



Kristu Jayanti College

AUTONOMOUS

Bengaluru

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WATER CONSUMPTION TRACKER

Project Report

submitted in partial fulfillment of the requirements for
the award of the degree of

BACHELOR OF COMPUTER APPLICATIONS (BCA)



Submitted By

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Under the guidance of
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DEPARTMENT OF COMPUTER SCIENCE (UG)

CERTIFICATE OF COMPLETION

This is to certify that the project entitled “**Water Consumption Tracker**” has been satisfactorily completed by **Vijay B, 21BCAE57** in partial fulfillment of the award of the Bachelor of Computer Applications degree requirements prescribed by Kristu Jayanti College (Autonomous) Bengaluru (Affiliated to Bengaluru University) during the academic year 2023 – 24

Internal Guide

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Valued by Examiners

Prof . Sevuga Pandian Ashirvatham

Centre: Kristu Jayanti College

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Date:



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DECLARATION

I, **VIJAY B (21BCAE57)** here by declare that the project work entitled “**WATER CONSUMPTION TRACKER**” is an original project work carried out by me, under the guidance of **Prof . SUMALATHA A**

This project work has not been submitted earlier either to any University / Institution or any other body for the fulfillment of the requirement of a course of study.

Signature

VIJAY B

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Date:

ACKNOWLEDGEMENT

It's my duty to acknowledge and thank the individuals who has contributed to the successful completion of the project.

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1. Project Synopsis

Water consumption is a critical aspect of daily life, with implications for personal health, environmental sustainability, and resource management. To address the growing need for individuals to monitor and manage their water intake effectively, we propose the development of a Water Consumption Tracking Application. This application aims to provide users with a convenient and intuitive platform to record, analyze, and optimize their daily water consumption habits.

The Application will feature a user-friendly interface accessible via mobile devices, allowing users to easily log their water intake throughout the day. The app will offer customizable settings to tailor water intake goals based on individual preferences, lifestyle, and health considerations. Through interactive visualizations and progress tracking, users will gain insights into their hydration patterns, helping them make informed decisions to maintain optimal hydration levels.

1.1 Purpose

The purpose of the Water Consumption Tracking Application is to empower individuals to monitor and manage their daily water intake effectively. By providing a user-friendly platform accessible via mobile devices, the application aims to enable users to record, analyze, and optimize their hydration habits with ease. Customizable settings will allow users to set personalized water intake goals, taking into account individual preferences, lifestyle, and health factors. Through interactive visualizations and progress tracking, the application will offer insights into hydration patterns, helping users make informed decisions to maintain optimal levels of hydration for their personal health and well-being.

1.2 Goals

Goal 1: User-Friendly Interface Development

Develop a mobile application interface that is intuitive and easy to use, ensuring seamless logging of water intake throughout the day. The interface should cater to users of varying technological proficiency and preferences, prioritizing simplicity and accessibility.

Goal 2: Customizable Settings Implementation

Integrate customizable settings within the application to allow users to set and adjust personalized water intake goals. These settings should take into account individual preferences, lifestyles, health considerations, and hydration needs, providing users with flexibility and control over their hydration management.

Goal 3: Interactive Visualizations and Progress Tracking Integration

Incorporate interactive visualizations and progress tracking features to offer users meaningful insights into their hydration patterns. These features should enable users to track their progress towards their water intake goals, visualize their hydration data over time, and identify trends or areas for improvement. By providing actionable insights, users can make informed decisions to optimize their daily water consumption habits for better health and well-being.

1.3 Intended Audience

The Water Consumption Tracker Application is intended for a diverse audience seeking to monitor and optimize their hydration habits. This includes health-conscious individuals such as fitness enthusiasts and athletes, as well as busy professionals who struggle to maintain adequate hydration throughout their hectic schedules. Parents and caregivers responsible for ensuring hydration for their families can benefit from a user-friendly solution that simplifies water tracking for both adults and children. Healthcare providers may utilize the application to support their patients' hydration goals, while organizations implementing wellness programs can promote its use among employees to encourage overall health and productivity. Additionally, environmental advocates interested in reducing water waste and promoting eco-friendly habits may find value in tracking their water usage through the application. Overall, the Water Consumption Tracking Application caters to a wide range of users, providing a customizable and convenient solution to support optimal hydration for personal health and well-being.

2. Project Objectives

2.1 User Engagement and Adoption

Increase user engagement and adoption of the Water Consumption Tracker Application by implementing user-friendly features and interfaces. This objective aims to ensure that the application is intuitive and accessible to a wide range of users, leading to higher rates of usage and sustained engagement over time.

