



I-Care

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Problem Definition

How can we improve mental well-being amidst the COVID-19 pandemic?

The prolonged Covid-19 pandemic has taken a toll on global mental health. The fear of infection, changes in our daily routine and social isolation brought about by safe management measures, as well as economic uncertainty has led to a **sharp increase in stress levels.**

This has resulted in **increasing levels of depression and suicidal tendencies.**





MENTAL HEALTH IN SINGAPORE



4 in 10 respondents considered suicide at some point



11.4% of elderly suffer from mental disorders

13% of respondents thought about suicide at least once a week

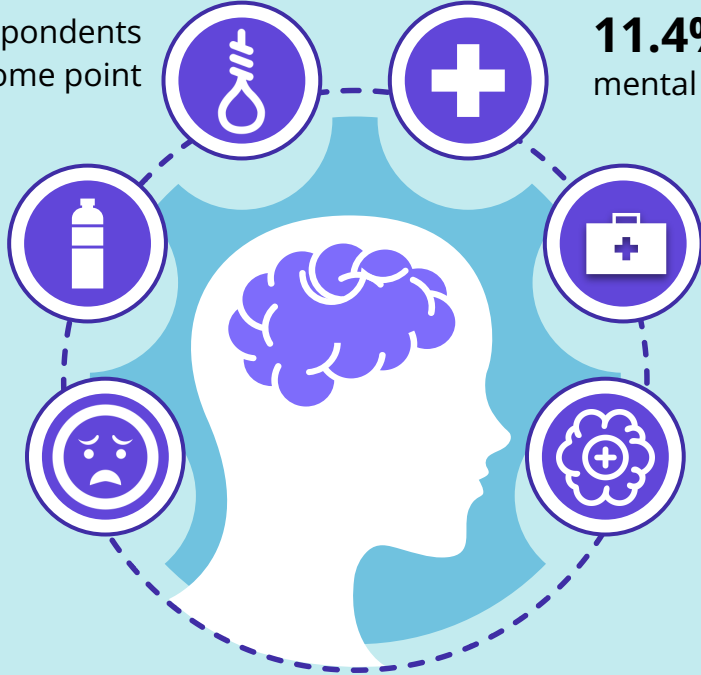


78.4% of who experienced a mental illness in the past year did not seek treatment

