HEART HOPE HELP

Prepared For:
Nathan Cho, Pastor
Bellevue Sarang Church

Prepared By: Hope
Charlie Ang, Tai Tran, Jeannie Lee, Yonathan Yonathan
Software Engineering, Seattle Pacific University

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1.0 Executive Summary

Hope is a team of prospective software engineers in their final year of college who are dedicated to providing clients with the best possible system to fulfill their needs. The team consists of Charlie Ang (leader), Jeannie Lee (recorder), Yonathan Yonathan (librarian), and Tai Tran.

Bellevue Sarang Church (BSC), a local community Church coordinated by Pastor Nathan Cho, has consulted Hope to design and implement an application to assist homeless individuals and to further educate the public on the issue of homelessness. The system will be used to benefit the homeless around the city and surrounding communities, all while helping educate the greater public on the issue of homelessness.

Hope has assessed the System Request provided by Bellevue Sarang Church and deemed it a feasible project with little to no additional resources required. The proposed system will be named HeartHopeHelp (HHH). HHH will allow clients using the application to locate homeless individuals around their current position and read upon the homeless individual's biography and story. The client can then contribute to the homeless by finding them using the homeless individual's last known location. Because HHH is a user-based application, users will also have the ability to add and pinpoint the spotting of a homeless individual on the application, in which they are able to create a profile of the homeless individual they have talked to or interviewed. So essentially, users of this application can locate homeless individuals to read on their biography and contribute if they desire, users can help by marking the location of a homeless individual with the homeless individual's details, or users can do both. The main beneficiary from this system will of course be the homeless individuals themselves because their stories, made possible to generous/caring viewers thanks to this system, will be getting the help they need from users to move on with their lives. To help achieve this, Hope will be developing a mobile application as well as database management to ensure that all the functionalities set forth by BSC are met beyond expectations.

2.0 Project Description

2.1 System Description and Rationale

HeartHopeHelp is built for users to view profiles of nearby homeless individuals. Users can read the homeless individual's biography and read more into their life stories if provided. This in turn helps educate users on homelessness because it may help eliminate any previous stereotypes or preconceptions users may have toward the homeless. It also helps the homeless individuals themselves because they are simply trying to live their everyday lives and, they too, need the necessities to move on with their lives. The hope is that users will show compassion and generosity toward the homeless, and assist them with basic needs.

2.2 System Scope

For this project, we plan to implement a mobile application in which users will have the capability to use their current location to locate nearby homeless individuals who have been spotted at that specific location. Users will have the ability to add a spotting of a homeless individual to the application, as well as a more detailed biography of the individual. This application will be mainly user-interactive where users will can add the location of a homeless individual, and where users can also locate homeless individuals (and hopefully make some sort of contribution). Our primary goal is to hopefully educate people who want to contribute and help make a difference in a fashion that will make it easier for them to learn and locate certain individuals.

Ideally, users will have interacted with the homeless to gain more insight into their personal life and how they ended up in the unfortunate situation in which they are in now. The application will pinpoint the exact location of where the homeless individual was encountered (homeless individuals tends to stay around the same general vicinity), the name of the individual, an image of the individual (if consent is provided from the homeless individual), some personal information such as age, height, hometown, and most importantly, the life story provided by the homeless individual (this can be a video of the individual speaking or it can be written up). To get the most out of this application, a picture and a meaningful life story will be essential to help inform the public about that certain individual, versus just encountering and passing by the individual on the street without giving that person a second thought.

On the other hand, users using this application will have displayed to them homeless individuals that were marked nearby the user's current position. The user can click and read details about that individual that they otherwise wouldn't have known about if it wasn't for this application. If the user decides to, they can then contribute to the homeless individual by locating and assisting the homeless individual in whatever fashion they would like.