2.2 Data Accuracy and Insights

Enhance the accuracy of water intake data recorded within the application and provide users with meaningful insights into their hydration patterns. This objective involves implementing mechanisms to accurately track water consumption, as well as developing visualizations and analytics tools that enable users to gain actionable insights from their data, facilitating informed decision-making regarding hydration habits.

2.3 Customization and Personalization

Enable users to customize and personalize their water intake goals and preferences within the application. This objective involves implementing settings and features that allow users to set individualized hydration goals based on factors such as lifestyle, health considerations, and personal preferences. By offering customization options, the application can cater to the diverse needs and preferences of its user base, enhancing user satisfaction and engagement.

3. Project Outline

3.1 Registration and Login

Users can effortlessly record their water consumption throughout the day by inputting the volume of water consumed, with options to choose from various measurement units for convenience. This feature ensures accurate tracking of hydration levels, aiding users in maintaining optimal fluid intake for their well-being. The Registration and Login module enables users to effortlessly create accounts and securely log in to the Water Consumption Tracker app. This ensures that users' data remains private and accessible only to them, providing a seamless and personalized experience.

3.2 User Profile and Preferences Module

Water Consumption Tracker facilitates the creation of personalized user profiles within the app, enabling individuals to input their demographic information, hydration goals, and preferences. By utilizing this data, the application tailors recommendations and reminders to each user's specific requirements, enhancing the overall user experience and effectiveness of hydration management.

3.3 Water Intake Module

The Water Intake module allows users to record their water consumption throughout the day by inputting the volume of water consumed. Users can choose from various measurement units for convenience, ensuring accurate tracking of hydration levels. This feature aids users in maintaining optimal fluid intake for their well-being and provides insights into their daily hydration habits. The application calculates recommended daily water intake and facilitates users in monitoring their progress towards achieving these tailored hydration goals. By adapting to users' specific needs, Water Consumption Tracker promotes a more effective and personalized approach to hydration management.

3.4 Hydration History Module

The application maintains a comprehensive history of users' water intake, allowing them to review their hydration patterns over time and track their progress towards meeting their hydration goals. By offering insights into past consumption behavior, Water Consumption Tracker enables users to identify trends, make informed adjustments, and cultivate healthier hydration habits for the long term.

3.5 Reminder Notifications Module

To promote regular hydration habits, Water Consumption Tracker incorporates customizable reminder notifications that prompt users at scheduled intervals throughout the day to consume water. These reminders can be adjusted according to users' preferences and schedules, serving as gentle nudges to maintain consistent hydration levels and prevent dehydration.