1 in 3 adults experience COVID-19 related psychological distress



52% of youth struggle with mental health issues



Our Solution

I-Care

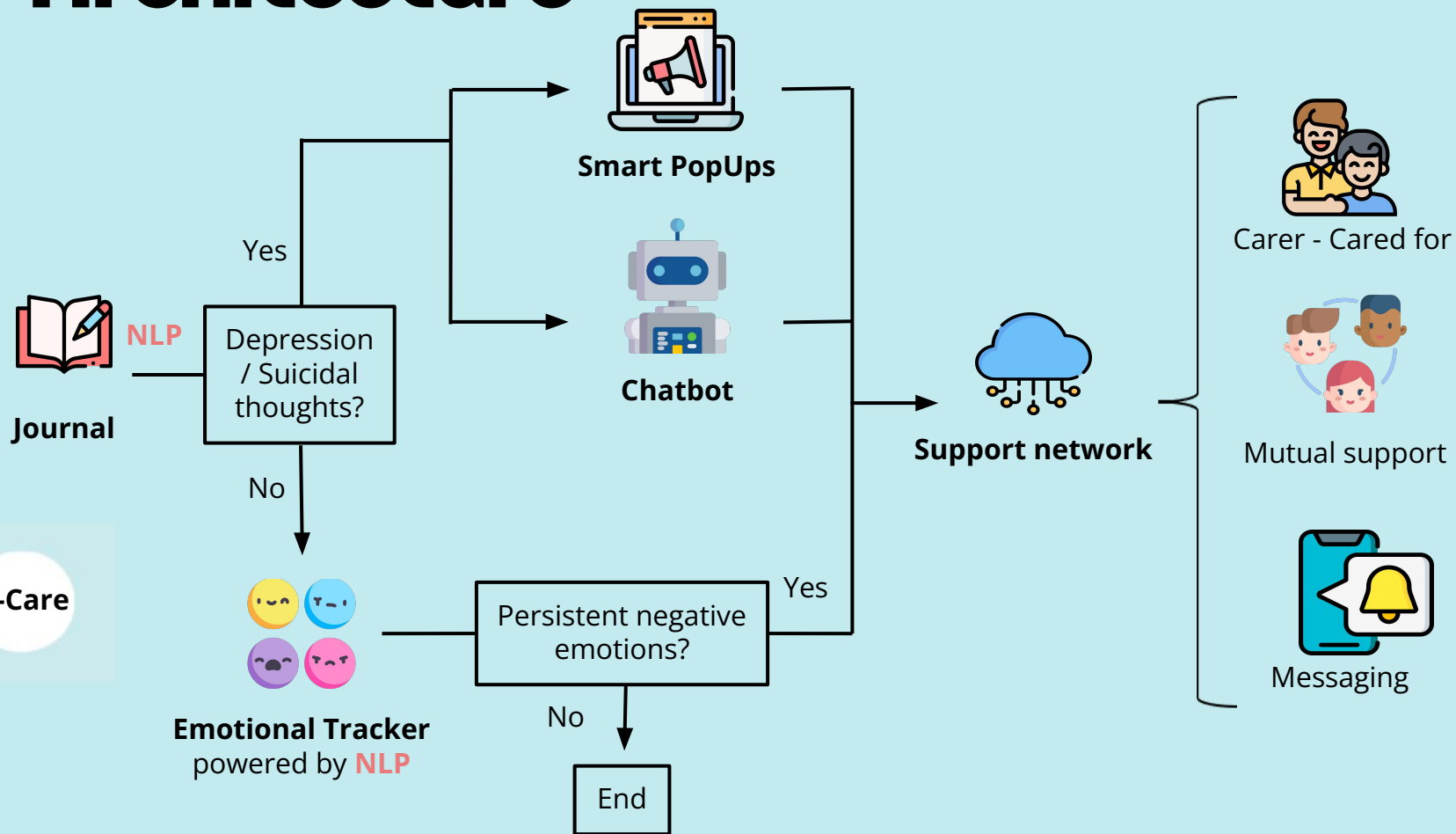
An integrated self-care journaling mobile application that seeks to improve mental health well-being, powered by Natural Language Processing to track users' emotions and mental health progress



I-Care



Our Architecture



Key Features

Integrated Journal

Safe space for users to express and log their emotions

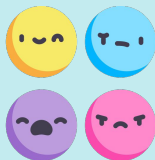


Support Network

Customizable support network with friends or family via messages and sharing of emotional tracker

Emotional Tracker with Motivational Popups

Powered by NLP to classify the user's general mood of the day



Multi-Functional Conversational Chatbot

Provides a safe space for people who are afraid to seek help

Natural Language Processing

Enables I-Care's emotional tracker and notifications



Smart Notification Popups

Powered by NLP to identify potential depression or suicidal tendencies

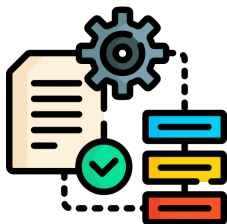
Natural Language Processing Algorithm

Data

" Today has been a very tiring day. The day has been very packed with non-stop activities with little rest. I am drained, super tired and about to knock out anytime now :("