2.3 System Development and Constraints

The following are constraints on the implementation of HeartHopeHelp:

- **Performance Feature:** The cloud database will need to be large enough to support any number of users
- **User-Interface:** The system will need to be user-friendly and easy to use as clients will vary by age and experience with technology
- **Compatibility/Portability:** This system will only be available on the Android mobile phones to begin with. Since clients will need to have access to our service from their personal devices, multiple operating system will be required. We hope to expand this to iOS as well.
- **Method of Payment:** Contributions will be restricted to being made only directly from users themselves. We hope to integrate a feature where contributions are immediately made available to the homeless individual users choose (through reloadable card, etc.)
- **Security Concerns:** When encountering the homeless, users need to be concerned about their own safety. Hope will need to make sure profiles are legitimate, no one intends to use this app to harm the homeless, and users are safe when encountering the homeless.
- **Management Issues:** Due to our limited resources, we are currently not available 24/7 for system maintenance and customer support.
- **Legal Constraints:** Users use the application at their own risk and we are not responsible for any liabilities resulting from the use of this app. We also need consent from the homeless to publicize their personal information.

CPE/CSC 415n – Team and Project Proposal

PART 1 à TEAM
Team Name →

Hope

Team Members
(Initial) Leader → Charlie Ang (angc@spu.edu)

(Initial) Recorder → Jeannie Lee (leej64@spu.edu)

Librarian → Yonathan Yonathan (yonathany@spu.edu)

Members → Charlie Ang, Tai Tran(addytran@spu.edu), Jeannie Lee, Yonathan Yonathan

PART 2 à PROJECT
Working Name of System →

Heart Hope Help

Project Sponsor →

Name: Bellevue Sarang Church
Contact: 425-999-0917 (Nathan Cho)

Project Scope →

For this project, we plan to implement a mobile application in which users will have the capability to use their location services (current GPS location) to locate nearby homeless individuals who have been spotted at that specific location. Users will have the ability to add a spotting of a homeless individual to the application, as well as a more detailed biography of the individual. This application will be mainly user-interactive where users will be able to add the location of a homeless individual, and where users can also locate homeless individuals (and hopefully make some sort of contribution). Our primary goal is to hopefully educate people who want to contribute and help make a difference in a fashion that will make it easier for them to learn and locate certain individuals.

Ideally, users will have interacted with the homeless to gain more insight into their personal life and how they ended up in the unfortunate situation in which they are in now. The application will pinpoint the exact location of where the homeless individual was encountered (homeless individuals tends to stay around the same general vicinity), the name of the individual, an image of the individual (if consent is provided from the homeless individual), some personal information such as age, height, hometown, etc, and most importantly, the life story provided by the homeless individual (this can be a video of the individual speaking or it can be written up). To get the most out of this application, a picture and a meaningful life story will be essential to help inform the public about that certain

individual, versus just encountering and passing by the individual on the street without giving that person a second thought.

On the other hand, users using this application will have displayed to them homeless individuals that were marked nearby the user's current position. The user can click and read details about that individual that they otherwise wouldn't have known about if it wasn't for this application. If the user decides to, they can then contribute to the homeless individual by locating and assisting the homeless individual in whatever fashion they would like.

Why you have chosen this project →

We have chosen this project because the homelessness crisis continues to be a major problem in cities across the nation, especially locally here in Seattle. In response to this crisis, our idea is to create a system that will help educate the public and the surrounding community in regards to homelessness by providing more insight and help shed light into specific homeless individuals. This system will help restore any stereotypes people may have in regards to homeless individuals by providing the homeless individual an opportunity to voice their life stories and how they ended up in their position in which they belong today. Each individual has their own unique story and we think it is important for the public to at least be aware of these stories. All in all, our hope is that this system will be an outlet for homeless individuals to broadcast/inform the public on their struggles and current situation. Hopefully, this system will educate/inform/engage users and the surrounding community with hopes that they can somehow contribute to the homeless (whether that be providing monetary value, food, shelter, etc.). Our hope is that this system will one day help drastically reduce the homelessness population on the streets, and most importantly, eliminate stereotypes people have regarding the homeless.

Team Preparation →

Our chosen development environment is: Mobile Application (preferably Android to begin with and hopefully also IOS if time permits)

Previous coursework or practical experience:
·   Android Mobile Dev experience (CSC 4800)
·   Some database familiarity (SQL/Cloud)
.   C++, Java experience

SYSTEM REQUEST – (HEART HOPE HELP)

Project Sponsor[1]

Name: Nathan Cho   Email: wabora@gmail.com
Organization / Department: Bellevue Sarang Church
Phone: 425-999-0917

Opportunity Statement[2]:

Our Church has been doing some homeless outreach for 6+ years and we are seeing an increase in the homeless population around the Seattle metro area. As a Church that has been actively assisting and helping the homeless, we understand that the homeless have their own unique stories that resulted in their current situation, and we would like to educate the public or make the public aware of each homeless individual's stories.