3.6 Flow Diagram

- ER Diagram

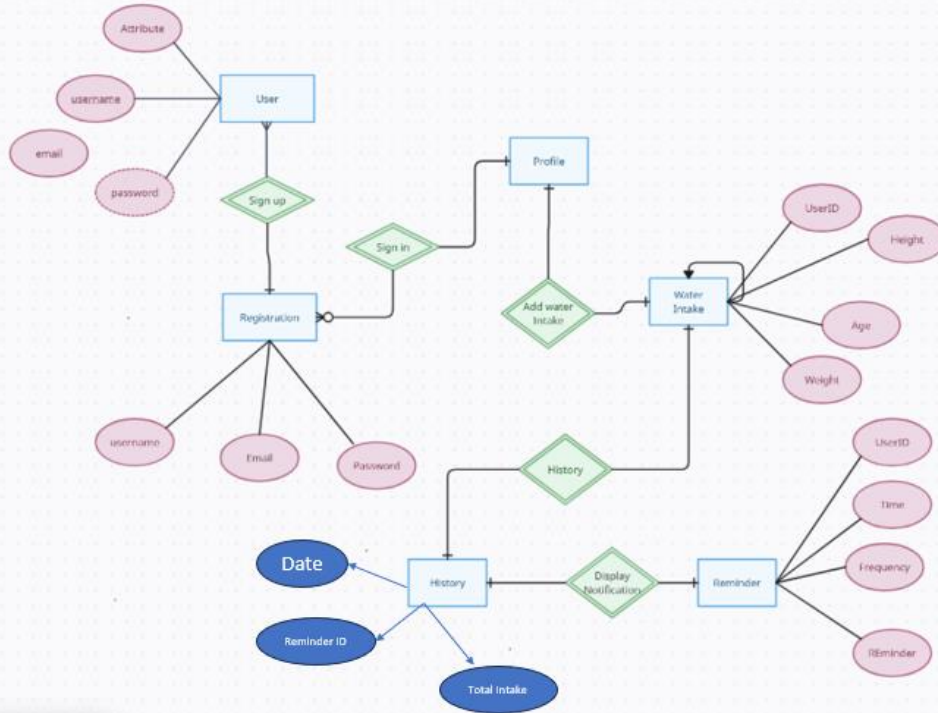


Figure 1 : ER Diagram

• DFD Level-0

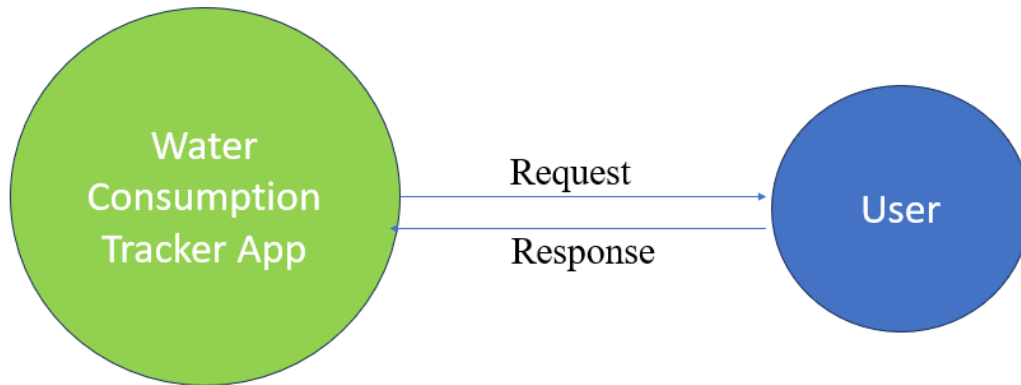


Figure 2 : DFD – Level 0

• DFD Level-1

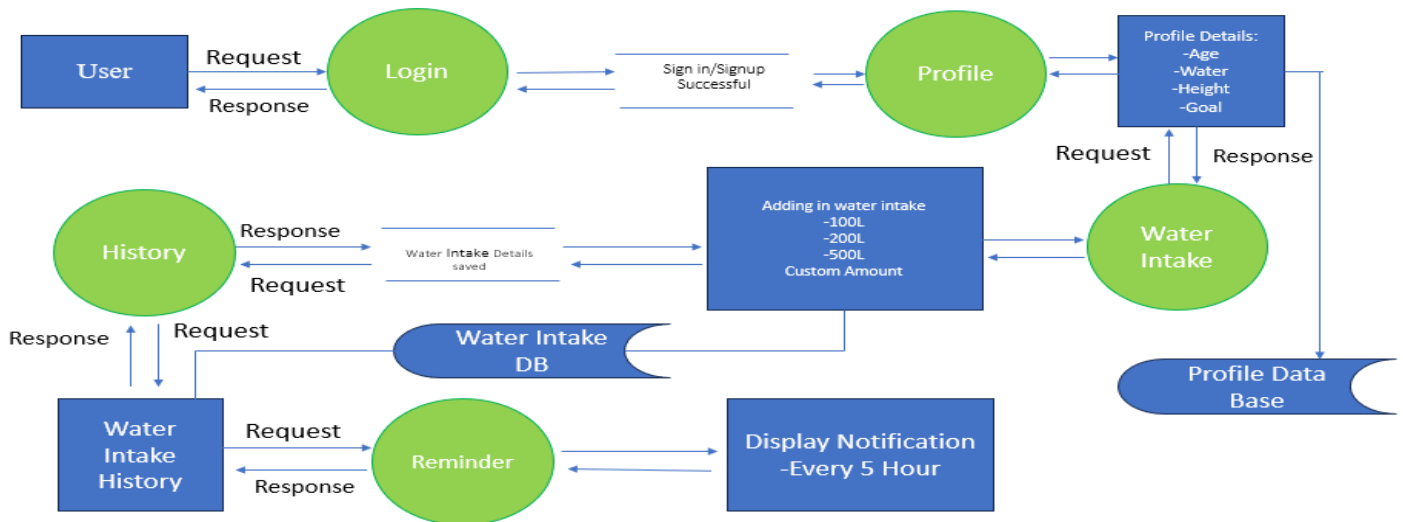


Figure 3 : DFD – Level 1

4. Technologies Used

Programming Language: Kotlin

Kotlin is a modern programming language developed by JetBrains, known for its conciseness, safety features, and interoperability with Java. It is the preferred language for Android app development due to its expressive syntax and powerful features, such as nullable types, extension functions, and coroutines. Kotlin offers seamless integration with existing Java codebases, allowing developers to leverage their Java knowledge while benefiting from Kotlin's enhancements. With features like type inference and smart casts, Kotlin enables developers to write cleaner and more concise code, reducing boilerplate and improving code readability. Overall, Kotlin's versatility and productivity enhancements make it an excellent choice for building high-quality Android applications.