Preprocessing

- Tokenization
- Stopwords
- Punctuation
- Stemming



Feature extraction

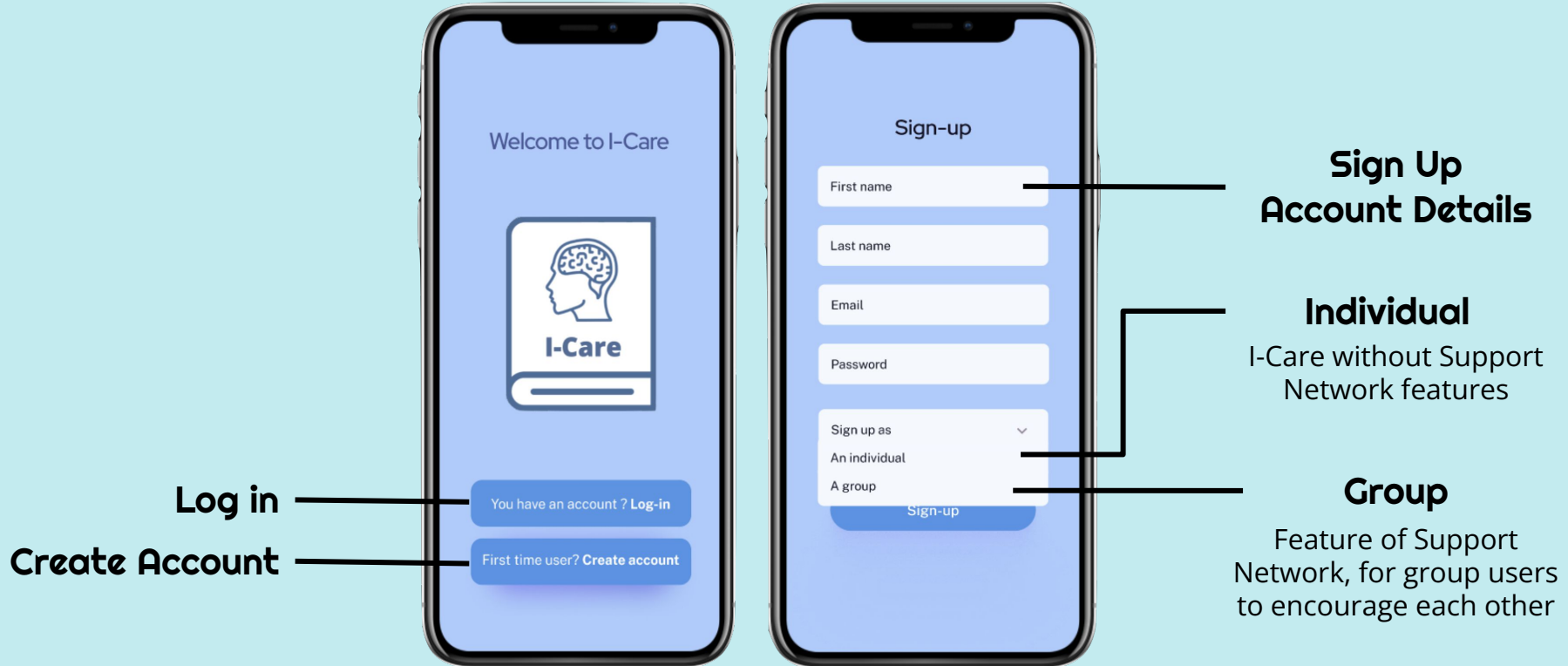
Word Frequency
TF-IDF

Classification

Random forest



I-Care: Sign up Page



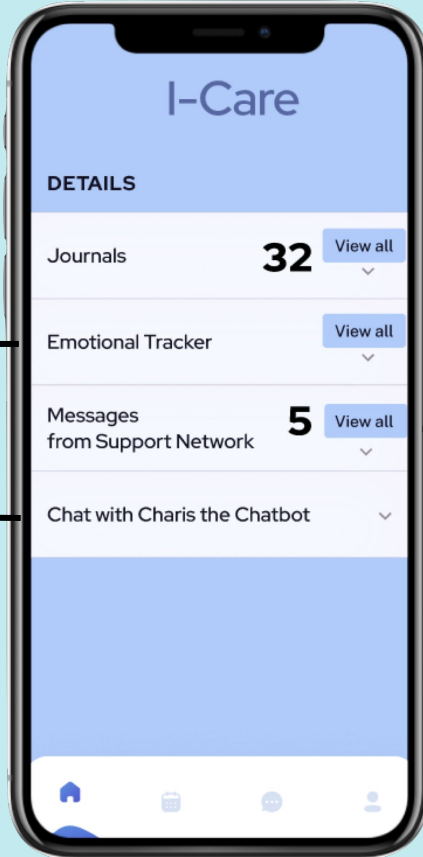
I-Care: Home Page

Emotional Tracker

Powered by NLP to classify the user's general mood of the day

Multi-Functional Conversational Chatbot

Provides a safe space for people who are afraid to seek help



Integrated Journal