Proposed Product
Background and Context[3]:

There are around 10,000 homeless individuals currently living on the streets of Seattle. I believe that part of why people are not contributing to the homeless is because of their preconceived stereotypes they have against the homeless. If only there was a way in which the homeless can voice their life stories for the public to hear, I think this would better educate and inform the public on the current homelessness situation, and maybe even feel the need to help out a certain homeless individual based on their unique story. Using this system, I am envisioning that the users of this system will not only be for members of our Church, but also for the public (app users) to give to the homeless people.

Initial Vision and Scope[4]:

- Allows users to open the application and view all homeless people that have been tagged around their location (within a certain vicinity e.g. 1 mile)
- Allows user to enter a location and view all homeless people that have been tagged around their location
- Allows users to pinpoint the location of a homeless person and create a profile (picture, name, age, hometown, story, etc.)

Stakeholders[5]:

- Bellevue Sarang Church
- Nathan Cho (pastor)
- Homeless individuals
- Users - anyone using the app

Expected Benefits:

- Homeless individuals will benefit directly from user contributions (money, food, shelter, etc.)
- Increase contributions made to the homeless to help lower the homeless population
- The biggest benefit is to help educate the public on the homelessness issue and helping users learn more about certain homeless individuals instead of ignoring and judging based on skin color, etc.

Other Issues or Constraints to be considered (what else you would like us to know):

- Method of Payment: should contributions be made to the homeless in person with cash, donate to a reloadable card, etc.
- Ensure that users will make legitimate posts
- User safety when encountering a homeless

3.0 System Services

3.1 Introduction

The system services of Hope have been divided into three sections: functional requirements, use-case diagram, and use-case descriptions. Functional requirements are the actions of the system and what the system must do. Use-cases uses a common set of diagramming techniques to model systems development using shapes and lines to represent the different interactions of a system. Use-case descriptions contain all the information needed to build the diagrams. The basic parts of use-case descriptions include an overview of information, relationships, and the flow of events. For better performance of the system, all three parts of services will be profoundly confirmed by authorized developers.

The use-case diagram section of the documentation will portray the associations between various requirements of the system and their corresponding actors or causes. The model will be conveyed as Unified Modeling Language (UML). Use-cases uses a common set of diagramming techniques to model systems development using shapes and lines to represent the different interactions of a system. The diagram has three major components that are defined below:

- **Actors -** human users or other interacting systems
- **Associations –** links an actor with a use case with which it interacts with
- **Use-cases –** a major process that the system performs and that benefits an actor or actors in some way
- The diagram also contains extend relationships. Extend relationship incorporate optional behavior into a base use case.

Actor	Association	Use-Case
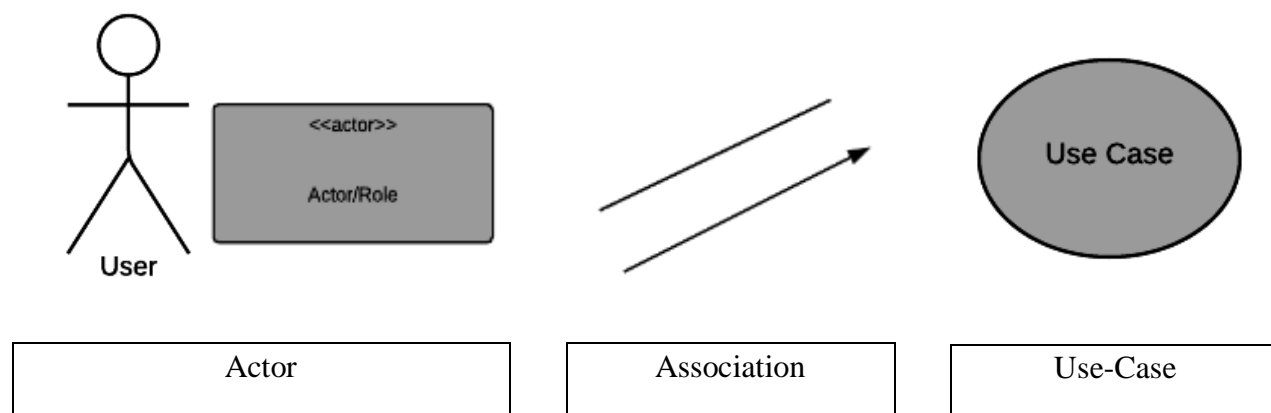
3.2 Functional Requirements