Development Platform: Android Studio

Android Studio is the official Integrated Development Environment (IDE) for Android app development, provided by Google. It offers a feature-rich environment tailored specifically for building Android applications, including a powerful code editor, advanced debugging tools, and a flexible layout editor. Android Studio streamlines the development process with features like project templates, code completion, and version control integration, enabling developers to create, test, and deploy Android apps efficiently. Its built-in emulator allows developers to run and test their apps on various virtual devices, speeding up the testing and debugging phases. With continuous updates and improvements, Android Studio remains the go-to choice for Android developers worldwide.

Database: Room Database System

Room is a persistence library provided by Android Jetpack, designed to simplify database operations in Android applications. It offers an abstraction layer over SQLite, the native relational database engine for Android. Room provides several key components, including Entity, DAO (Data Access Object), and Database, to facilitate database management and interaction.

Entities represent data objects stored in the database, while DAOs define methods for accessing and manipulating these objects. Room's compile-time checks ensure the correctness of SQL queries and help prevent runtime errors.

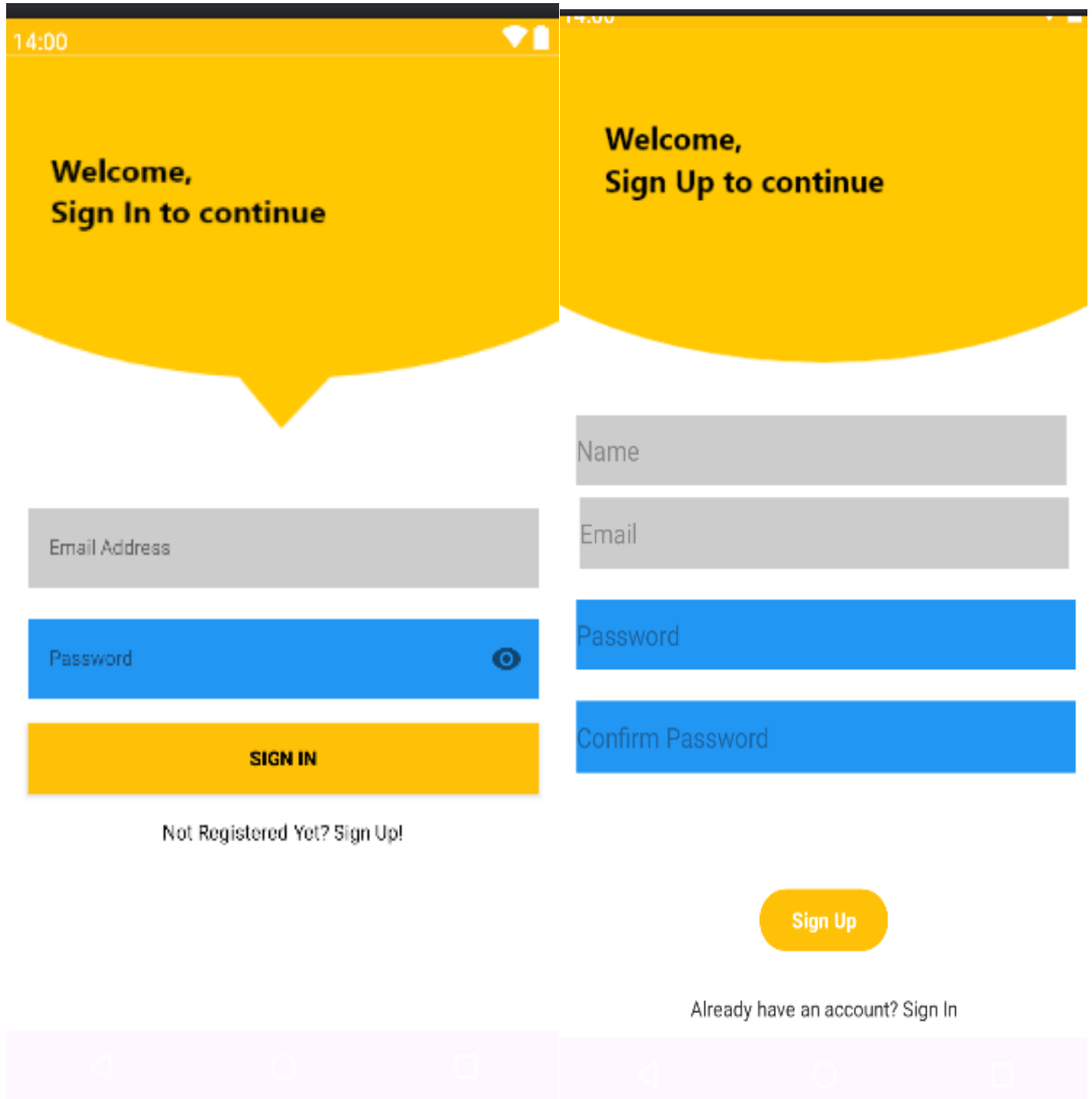
Additionally, Room offers support for Live Data and RxJava, allowing developers to observe database changes and react accordingly. With its simplicity, efficiency, and integration with other Jetpack components, Room is the recommended choice for managing app data in Android applications.

