

## DEVELOPMENT OF MOBILE APPLICATION «HEALTH JOURNAL»

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**Annotation.** Thy article describes the relevance and functional tasks of a mobile application for the iOS operating system to automate and simplify the process of health journaling. The main focus is the role of modern technology in ensuring mental health. The developed system will reduce the time, labor, and financial costs of paper-based journaling, as well as ensure the safety and reliability of the process with the possibility of feedback.

**Keywords:** mental health, mobile application, journaling

**Introduction.** With billions of smartphone consumers across the world, it is no surprise that the mobile software industry is thriving. App usage and smartphone penetration are still growing at a steady rate, without any signs of slowing down in the foreseeable future. Applications on mobile phones have fundamentally changed every aspect of modern life. Technology has seamlessly integrated its way into day-to-day activities, improving and streamlining them. For instance, health software is created to help organize important health information and analyse the data to help understand changes in health [1].

**Main part.** The purpose of the development of mobile application «Health Journal» is to help the user understand their state of mental health. The journal collects data from the user’s daily entries and makes it easy to access in a central and secure place. Having a second set of eyes on health data can give the user a peace of mind as it can provide useful information to healthcare providers, namely psychologists, therapists, and counselors.

Prototypes of the project are illustrated below (picture 1):

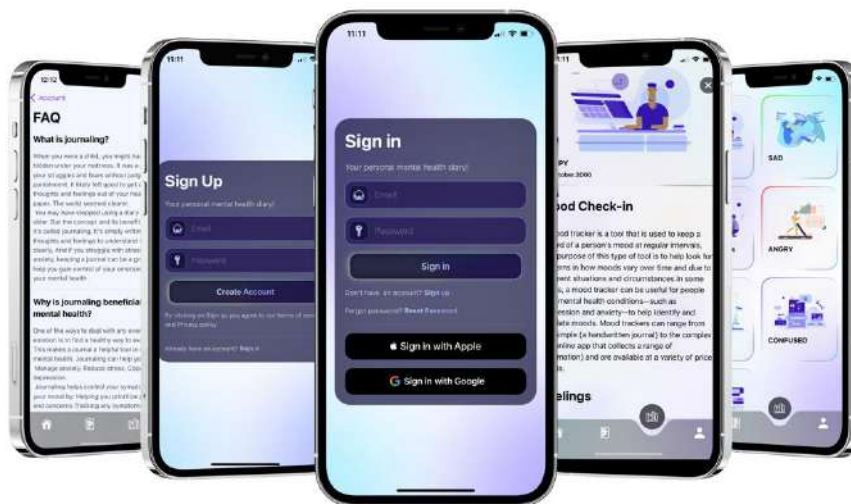


Рисунок 1 – Authentication, registration, entries, entry details and FAQ pages of the application

As stated by the World Health Organization constitution: «Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity» [2]. Dimensions of personal health include five main aspects: physical, emotional, social, spiritual, and intellectual. Mental health is statistically under-prioritised by individuals, due to the common misconception about its importance. Contrary to the common belief, mental health is more than just the absence of mental disorders or disabilities. It refers to cognitive, behavioral, and emotional well-

being; hence, it is fundamental to the collective and individual ability of humans to think, emote, and interact with others. On this basis, the promotion, protection and restoration of mental health can be regarded as a vital concern of individuals, communities and societies throughout the world.

An effective method of striving toward mental stability is journaling as it requires the application of the analytical, rational left side of the brain; while the left hemisphere is occupied, the right hemisphere, known as the creative side, is given the freedom to wander. Allowing creativity to flourish and expand can be cathartic and make a big difference in daily well-being. It is hypothesized that writing works to enhance mental health through guiding the writer towards confronting previously inhibited emotions helping him process various events and compose a coherent narrative about the experiences [3].