Login/Registration New User [Use Case 1]

- Users will be able to register or login on their Android-based phone. New users will be able to create a new account and previous users will login the application.
- Initial Acceptance Tests:
    - Create new user using email/password
    - Attempt to create account using invalid email
    - Attempt to create account using an email that has already been used
    - Attempt to login using wrong email or password

Allow Users to View Profiles [Use Case 2]

- Users should be able to view profiles of homeless individuals within a certain radius from their current location. They can click on a marker to view a more detailed profile including name, photo, personal story, and location.
- Users should be able to navigate directly to the last seen location of the homeless individual if they wish to contribute to the homeless.
- Allow users to suggest an edit to a homeless profile for admin review
- Initial Acceptance Tests:
    - Click homeless individual marker to view profile
    - Attempt to view profiles when location services is disabled
    - Attempt to view profile when there is no internet connection
    - Attempt to move around and see if current position updates

Allow Users to Add New Homeless Profile [Use Case 3]

- Users should be able to add a new homeless profile to the application once they have met and talked with an individual. With the homeless individual's consent, users will be able to input some information about the homeless individual, including name, photo, and personal story. The location of where the user currently is will be pinpointed as the location of the homeless individual.
- Initial Acceptance Tests:
    - Handle case when all required fields of profile are not entered
    - Attempt to submit new homeless profile
    - Attempt to cancel before submission
    - Attempt to add new profile when location services is not enabled or with no internet connection
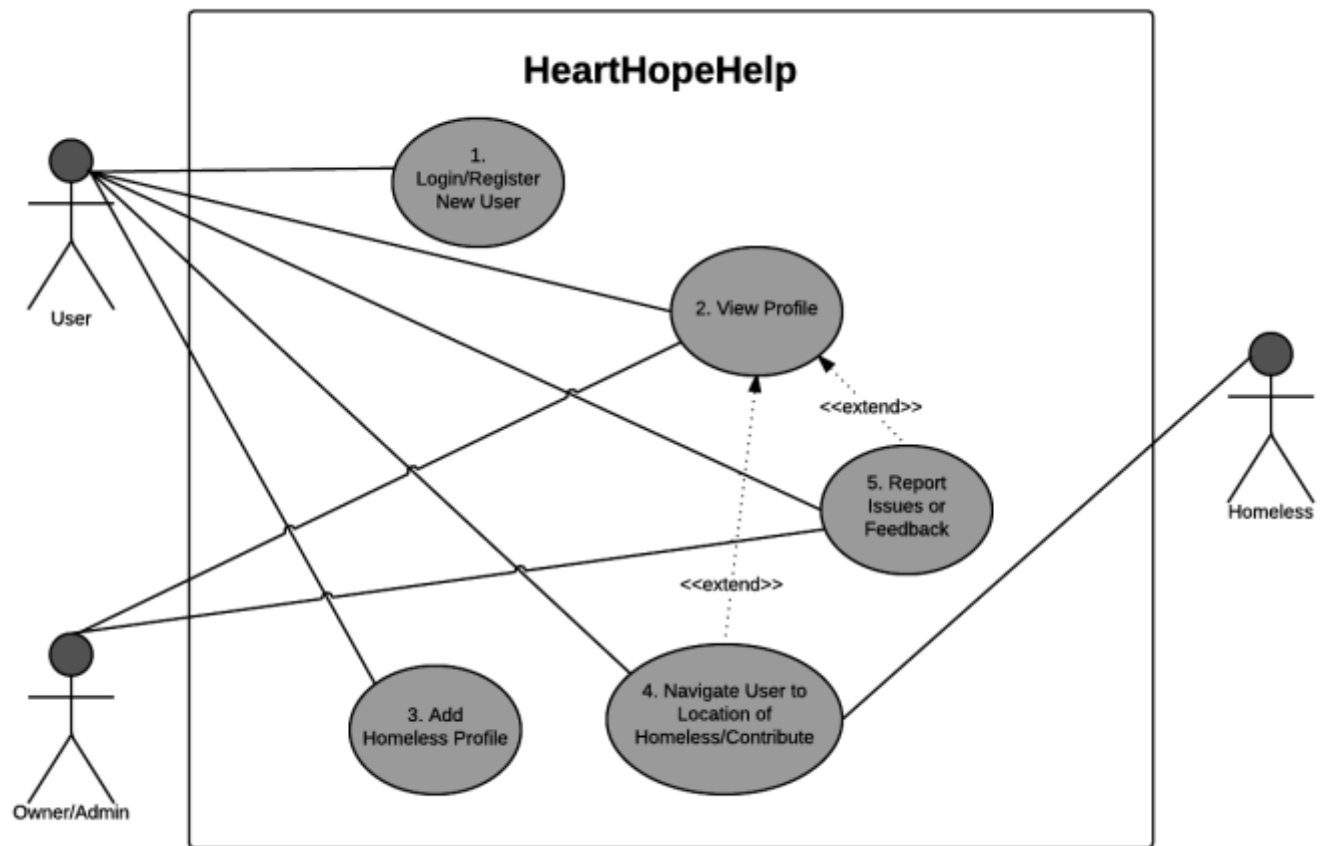
Navigate Users to Location of the Homeless/Contribute [Use Case 4]

