

NOAH

Breakthrough loneliness, communicate from the hearth, sail into the future

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Description

Background:

In a world where we can overlook the elderly who need help but have been left behind by the ever-changing technology, and the lonely who cannot find a window of communication, we hope that through this application, we can reconnect them with the world and keep them afloat. Noah is such a ship where users can click into our software, register a ticket, and we will make it easier for you to reconnect with the world and feel the convenience of technology!

As Finland has a growing aging population, it is essential to consider this in its designs.

Noah aims to provide a viable solution as the system may be installed in one of two versions. For those who are not so familiar with modern smartphones and other gadgets, mainly the aging population, a simplified version with a streamlined user interface primarily based on callback requests. The second version is a more modern approach directed towards the youth. They may communicate with each other in a more social media-like community based on their interests and provide and provide them with an event calendar displaying the main events in Turku.

Noah has the potential to be expanded to provide even more needs-based services to people battling social isolation or even loneliness as it can provide a comfortable space for barrier-free communication with like-minded people. Event calendars with data from Turku city events and analyze data provided by the government to, for instance, be able to display health-related pieces of information.

Goal:

Noah is a mobile application aimed at people struggling with social isolation. The fundamental purpose of this application is to reach the individuals at risk for social isolation in Turku to access need-based services and provide a means of communication with fellow Turku residents and volunteers. We assume that each user is like a crew member on a ship. Our focus is on the following issues; firstly, simplifying the application for our elders in the age of rapidly advancing technology. Secondly, we aim to create a virtual environment through the app, making open communication channels among young people who suffer loneliness. Lastly, our app can be updated to target other age groups in later versions.

Noah aims to break communication barriers within the community by providing opportunities to contact those who have shared similar problems. While the app delivers the social needs of our targeted group, their most respected safety priorities stay vital to our app principles. Users identify themselves by logging into our app via their social security numbers. In this way, their respected registration Infos remain within the app data, but at the same time, we prevent any unwanted security issues. We value our users' privacy more than anything, so therefore there is a possibility to create anonymous profiles for those users who want to keep their names private. After contacting someone in the app, users can share their original information if they wish to. Moreover, the volunteers appointed by the city of Turku will have the right to use the app in admin mode to connect older people.

Furthermore, our app can be extended for the older people group to view their health information, and in emergencies, it can take action to aid people. Our first version includes collecting health-related data, such as heart beating, pill schedule reminder, blood pressure, and calling 112 in the worst scenario. Health information data are encoded through the app and analyzed to decide whether to call the 122 or not. To apply this, every user must use a smartwatch or smart bracelet to implement the application, and all the needed data can be transferred from these devices. Briefly, our app can also support older people in different ways and increase community awareness.

Functioning:

The entire architecture of "Noah" will be built in the following way: In the user side of the app, the front-end and back-end will be separated, and a C/S three-tier architecture will be

used. The front-end is implemented using the Flutter framework, the back-end is implemented using Javascript+Python, and the database is stored using a MySQL database. Data interaction will be achieved by sharing the database with the user-side app. The system uses the c/s framework to ensure user security. Users' login will be done using social security password. The password will be second MD5 encryption: Primary encryption stored in the mobile phone SharedPreferences users automatically log in, secondary encryption stored in the server-side database; the user login judgment. The overall style of the application is making it more suitable for older users. In addition, the user's relative position is calculated using hardware devices such as the A-sensor, GV-sensor, and LA-sensor. The acceleration = gravity + linear acceleration formula is used to calculate the user's relative position. The PPG signal and the ECG signal are collected simultaneously during the signal acquisition phase, and the signal is split into t-second time segments, moving every s seconds. The ECG signal is used to calculate the heart rate per second as the actual heart rate value. When dramatic fluctuations in heart rate and other related parameters are detected, the AI built into the app can call 112 to tell the hospital that the person has a severe health problem and tell them where they are currently located.