Aforementioned mobile application contains hereinafter described features:

- user authentication and registration;
- addition, edit and deletion of personal account data;
- integrated push notification;
- mood tracking;
- addition, edit and deletion of received entry's data;
- integrated push notification;
- customer service and Frequently Asked Questions (FAQ);
- incorporated search feature that helps the user find the data they need;
- data analysis and report download.

All of the pages are specifically blue and purple theme designed with color psychology in mind. Blue calls to mind feelings of calmness or serenity and is often described as peaceful, tranquil, secure, and orderly. It is often seen as a sign of stability and reliability. The effect of purple on the human psyche provides significant benefits to the user or receiver. The calming effect on the autonomic nervous system helps reduce anxiety, slows down the heart rate and regulates breathing. Blood pressure is normalized and the intensity of panic attacks is reduced.

This color helps the user open their subconscious or inner world more easily. Strengthening and expanding awareness, it has a positive effect on memory and attention and helps notice specific details.

A user account model is defined for the purposes of this journal as a system that permits the user to register for an account or profile which uniquely identifies them in the application. Furthermore, such a system provides a way to sign in to a previously-created account (this is often done automatically in subsequent sessions after an account has been created), and in cases of forgotten passwords, recovery is provided. Customarily, in order to create an account, the user will be required to provide identification such as an email address, Google account, or an Apple ID. After registration is complete, the user will have the option of customizing their account by adding their personal information such as name, surname, birthday, and profile picture. Such data also can be added, edited, or deleted later on. The authentication process also allows the user to secure their journal by logging out of their account which helps prevent other users from accessing the system without verifying their credentials.

Upon completion of the registration or authentication process the user gains access to the electric journaling functions such as:

- mood tracking by identifying most frequent emotions in a positive/negative category;
- breaking down the emotions into more granular categories and rating them;
- tracking down triggers by writing down causes of emotions;
- writing down personalized daily notes, which provides an opportunity for positive self-talk;
- naming each entry, with the purpose of recognition of symptoms or triggers that must be prioritized;
- viewing and answering questions commonly asked by mental health professionals;

- receiving weekly, monthly and yearly overviews;
- viewing daily motivational quotes;
- receiving notifications as a reminder for daily check-ins.

The system is designed for the iOS operating system and developed in Xcode, which is Apple's integrated development environment (IDE) for macOS. The technologies implemented include [4, 5]:

– Swift programming language – a safe, fast, open-source, and interactive programming language.

– SwiftUI – a declarative user interface toolkit, which can be used to build UI across all Apple platforms.

– Firebase – a platform developed by Google, which provides detailed documentation and cross-platform SDKs to help build and ship apps on Android, iOS, the web, C++, and Unity.

– CloudKit – the framework which provides interfaces for moving data between the app and the iCloud containers. It is used to store the app's existing data in the cloud so that the user can access it on multiple devices.

– Core Data – a framework that is used to manage the model layer objects in an application. It provides generalized and automated solutions to tasks associated with object life cycle and object graph management, including persistence.

**Conclusion.** The benefits of journaling have been widely researched and it is evident that keeping a journal is one of the best methods of maintaining activity records. Although a handwritten journal may be better for cognitive and emotional factors, a stylus and touchscreen can also mimic the feel of analog writing. We found, digital journals such as the iOS «Health Journal» are expected to replace paper-based entries, as the benefits such as privacy, durability, portability, analyzability and cost are incomparable.

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## **МОБИЛЬНОЕ ПРИЛОЖЕНИЕ «ДНЕВНИК ЗДОРОВЬЯ»**

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**Аннотация.** В статье описаны актуальность и функциональные задачи мобильного приложения для операционной системы iOS по автоматизации и упрощению процесса ведения журнала здоровья. Основное внимание уделяется роли современной технологии в обеспечении ментального здоровья. Разрабатываемая система сократит временные, трудовые и финансовые затраты при ведении дневника, а также обеспечит безопасность и надежность процесса с возможностью обратной связи.

**Ключевые слова:** психологическое здоровье, мобильное приложение, ведение дневника.