- Users should be able to locate and find the homeless individual they are interested in by utilizing the application's incorporated step-by-step navigation.
- Initial Acceptance Tests:
    - Attempt to navigate to the location of a homeless individual
    - Handle navigation case if location services is not enabled or if there is no internet connection on user device

Report Issues or Feedback [Use Case 5]

- Users will be able to report bad/offensive profiles, possible fake profiles, report issues regarding the application, or offer feedback on the application.
- Initial Acceptance Tests for admin/user:
    - Attempt to receive issues or reports from users and resolve those cases
    - Attempt to edit a homeless profile
    - Attempt to delete a homeless profile
    - Attempt to ban user from app

3.3 Use-Case Diagram

3.4 Use-Case Descriptions

Use-Case: Login/Register New User	ID: 1

Actors:	Primary Actor:
User	User

Stakeholders and interest:
User: wants to become member of HeartHopeHelp and use application to read and find homeless individuals

Brief description:
User will be asked to login to application using their username and password. If user is new, user will be asked to register as a new user and create an account

Relationships:
    Association: N/A
    Include: N/A
    Extend: N/A
    Generalization: N/A

Trigger: User clicks "Login" or "Register as New User" button within the application

Type (circle one): (External)   Temporal

Basic Flow of Events:
1. User opens application and is brought to login page
2. User enters username and password and clicks "Login" button
3. If login successful, user will be logged onto application, otherwise a warning message will indicate that login is unsuccessful and user must re-enter their login credentials

Subflows:
S6: If user does not have an account
    1. User must click "Register as New User" button to create an account.
    2. User enters their personal information to register (username, password, and email)
    3. User clicks "Register" button at bottom of page
    4. User is notified whether their account registration is successful or unsuccessful. If successful user will receive confirmation by email, otherwise a message will be outputted indicating that account creation is not successful.
    5. User is directed to "Login" page to login using their username and password

Extensions / Alternate Flows:

Use-Case: View Profile	**ID**: 2

Actors: User, Admin	**Primary Actor**: User

Stakeholders and interest:
User: View the Homeless individual's profile
Admin: View and make changes on Homeless individual's profile if necessary

Brief description:
System will provide user with detailed information of the homeless individual, including the name, photo, location, and their stories.

Relationships:
      Association: N/A
      Include: N/A
      Extend: N/A
      Generalization: N/A

Trigger: User clicks on markers of homeless individuals on their map

Type (circle one):   (External)   Temporal

Basic Flow of Events:
1. User finds a homeless individual's marker on the map and clicks on it
2. User is then displayed some basic information on that individual
3. User can click "View Profile" button to view a more detailed description of the homeless individual

Subflows:

Extensions / Alternate Flows:
3e. User will be taken to a separate page where they can view a full description of the homeless individual. This will include a name, picture, age, and personal stories.

