy for you to give or receive support without any awkwardness.

With CharitE, you can create your own E-Wallet Account by connecting it to your bank account. Don't worry, we keep your bank details safe and give you a unique wallet address. This way, all your transactions are private and secure.

We ensure that all recipients are verified, so you can trust the process. Plus, if you ever need to deposit or withdraw cash from your E-wallet, we're here to assist you. Our goal is to make your experience as seamless and stress-free as possible.

Group Members

- Danial Saleem (Leader) - 221825
- Maarij Bukhari - 221803
- Muhammad Faseeh - 221839

Functional Requirements

- As a User, I shall be able to register an account with CharitE.
- As a User, I shall be able to securely login to my CharitE account.
- As a User, I shall be able to link my bank account to my CharitE E-wallet.
- As a User, I shall be able to change my password if I forget it.
- CharitE shall provide each user with a unique wallet address.
- As a User, I shall be able to initiate transactions from my E-wallet.
- As a User, I shall be able to choose my interests to filter out my feed.

- CharitE shall make sure that every user shall be verified so he can interact with other users.
- CharitE must verify the authenticity of each transaction.
- CharitE shall verify the identity of recipients to ensure trust and legitimacy.
- CharitE shall offer anonymous transactions to protect user privacy.
- As a User, I shall be able to create a PIN for my E-wallet.
- As a User, I shall be able to deposit funds in my E-wallet.
- As a User, I shall be able to withdraw my funds from E-wallet to my bank account.
- As a User, I shall receive a notification for every transaction made by me and other important updates.
- As a User, I shall be able to access my transaction history log.
- As a User, I shall be able to manage my account settings.
- As a Donor, I shall be able to calculate my zakat.
- As a User, I shall be able to interact with other user's posts.
- As a Receiver, I shall be able to make a post.
- CharitE shall support multiple languages to provide ease to users.
- CharitE shall regularly backup user data to prevent loss.
- CharitE shall provide chatbot services for user queries.
- CharitE shall be made compatible with various devices and operating systems.
- CharitE shall maintain version control to manage app updates and releases.

Non Functional Requirements

Performance

CharitE shall maintain a response time of 2 seconds for all users when they request the application.

The system shall handle at least 1000 transactions at a time without creating any issue to the performance of the application.

Security

All communication between the application and its servers must be encrypted using protocols to ensure the confidentiality of data.

The system shall implement multi-factor authentication for user login to enhance the security of user accounts.

Modifiability

The system shall allow the developers to easily add new features or modify existing ones without causing any effects on other parts of the application.

The system's architecture should allow for seamless integration of third-party services to accommodate future enhancements.

Interoperability

The system shall be compatible with modern web browsers such as Google Chrome, Mozilla Firefox, and Safari for seamless user experience across different platforms.

The system shall be compatible with different operating systems like Windows, Mac, Linux to fulfill the requirements of all the users.

Usability

The user interface of CharitE must contain complete information about each feature so that it can be easily understood by all the users.

The system should provide clear and complete solutions to error messages pop-up to assist users in resolving issues effectively.

Availability

CharitE's app shall be available 24/7 throughout the year, similar to Twitter. The system should be accessible to users 24/7, allowing them to use CharitE at any time without restrictions.

The app must display basic user information offline to ensure uninterrupted access to essential features, enhancing availability.

Testability

Test cases should be clearly defined and documented to cover all functional and non-functional requirements.

The system should provide tools and environments for conducting performance testing to validate its scalability and reliability under varying loads.

Scalability

CharitE shall be able to expand its capacity with an increasing number of user requests by adding new server instances.

CharitE database architecture should allow for partitioning and sharding to handle a sudden increase in data volume without performance decline.

Portability

CharitE's front-end must be designed using responsive web design principles so that it can ensure a consistent user experience across different devices such as mobile phones, laptops, and tablets.

CharitE's back-end should be containerized by utilizing Docker to facilitate deployment and execution across various cloud providers and local settings.

Compatibility

CharitE's front-end components should be compatible with major web browsers like Google Chrome, Microsoft Edge, and Safari, ensuring a consistent and well-founded user experience.

CharitE's APIs must support OAuth 2.0 standards for safe connectivity with third-party platforms for user authorization and data exchange.

Reliability

CharitE should have automated backup and recovery methods with a recovery time objective of less than an hour to guarantee data availability and integrity in instances of hardware failures or data loss.

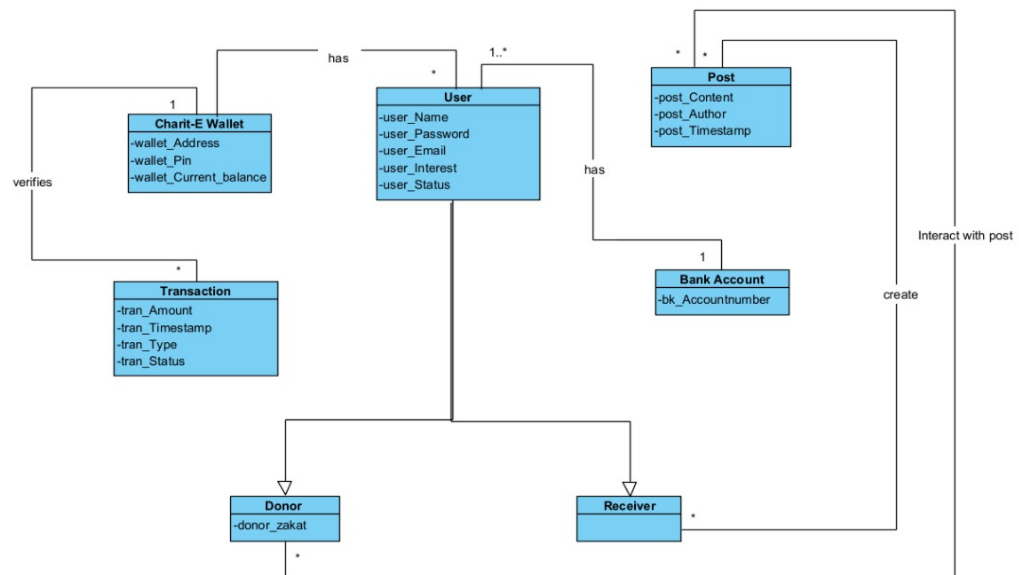
CharitE's servers must have a fault-tolerant architecture with redundant parts and replacement capabilities, ensuring at least 99.99

Maintainability

CharitE's codebase should adhere to modular architecture principles, resulting in a code change effect assessment time of fewer than two hours, which will allow developers to upgrade or replace different modules without disrupting other components.

CharitE's documentation must be thorough and latest with a maximum documentation review cycle time of three days. It should give developers precise instructions and pointers for expanding and maintaining the application.

Domain Model



Member-Task Assignment Table

-Maarij Bukhari

Q4

-Danial Saleem

Q5 (a) + Q6

-Muhammad Faseeh

Q5 (b) + Q6