Other Tools: XML

XML (Extensible Markup Language) is commonly used for designing user interface layouts in Android applications. XML files define the structure and appearance of app screens, including views, widgets, and layouts. Android's layout editor in Android Studio provides a visual interface for designing XML layouts, allowing developers to drag-and-drop UI elements and customize attributes easily. XML layouts offer flexibility and reusability, allowing developers to create responsive and dynamic user interfaces. With its declarative syntax and hierarchical structure, XML provides a clear separation between UI design and business logic, enhancing maintainability and readability of code. Overall, XML remains an integral part of Android app development, enabling developers to create visually appealing and functional user interfaces.

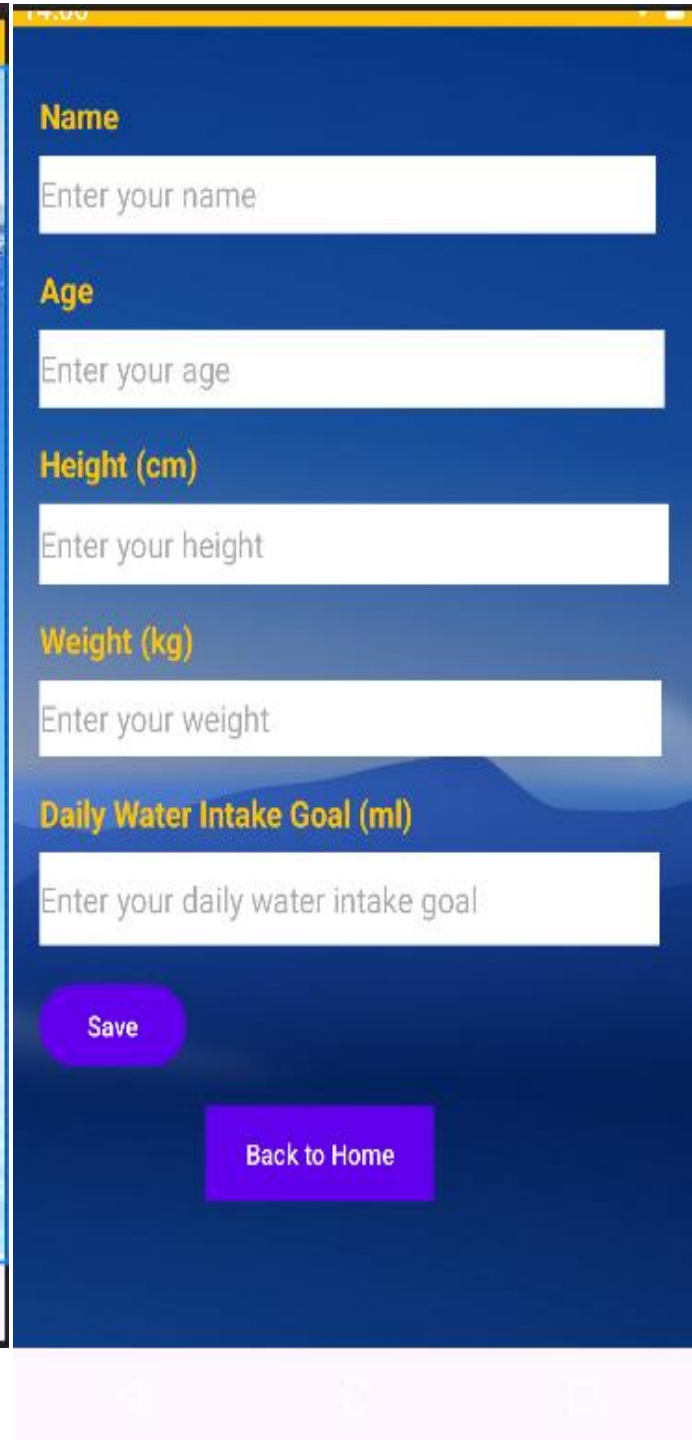
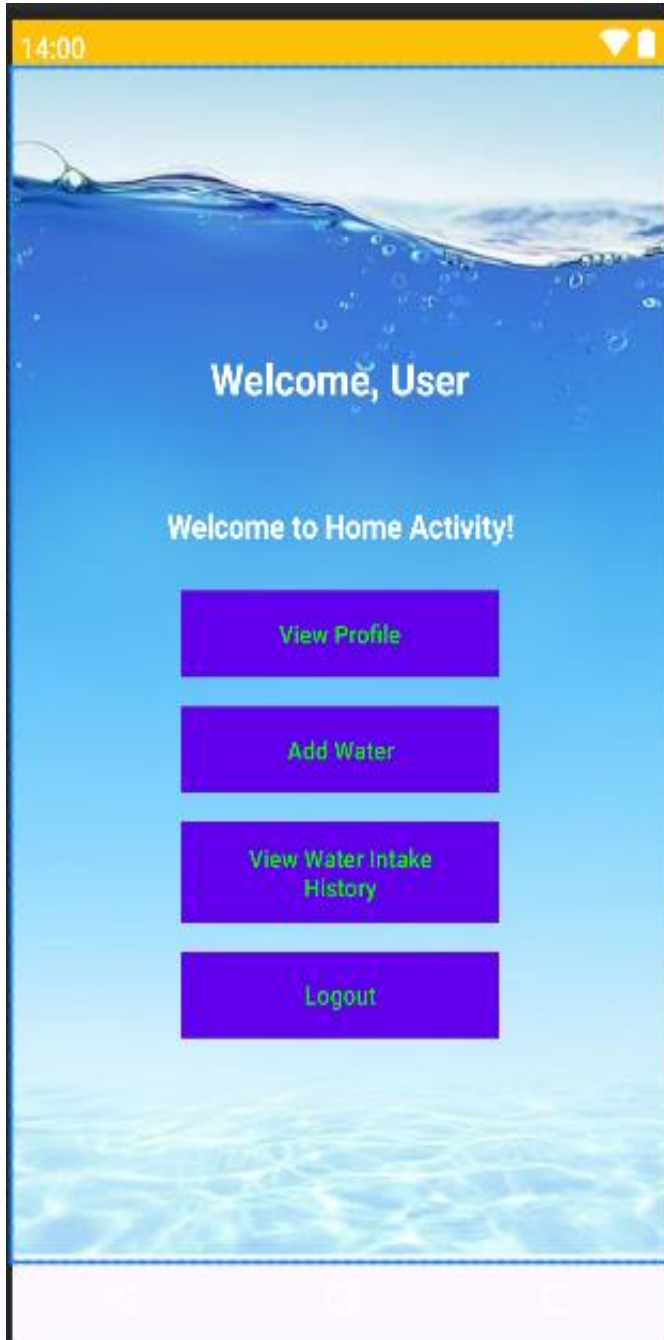
5. Screenshots