Use-Case: Add Homeless Profile		ID: 3
Actors: User	**Primary Actor**: User	
Stakeholders and interest: User: post a new profile of a homeless individual		
Brief description: User adds a homeless individual's profile by adding his/her picture, name, and his/her life's story which lead to his/her homelessness		

Relationships:
    Association: N/A
    Include: N/A
    Extend: N/A
    Generalization: N/A		

Trigger: User clicks "Post New Profile" or "+" button to begin filling a form in detail about a homeless individual. **Type** (circle one): (External) Temporal		
Basic Flow of Events: 1. User clicks "Post New Profile" or "+" button to begin 2. User begins to add picture of a homeless' individual (if any) 3. User adds his/her name 4. User add his/her life's story which lead to the homelessness (The story must be closed to what user is told by the homeless individual 5. User reviews the form to ensure all information is correct, then check the agreement box (Agreement box used to ensure truthfulness of the profile) 6. User clicks "Add" to insert this profile to cloud database		
Subflows:		
Extensions / Alternate Flows: 2a. If user does not have a picture of a homeless, he/she is allowed to skip this part 5a. If user does not check the agreement box, he/she cannot post this profile		

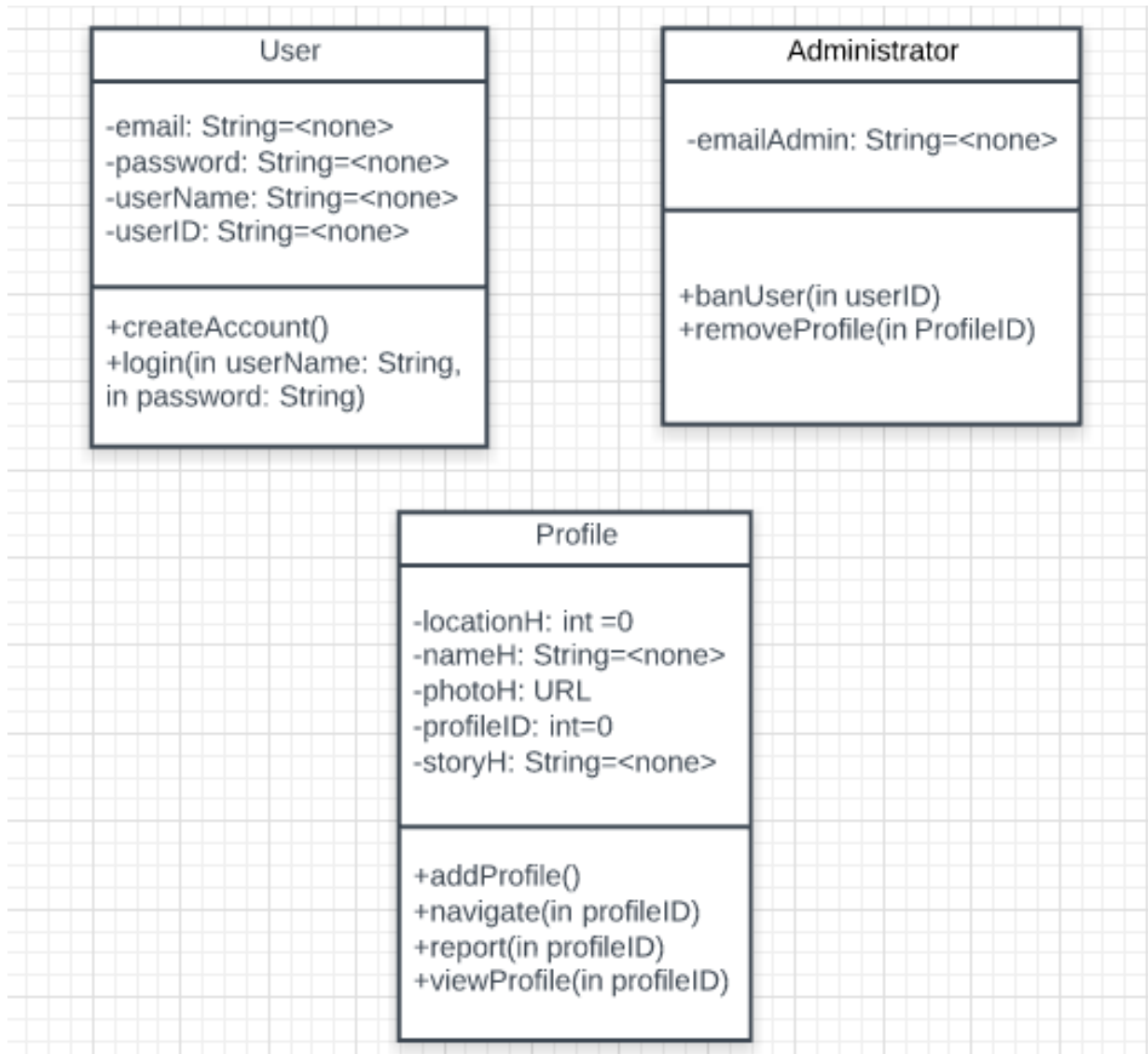| **Use-Case**: Navigate User to Location of Homeless/Contribute		**ID**: 4
Actors: User, Homeless	**Primary Actor**: User	
Stakeholders and interest: User: uses navigation to get to a homeless individual initial's location Homeless: wants to be located by users and wants to benefit from any contributions		
Brief description: When user wants to go to a pinpoint location of a homeless individual, he/she is able to navigate from his/her current location to there		

