

1. Introduction

In the modern world, there are a lot of social problems which should be handled by people. Environmental problems, violence against women, poverty are among huge problems of the modern world. According to TUIK (Turkish Statistical Institute), poverty rates are increasing year by year essentially after 2017 [1] when Turkish lira lost its value compared to the US dollar. These problems motivated our group to develop an app which helps people who suffer from poverty. Our senior group's aim is to help these people and try to connect them with people who have good financial status. Another goal of app is provide and encourage people to recycle. App name is "HHelp". There are a lot of applications today which provide these facilities but most of them use third people. On the other hand, our application directly connects people in need with people who want to help. Another difference of HHelp is using today's technologies. We will implement blockchain to our application as a result people who donate money can track their money and its final destination. This feature brings trust to the application since people can actually see the end point of their aid. Another advantage and difference of HHelp is socializing. People will enjoy when they donate, when they arrange events and go to help. HHelp will play social platform role also that is why it will be more fun when people help each other.

1.1. Description

HHelp will be a mobile application which will focus on people who needs help and volunteers to help people in need. The target of the application is to get users all over the world. With the help of this application, people can find people in need around them or far away and try to help them in every way they can. Besides offering help to people, HHelp will also allow people to socialize and meet with people all over the world. HHelp is aiming to help people realize people in need around them and to help them as much as one can.

HHelp is an application where people can socialize also. It will be fun to donate in HHelp because instagram will play an important role in app. User can register with instagram, twitter and gmail. To have fun who have verified user or a lot of followers the app will automatically give them “Popular User” status. Main purpose of this facility to attract popular people to our app. In this way we will encourage people to help and involving recycle issue.

When the user registers to the application, to prevent fake users and bots, two-step authentication will be required. In this way we can avoid having unrelated and unused accounts. Firebase API will be used for two-step authentication.

Users will have their profile that will include their personal information such as their profile photo, location, biography, ranking, people who are following them and people they are following, group and event list of the user.

What makes HHelp innovative is that Users will help people, socialize and in the meantime they will also be able to make donations by blockchain which will ensure transparency for users. They will be able to track donations that is made and can make sure that money is delivered to the spot or people that needs help. All transactions will be made by cryptocurrencies.

1.2. Constraints

1.2.1. Implementation Constraints

- Github will be hosting the source code of the project for the supervisor to see the contribution and progress.

- The application will be deployed on Android as initial. It can also be extended to IOS system and website.
- Application will follow the Object Oriented Programming approach.
- Open source libraries will be used.
- Application will be developed using React Native for front-end and Node.js for back-end.
- Blockchain structure will be used to add reliability and transparency to the application.
- Firebase API will be used for two-step verification.

1.2.2. Economic Constraints

- The application will be offered to users for free.
- To be able to publish the application on Google Play, \$25 USD is required by the Android platform. [2]
- Using open source libraries does not require any cost.
- The project will not be funded by any organization. All costs will be paid by the team members.
- For two-step verification, Firebase API offers first 10000 sms for free. After exceeding the free quota, each 100 sms costs \$5 USD.

1.2.3. Ethical Constraints

- The application will not share sensitive information about the user with third party.
- Location of the user will be used for better suggestions and details about the location will not be shown to others.

1.3. Professional and Ethical Issues

- The application will share economic status of the people who needs help.
- The data of the users will not be shared with any third parties. All the data of the user will be encrypted.

2. Requirements

2.1. Functional Requirements

2.1.1. User Profile

- Anyone with a valid email address can sign in or sign up to the application.
- To create an account, there will be a two-step authentication.
- Users will be able to upload a profile picture.
- User's location will be taken and kept by the application.
- Users can add information about themselves in biography part.
- The user can follow other users.
- The user can be followed by other users.
- The user can follow events.
- The user can be a member of a group.
- The user can create a group.
- The user can create an event.
- The user can donate money to an event.
- The user can donate money to make the event seen by more people.
- Users will have ranking for two categories; donating money and attending events.
- Users will be able to send/receive messages to/from other users.
- Users can attend group chats.
- Users will be able to search for nearby events/groups.

2.1.2. Groups

- Groups will be created by users.
- There will be group chat for members to communicate better.
- A group can be private or public according to the preference of the group admin.
- A membership request is needed for joining private groups.
- Members of the groups will be able to share posts/pictures.

- Members of the group will be able to comment on posts/pictures shared in the group.

2.1.3. Events

- Events will be created by users.
- Events should be appropriate for the purpose of the application.
- The user who creates the event will be the admin of the event and will have some privileges.
- The admin of the event can put a deadline for the event. If he/she does so, event will be automatically deleted after a specified time.
- The admin of the event will be able to delete the event when he/she wishes to do so.
- The admin of the event have to specify the kind of the event such as if the event needs only donation or attendant or both.
- Events will be categorized according to the location, time and type of the event.

2.1.4. Group Admin

- A user will become a group admin after creating the group.
- For private groups, admin will be able to choose the members by accepting/denying the joining requests.
- A group admin will be able to remove a certain member from the group.
- An admin will be able to ban a member from the group. In that case, the group will not be seen by that member.
- An admin can close the group chat if he/she wishes to do so.
- A group admin will be able to close the group.
- The group admin will be able to freeze the group.
- Group admin will be allowed to give the adminship to another member.
- Group admin can delete unwished posts from the group.

2.1.5. Donation

Blockchain technology will be used in donations and users can use cryptocurrencies like Bitcoin (BTC), Bitcoin Cash (BTC) to donate. Other cryptocurrencies can be added in development stage. In this way they can trace their donations.

2.1.6. Ranking

In application, there will be ranking according to donations and attendance of the users to different events.

- User will gain points to achieve higher status according to his/her donations.
- User will have attendance level according to participating in different events.

2.2. Non-functional Requirements

2.2.1. Usability

- The system will have a user-friendly interface to ease the usage for users.

2.2.2. Reliability

- The system should be able to handle high number of usage at the same time.
- The system should be able to operate without failure.
- Data loss should not happen if system crashes.
- The system should be secure enough not to share any kind of data with third parties.
- In the case of a system crash, transaction will not happen.

2.2.3. Extensibility

- The system should allow developers to add new feature changes.
- The application will be updatable.

2.2.4. Modifiability

- The system should have minimum dependencies in order to make updates easy.

2.2.5. Transparency

- The system should allow users to trace donations..

2.2.6. Performance

- The response time of the system should be not more than 1 second.
- User input should be acknowledged in less than 1 second.
- The system should be able to handle high amounts of data.

3. References

[1] <http://www.tuik.gov.tr/UstMenu.do?metod=temelist>

[2] <https://support.google.com/googleplay/android-developer/answer/2528691>