1. Login and Signup:



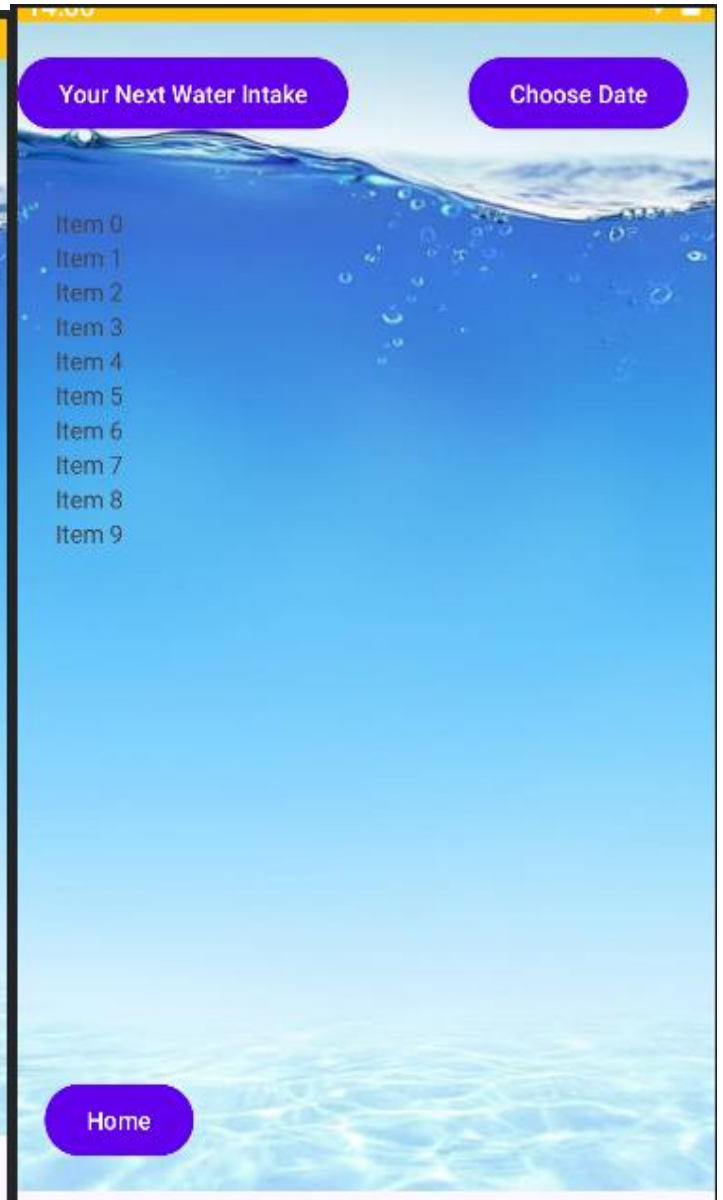
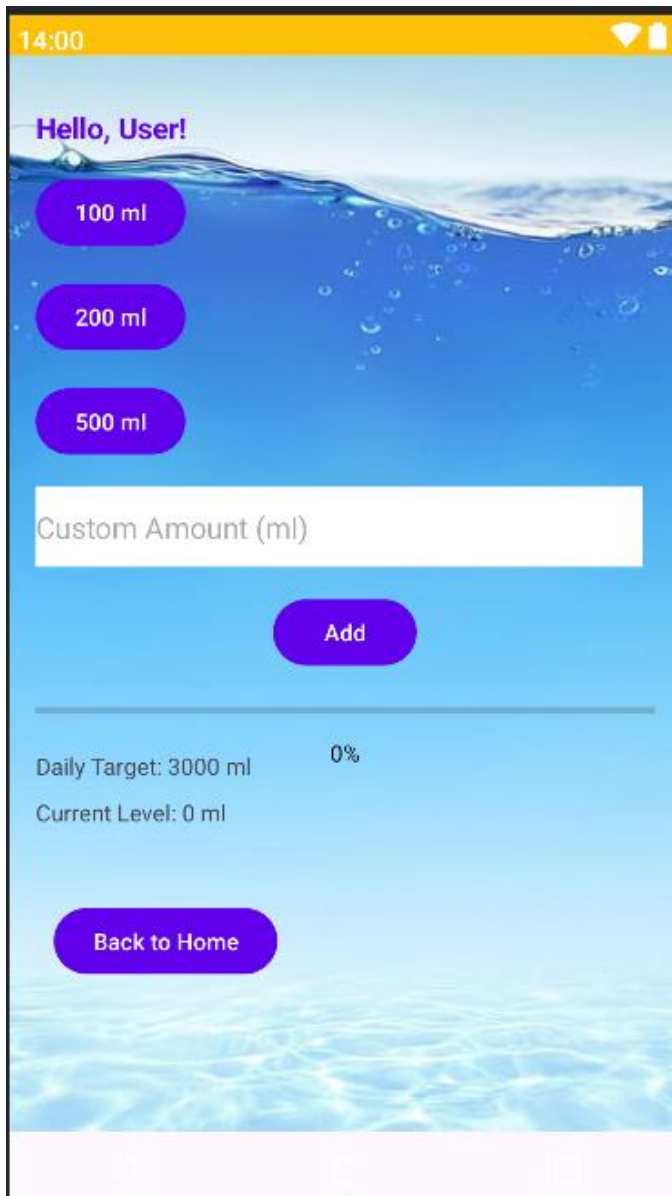
2. Homepage:

3.View Profile :



6. Add Water

7. View Water Intake History



6. Project Features

Feature 1: Hydration Tracker with Time Stamps

Description: Users can log their water intake with precise time stamps, allowing them to monitor their hydration habits throughout the day. This feature provides a detailed breakdown of when and how much water was consumed, aiding in identifying patterns and optimizing hydration routines.

Feature 2: Goal Adjustment and Progress Tracking

Description: Water Consumption Tracker enables users to adjust their hydration goals dynamically based on changing needs or preferences. Additionally, users can track their progress towards meeting these goals over time, with visual indicators and progress bars showing their current status relative to their objectives.