Relationships:
     Association: N/A
     Include: N/A
     Extend: 2. Allow Users to View Profiles
     Generalization: N/A		

Trigger: User clicks "Guide Me There" to navigate to the pinpoint location **Type** (circle one): (External) Temporal		
Basic Flow of Events: 1. After viewing a specific profile, user can click "Guide Me There" button to be assisted navigating to the pinpoint location 2. After clicking the button, system automatically transfers the pinpoint location and user's current location to Google Map (A standard map in Android) 3. The screen will go to Google Map app and allow user to choose which method he/she would like to get there (by walk, car, bus, etc....) 4. After choose the method, user will see specific routes to get to the pinpoint location. 5. User can choose a specific route, then Google Map will navigate user to there		
Subflows:		
Extensions / Alternate Flows:		

Use-Case: Report Issues or Feedback		**ID**: 5
Actors: User, Admin	**Primary Actor**: User	
Stakeholders and interest: User: Report issues with application, report illegal or offensive content, provide feedback to developers Admin: Investigate reports and take appropriate actions		
Brief description: User can report to admin any issues related to the app, any inappropriate or offensive content, possible illegitimate profiles, or offer any feedback.		

Relationships:
       Association: N/A
       Include: N/A
       Extend: 2. Allow Users to View Profiles
       Generalization: N/A		

Trigger: User clicks "Report" button within a homeless profile **Type** (circle one): (External) Temporal		

Basic Flow of Events:
   1. User clicks "Report" button within a homeless profile
   2. A report case is then sent to the administrator/owner to investigate and take any appropriate actions		

Subflows:		
Extensions / Alternate Flows: 1a. User clicks "Report" button from homepage		

4.0 Initial Data Requirements

4.1 Introduction

This section contains a UML class diagram displaying the classes of HeartHopeHelp, as well as the attributes and operations for each class.

4.2 Initial Class Diagram

User

-email: String=<none>
-password: String=<none>
-userName: String=<none>
-userID: String=<none>

+createAccount()
+login(in userName: String,
in password: String)

Administrator

-emailAdmin: String=<none>

+banUser(in userID)
+removeProfile(in ProfileID)

Profile

-locationH: int =0
-nameH: String=<none>
-photoH: URL
-profileID: int=0
-storyH: String=<none>

+addProfile()
+navigate(in profileID)
+report(in profileID)
+viewProfile(in profileID)

Bibliography

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Weltz, Elaine. CSC 4151 Software Engineering I (Winter 2017), multiple lectures (PowerPoint slides, PDF files, Word Documents). Retrieved from Professor Weltz and Seattle Pacific University Canvas.

Appendices

Lucidchart was used to create the use-case diagram and the class diagram. Lucidchart is an online visual communication tool used for creating flowcharts, diagrams, UML sketches, and other models.

Glossary

API – Application programming interface
BCB – Bellevue Sarang Church
Hope – Developer team name
HeartHopeHelp – Name of the system/application