Donors Choose

CSE 4402 – Final Project

Project Blueprint

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**Donors Choose**

This project attempts to provide a platform where information regarding the activities of different charity organizations can be accumulated. The development team hopes that the project will make it convenient for users to easily find charities that provide the specific services they are looking for and contact or donate to them, thereby increasing the overall number of donations received by the charities. The project may also act somewhat as a social media platform for charities, where they can promote their activities and keep the people interested in their organization up-to-date.

Throughout the application, many different accounts are used. The credentials for these accounts are stored in a file on the personal drive of [aveenalvi@gmail.com](mailto:aveenalvi@gmail.com).

## Donor Accounts

### Login and Registration

Regular users are able to register for an account through the application. A unique email address and a password of at least 6 characters is required to create the account. Once a valid email address and password is entered, a donor account is created for the user, and they are taken to their homepage. If the user has already registered, they are able to login using a similar process.

### Navigation

Every page within the application, except for the payment portal, has a navigation menu on the top right corner. Clicking this reveals a sidebar with options to go to the homepage, the user profile page and to logout.

### Homepage

On the homepage, the user is greeted with a simple interface with just a search bar. A few suggestions for donation categories are shown on the homepage, and clicking on any of them performs a search for the category. The search can of course be done manually as well, and charities can also be searched for manually.

The results of a particular search are shown as cards. For a particular search, any charities that have a name matching the search criteria will be shown, and any charities that fall into a category that matches the search criteria will also be shown.

Each result card shows the name of the charity along with its description. A background image is also shown. Clicking on a particular card takes the user to the profile page for that charity.

### Charity Profiles

On the profile page for a particular charity, users are again able to see the background image, name and description of the charity. Additionally, they are able to see a list of activities that the charity has provided.

The activities appear as a horizontal slideshow of cards. Each activity has its own card, with its name, a brief description and a background image.

Lastly, there is an option to make a donation to the charity. Clicking there will take the user to a page where they can make a monetary donation.

### Donation Pages

The initial donation page the user is taken to is for monetary donations. Here, they must simply enter the amount of money (in BDT) they wish to donate. Upon clicking the donate button, they will be taken to the payment portal.

On the same page, users will find an option to make a non-monetary donation. Choosing this will take them to another page, where they will be able to fill up a form with their name, email address, phone number and the location where they want to meet a representative for the charity organization who will receive their donation. Additionally, they must provide information about what they are donating. On the non-monetary donation form, only the name of the donor, their email address and what they are donating must be provided. The other information is optional. The donor can then submit the form.

### Donor Profile Page

Donors are able to access their own profile page from the navigation menu. Here, they will find information about their email address, which is the only information that is stored by the system in order to uniquely identify donors. They will also find their donation history for both monetary and non-monetary donations. Each entry records which charity received the donation, the date of the donation and what was donated. For monetary donations, the amount donated is shown.

## Charity Accounts

### Login and Registration

Charity organizations will not be able to register for an account through the application. They must contact the development team at [donorschoosebd@gmail.com](mailto:donorschoosebd@gmail.com) and request an account. At the time, they will also be asked for any information which can be used to verify their legitimacy, after which they will be provided with their login credentials. They can use these credentials to login to the application in the same way as donors do.

### Charity Profiles

Representatives for charity accounts are unable to access any part of the application other than their own profiles. They are able to view the same information that donors do, barring the option to donate, which is replaced with an option to edit their profile.

Choosing to edit their profile will allow them to edit the name and description of the charity, as well as the background image. The background image can be changed by clicking on the existing background image, which will open the image picker. These changes are saved once the save button is clicked.

Additionally, they will also be able to add and remove activities using the respective buttons in the activities section. Choosing to add an activity will open a small prompt to enter the name and description of the activity. Optionally, a background image can also be chosen. Clicking on save will immediately add the activity to their activity list, even if the save button on the main page has not yet been clicked. To remove an existing activity, the small cross on the top corner of the respective activity must be clicked. Again, the activity will be immediately removed, even if the save button on the main page has not yet been clicked.

## Background Work

### Firebase

The entire application’s backend is provided by Google’s Firebase.

The Firebase Authentication process is used for authentication purposes for both types of accounts. Once a user is registered, their email address and the type of account is recorded in a document with the unique ID provided by the authentication process, in a collection for users in Firebase Firestore. This information is retrieved when the user tries to login so that they can be taken to the appropriate page within the application.

Every charity has its own document with the unique ID for the charity account, in a separate collection for charities. Here, the name, description and tags for the charity are recorded. There is also a link to the background image used. The image itself is stored in Firebase Storage, in a folder for background images. The image name is the same as the unique ID given to the charity account. This information is retrieved whenever a search is made or a particular charity profile page must be shown in the application.

Inside each charity account document, there is a collection for the activities for that charity. Each activity is record as a document with a unique ID, and holds the name and description of the activity as well as the link to the background image for the activity. The images are stored in Firebase Storage, where there is a folder for activity images, with subfolders for every charity.

Every donation made by a donor is recorded in a separate collection in Firebase Firestore. Each donor has their own document, with the donors unique ID, and the document stores arrays for the charity donated to, the date of the donation and what was donated. This is retrieved to show donors their donation history.

Lastly, there is another collection on Firebase Firestore that stores the credentials used by the application itself, such as the App Code used by the JavaMail API. This is retrieved as required.

### JavaMail API

When donors make a non-monetary donation, the information is sent to the respective charity as an email. This is done using the JavaMail API. The official email address of Donors Choose, [donorschoosebd@gmail.com](mailto:donorschoosebd@gmail.com), is used for this purpose. An App Code is required, which is retrieved from Firebase Firestore as described above.

### SSLCommerz

The payment gateway used for monetary donations is provided by SSLCommerz. At the moment, a test account is being used. The credentials for the account is available as plaintext within the application. Donors are able to choose from a range of payment options. Once they have chosen an option, they are taken to a new page to provide their credentials. Once this information is submitted, the actual payment is made. If the transaction is successful, the donor is taken back to the profile page of the charity they donated to. If the transaction is unsuccessful, they are taken to the first page within the payment gateway, where they can choose an alternative payment method.

## Discarded Plans

The original version of this application was a desktop application built in Java using JavaFX. This included an SQLite database being synced manually with a private DropBox account via the DropBox API. The final version of the desktop application can be found in [this](https://github.com/chocolatekhan/DonorsChoose/tree/e65afab6dc6091acba7d9956b52f6d40e87642b3) commit.