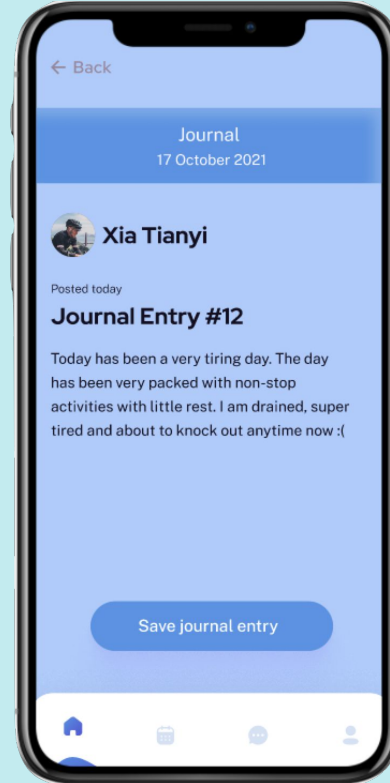
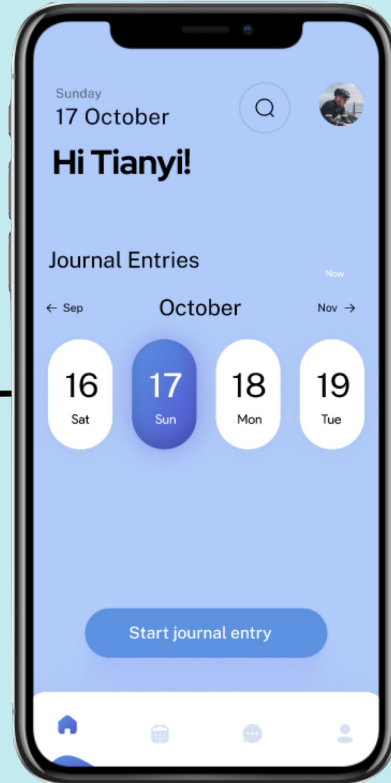
Safe space for users to express and log their emotions

Messages

Feature of Support Network, for users to encourage each other

I-Care: Journal Page

**Previous Journal
Logs**



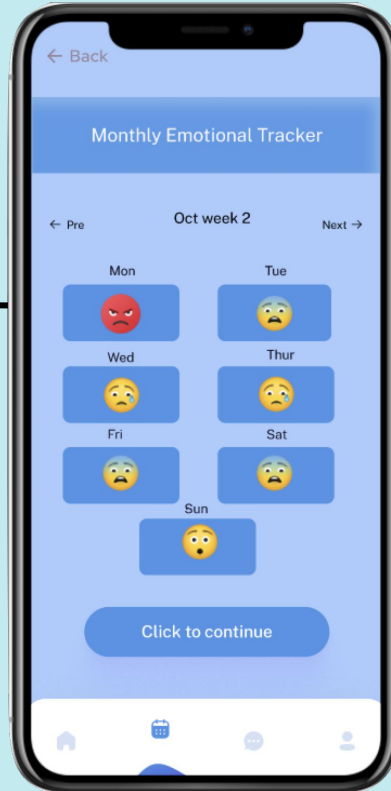
Integrated Journal

User enters daily journal entries and I-Care applies NLP to check for depression and user's emotions

I-Care: Emotional Tracker (Negative Emotions)

