Bilkent University

Department of Computer Engineering

Senior Design Project

Project short-name: HandsGiving

Project Specifications Report

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Contents

1 Introduction

With the increase in the number of people in need in the world and the extension of human life, solidarity has become more important. People started to need each other more both materially and spiritually. However, the distance between people and their inability to communicate easily with each other made it more difficult to cooperate. HandsGiving is an application intended to be a solution to all these problems faced by people. It will provide a platform for people in need of help to have their voices heard. Those people who are in need will have the opportunity to express their needs to volunteers through the application.
The application will also be designed to reduce the negative effects of the COVID-19 virus on people's social life[1]. As part of COVID-19 measures, elderly people had to be restricted from going out to the streets[2]. Both the elderly who were left alone in their homes due to these restrictions and those who already had fewer people around became more in need of social activities and their needs became more difficult to meet. Thanks to the video chat feature that HandsGiving will offer, the elderly will have the chance to meet with different volunteers and meet their social needs.
In the rest of this report information about HandsGiving, its constraints, professional and ethical issues, functional and non-functional requirements will be explained in detail.

1.1 Description

In our project, we are going to design an application that will provide a platform to bring volunteers and people who are in need of help together. Through our application, volunteers will be able to help people who are too old to meet their needs and people who are facing financial difficulties. Elders will have the opportunity to find volunteers who will help them to meet all their daily needs together with socializing. The application will make it possible for elders to have their domestic necessities, small repair works, and the rest, with the help of volunteers. Our application will also provide video calls which will help old people to socialize and voice their needs in a completely understandable way. Taking the elders who are not familiar with complex applications into the account, the interface of the application will be practical for the usage of them. On the other hand, apart from elders, needy people can share their demands such as their domestic necessities, and the rest, through our application and it will assign the nearest benevolent to meet the demands of them.

The application will not be for profit in any way, neither for the volunteers using the application nor for our project group. People who want to use the application must first register for free. There will be two types of membership, voluntary and needy. Needy people will share what they need by creating a post in the application and after the person to help them is found, the post will be shared with that person. Volunteers will choose in which regions they can help and start waiting for the post to be sent by the application. It will be up to the volunteers to accept the post or not. The information in the post shared by the needy people can only be seen by the volunteer assigned by the application. The assigned volunteer will not be able to see the personal information of the needy until they agree to help. Those

who want to use the video call feature will be able to share their requests publicly and volunteers will be able to see everyone's video call requests.

HandsGiving will be available on Android platforms, so Android Studio IDE will be used during the development process of it. The database of the application will be maintained and modified through MySQL. In HandsGiving, there will be an artificial intelligence system that will offer suggestions to the volunteers in their preferred areas according to the help they have made before.

1.2 Constraints

1.2.1 Implementation Constraints

- HandsGiving will be developed as a mobile application.
- Android studio will be used for implementation.
- Git and GitHub will be used for version control and collaboration.
- Java will be used to develop the mobile app.
- The application will be built under Object-Oriented Programming paradigms.
- Common API will be used to control the objects and get info.
- Common API will be used to get the location of people[3].

1.2.2 Economic Constraints

- HandsGiving will be a free mobile application for all users.
- Free and open-source libraries and APIs will be used.
- The web page of the application will be on the free Github domain.
- Maintaining servers and releasing the software in the Google Play Store may have a one time or continuous cost[4].

1.2.3 Ethical Constraints

- Personal information and private data of users will not be shared with any third party applications and corporations.
- User accounts can be accessible with authentication.

1.2.4 Sustainability Constraints

- To develop the usability of the mobile application, users' feedback will be taken into consideration.

- The application will be updated by developers to make the application more user friendly according to the feedback.

1.2.5 Social Constraints

- With different types of the user interface, the application can be easily used by every person.

1.2.6 Reliability Constraints

- The application will be tested on different conditions in order to be sure about the robustness of the functionality.
- The third-party APIs will be tested in order to check their performance while using them in the application.

1.3 Professional and Ethical Issues

- The consent of the user is required since we need to share the addresses of users when a user asks for help.
- Without the permission of the user, personal information will not be shared.
- After permission to share the address of a user, who may want to withdraw. With the withdrawal request, the address of the user will not be available.
- Licenses for third-party APIs and libraries will be checked before usage.
- According to negative feedback, a user account may be deleted after an investigation process.
- Benefactors gain points by helping people. The people who reach enough points and get well comments can go to help people's housework.

2 Requirements

2.1 Non-Functional Requirements

2.1.1 Usability

- The application should be available on an application store since the user community of the program should be able to contact each other by downloading the application over an application store.
- The application should have an option that allows an easier interface to the old people. This option can be used by users who are not old also.

2.1.2 Reliability

- The application should not mix users during the financial or social support of a benevolent. Tests for this requirement must be made.·

2.1.3 Privacy and Security

- The application should not use the GPS information of a user when it is not necessary. The GPS information should be kept private and protected for any possible abuse. GPS information should not be used without consent.

2.1.4 Efficiency

- The application should be able to run smoothly in older generation smartphones since the user community of the application will be including financially suffering people.
- The application's total file size should not take more than 100 MB in order to make it easier to store and access.

2.1.5 Extensibility

- The object documentation of the application should be systematic and open to any upgrades such as new functional/non-functional requirements or user interface changes.

2.2 Functional Requirements

2.2.1 System functionality

- A login and register system for the application database should exist for any possible fraud action.

- Users who are willing to help financially should be able to help using their credit cards easily.
- The system should have a list of help requests with filter parameters such as social/financial to help benevolent users.
- The system should include the personal information of a user in order to make it easier for other users to decide whether they want to help or not.
- The system should be available on the application store of the according platform for free.
- The system should be able to show the previous helping activities of a user in that user's profile.

2.2.2 User functionality

- Users should be able to login/logout or register through the application.
- Users should be able to create their own profiles and publish their personal information.
- Users should have the option to hide their personal information which is not required to show.
- Users should be able to create help requests either socially or financially.
- Users should be able to help any user who has a specific help request. Help requests can be found from either a profile or the help request list which is also mentioned in the system functionality.
- Users should be able to accept or decline a help request. They do not have to accept every response to a help request.
- Users should be able to download the application from the application store.

3 REFERENCES

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