Feature 3: Smart Reminders and Scheduling

Description: The reminder notifications feature includes smart scheduling capabilities, allowing users to customize reminder frequency based on their typical daily routines and preferences. Users can also set specific times for reminders to align with key moments in their schedule, such as before or after meals or workouts.

Feature 4: Advanced Analytics and Insights

Description: In addition to tracking water intake, Water Consumption Tracker offers advanced analytics and insights into hydration patterns. Users can access detailed statistics, trends, and correlations between hydration levels and factors such as activity levels, weather conditions, sleep quality, hydration behavior, and more, providing a deeper understanding of their hydration needs. These insights empower users to make informed decisions and adjustments to their hydration habits, leading to improved overall health and well-being.

Feature 5: Sync Across Devices and Cloud Backup

Description: Water Consumption Tracker supports synchronization across multiple devices, ensuring seamless access to hydration data from smartphones, tablets, or computers. Additionally, the app offers cloud backup functionality to safeguard user data and enable easy restoration in case of device loss or replacement.

Feature 6: Social Sharing and Accountability

Description: Users have the option to share their hydration progress and achievements with friends, family, or peers through social media integration. This feature fosters accountability and motivation by allowing users to celebrate milestones, participate in challenges, or receive encouragement from their social network.

Feature 7: Integration with Wearable Devices

Description: For users who own wearable fitness trackers or smartwatches, Water Consumption Tracker offers integration with popular devices, enabling automatic syncing of hydration data. This integration provides a seamless experience and ensures that users can track their water intake effortlessly, even while on the go or during workouts.

6. User Guide

- **Download and Install:** Get started by downloading Water Consumption Tracker from the App Store (iOS) or Google Play Store (Android) and installing it on your mobile device.
- **Create Account and Set Profile:** Upon opening the app, create your account and set up your user profile by providing basic demographic information, hydration goals, and preferences.
- **Log Water Intake:** Easily log your water consumption by tapping on the "Log Water" button on the home screen, entering the amount consumed, and optionally adding notes or specifying the time.
- **Set Customizable Goals:** Customize your hydration goals in the "Goals" tab based on factors like age, weight, activity level, and health considerations. Track your progress with visual indicators and progress bars.
- **Receive Reminder Notifications:** Stay on track with regular hydration by setting customizable reminder notifications that prompt you throughout the day.
- **Review Hydration History:** Explore your hydration history in the "History" tab to gain insights into your patterns over time. Use this information to optimize your hydration routine.
- **Explore Advanced Analytics:** Delve into advanced analytics and insights to better understand your hydration needs, including statistics, trends, and correlations with factors like activity levels .
- **Sync Across Devices:** Sync your hydration data across multiple devices for seamless access and continuity.
- **Share Progress:** Share your progress and achievements with friends via social media integration to stay accountable and motivated.

7. Conclusion

Water Consumption Tracker revolutionizes the way you approach hydration by seamlessly integrating cutting-edge technology with user-centric design. By offering a plethora of features, from customizable goals to advanced analytics, Water Consumption Tracker ensures that every aspect of your hydration journey is effortlessly managed and optimized. Through its intuitive interface and insightful tools, Water Consumption Tracker not only simplifies the process of tracking your water intake but also empowers you to make informed decisions about your hydration habits. With Water Consumption Tracker by your side, achieving and maintaining optimal hydration levels becomes not just a goal, but a sustainable lifestyle choice.

Furthermore, Water Consumption Tracker goes beyond mere tracking to provide a holistic approach to hydration management. Its reminder notifications gently nudge you towards regular hydration, ensuring that you stay on track throughout the day. The ability to review your hydration history offers invaluable insights into your habits, allowing you to identify patterns and make meaningful adjustments. With Water Consumption Tracker, hydration becomes more than just a task; it becomes a journey of self-discovery and improvement, empowering you to take charge of your health and well-being.

In essence, Water Consumption Tracker isn't just an app—it's a companion dedicated to enhancing your hydration experience and improving your quality of life. Whether you're an athlete striving for peak performance, a busy professional juggling multiple responsibilities, or simply someone who values their health and vitality, Water Consumption Tracker is here to support you every step of the way. Embrace the power of hydration with Water Consumption Tracker and embark on a transformative journey towards a healthier, happier you.

8. References

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<https://youtu.be/HcNVfAc53SM?si=0Vj0LtSgYiJvNtx1>

<https://github.com/CodingSTUFF070/Log>

https://youtu.be/Eu7lkrDjBq8?si=AE9bkCgNPXb_nloP