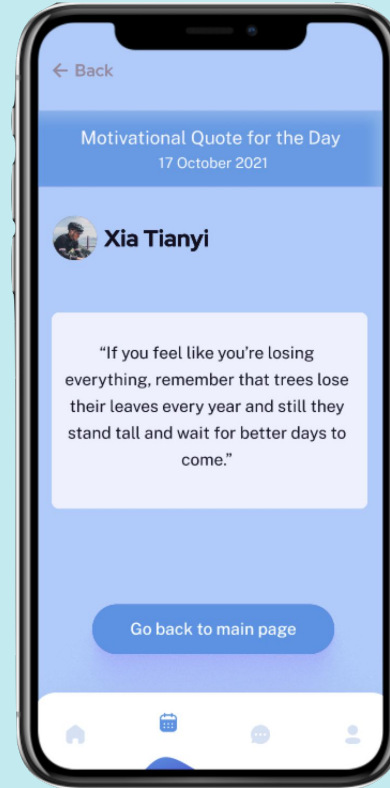
Emotional Tracker

User's emotions over the past week displayed by emojis



Smart Notification Popups

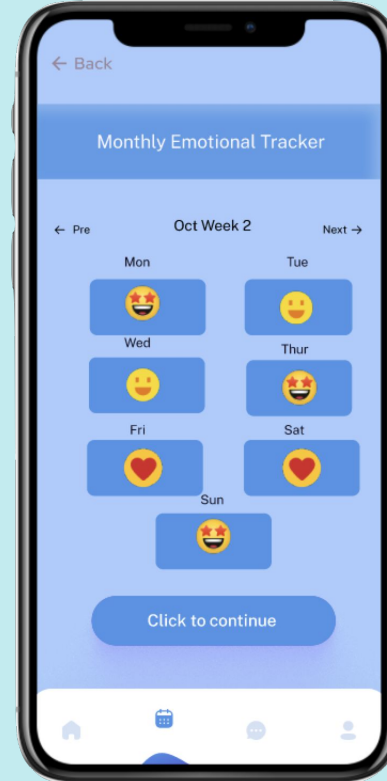
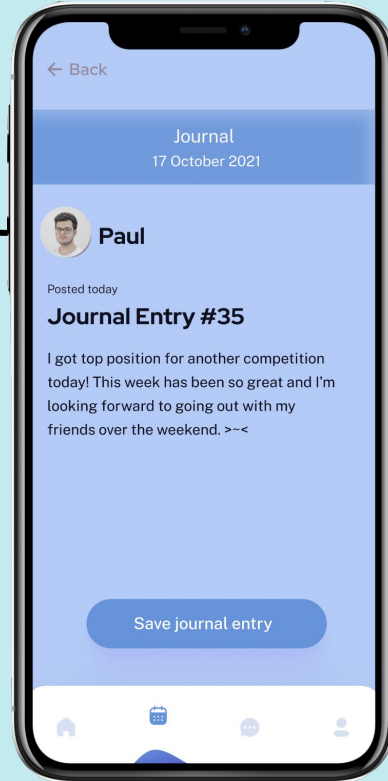
Motivational message when user experiencing negative emotions



I-Care: Emotional Tracker (Positive Emotions)

Integrated Journal

User enters daily journal entries and I-Care applies NLP to check for depression and user's emotions



