**System Design Document**

**For**

**Mental Health Application**

Team member:

* Lizzy Jackson
* Garðar Benediktsson
* Harrison Dinius
* Jason Hansen
* Gabi Stoney

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SYSTEM DESIGN DOCUMENT

# INTRODUCTION

## Purpose and Scope

The purpose of this document is to visualize the design of the user interface for the Mental Health Application.

## Project Executive Summary

This document describes the system requirements, operating environment, system and subsystem architecture, files and database design, input formats, output layouts, detailed design, processing logic, and external interfaces for the Mental Health Application.

### System Overview

The goal of the Mental Health Application system is to collect data from the user’s communications on their mobile device and create tiers of contacts to help the user track and maintain their own mental health. The subsystems at work to achieve this include data collection, data storage, the algorithm, and the user interface. The data collection system accesses user contacts and communication history, and sends it to the data storage system for organizing and saving what was collected. The algorithm processes the data to create tiers for the user’s contacts, from most-to-least important. The user interface system displays those results to the user, which are also sent back to the data storage system for saving and future use by the algorithm.

### Design Constraints

The team is making several assumptions when developing this project, which are as follows:

* User has an iPhone updated to the latest version of iOS
* User is communicating with at least 20 people
* User communication is occurring on a daily basis

### Future Contingencies

Integration of Firebase as a database solution for outsourcing data storage and calculation is tentatively scheduled, due to complete unfamiliarity with it (and low priority relative to the rest of the backlog). If Firebase integration is not fulfilled, the alternative plan is to keep everything stored locally in the application on the user’s device.

## Glossary

Communication/Communicating: For the purposes of this document, communication is a broad term used to refer specifically to calling, texting, and FaceTime only.

# HUMAN-MACHINE INTERFACE

This section provides the detailed design of the system and subsystem inputs and outputs relative to the user/operator. Any additional information may be added to this section and may be organized according to whatever structure best presents the operator input and output designs. Depending on the particular nature of the project, it may be appropriate to repeat these sections at both the subsystem and design module levels. Additional information may be added to the subsections if the suggested lists are inadequate to describe the project inputs and outputs.

## Inputs

The application needs the user’s permission to be able to access their contacts (Figure 3.1). This is done to allow the user to control their privacy. The application uses the data from the user’s contacts in the algorithm to calculate the inner circle.

The user needs to input the desired weight for each mode of communication (Figure 1.3). These weights will then be applied to the algorithm. Furthermore, the user has the option to choose a number to block and therefore will not be used in the algorithm.

**Application Layout:**

A picture containing website

Description automatically generated

Figure 1.1 - Welcome screen of application

A close up of a sign

Description automatically generated

Figure 1.3 - Allows user to change weight (importance) of various forms of communication.

Graphical user interface, application

Description automatically generated

Figure 1.4 - Application allows user to block numbers from being calculated in algorithm.

A screen shot of a smart phone

Description automatically generatedA screen shot of a smart phone

Description automatically generated

Figure 2.1 - Application pushes notification to ask if interaction was positive or negative.

Figure 2.2 - Application pushes notification to ask user how much of an impact the interaction had.

Graphical user interface, text, application, chat or text message

Description automatically generated

Figure 3.1 - Requires user to give access to contacts.

## Outputs

The user application will output the names of the contacts that are in the user’s inner circle. The application will run the algorithm to determine which contacts to display (Figure 1.2).

Graphical user interface, text, application, chat or text message

Description automatically generated

Figure 1.2 - Screen displaying inner circle of numbers application has access to.

# DETAILED DESIGN

## Software Detailed Design

Data Flow Diagram

Level 0

Diagram, schematic

Description automatically generated

Level 1

Diagram, schematic

Description automatically generated

State Chart

Diagram

Description automatically generated

Use Case Diagram

Diagram

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