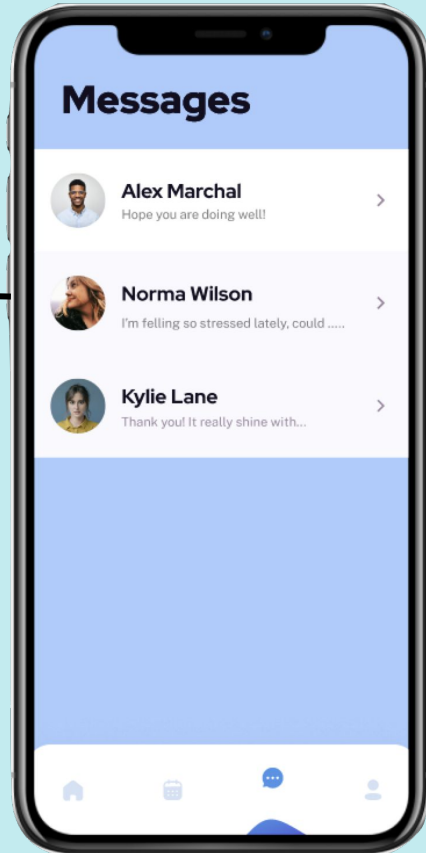
Emotional Tracker

User's emotions over the past week displayed by emojis

I-Care's Support Network

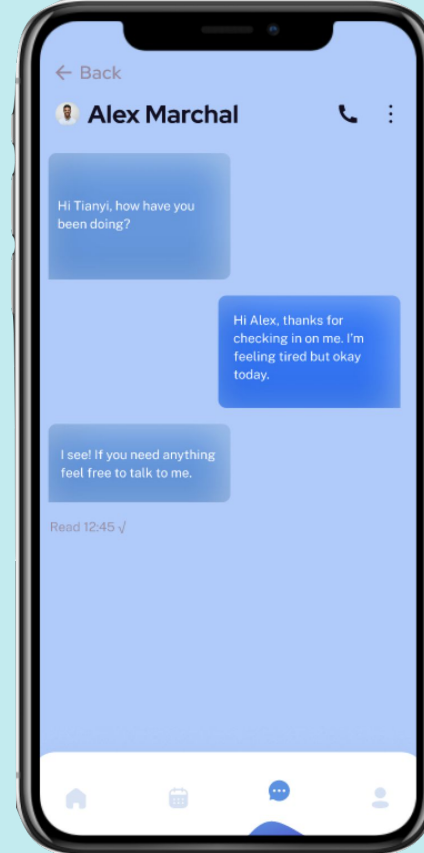
Messages

Messages from other members in the user's group support network



Messages

Feature of the Support Network that enables group users to check in and encourage each other



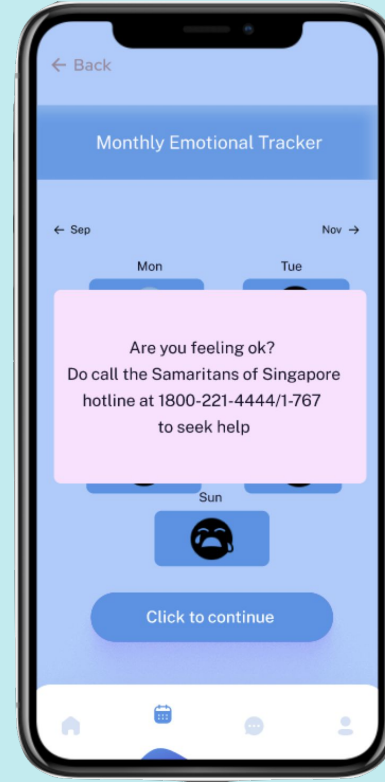
Smart Notification Pop-Ups

Concerning Journal Entry

NLP detects suicidal tendencies and negative emotions

Emotional Tracker

NLP-powered tracker displays user's emotions



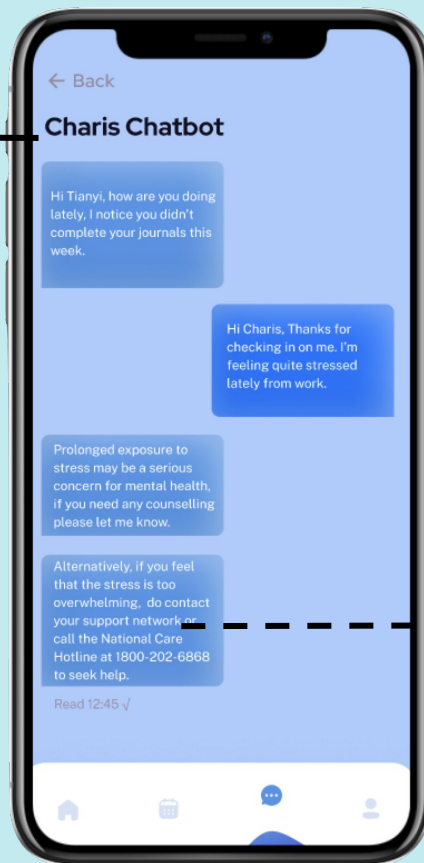
Notifications

Smart Pop-Ups triggered when suicidal tendencies are identified

Chatbot

Activated based on concerning Journal entries

Ensures that timely
assistance is
provided to people
who may be feeling
mental health issues



Provides possible avenues of help

Recommends
appropriate care

Impact of I-Care



Preliminary **quick diagnosis** of Mental Health issue



Early invention

Prompts individuals when negative emotions are detected, and provides support for the user

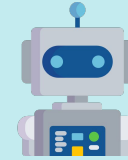


Timely assistance to individuals suffering from mental health issues

Carer-Caree
(Parent - Child)



Chatbot



Smart PopUps



Messaging: Peer support



Increased accessibility for mental health help



Journal

I-Care provides an alternative avenue for people to express themselves and seek mental help, improving awareness of their user's mental health and emotions

Thank you!

