SU AYAK İZİ

water usage tracking app

İstanbul Bilgi University | CMPE491 | 2024

TEAM

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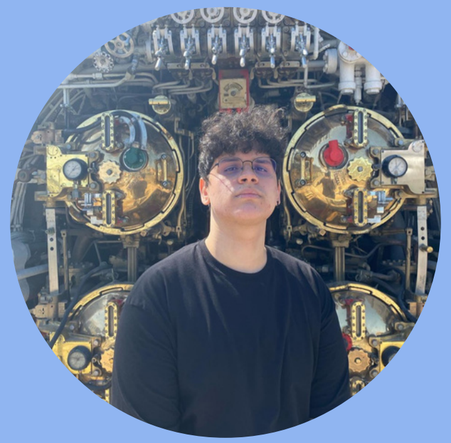

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ABSTRACT

Water scarcity is a pressing global concern, that calls for innovative approaches to encourage sustainable water consumption. This thesis introduces "Su Ayak İzi," a mobile application that is intended for precise tracking and evaluation of water consumption of individuals. The impact of "Su Ayak İzi" not only goes beyond tracking the water usage but also aligns with a broader objective in accordance with the United Nations' Sustainable Development Goals, specifically focusing on the aim of “clean water and sanitation”. The application aims to promote a collective awareness among users, encouraging a dedication to sustainable water usage for the improvement of our environment and future generations.

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LITERATURE REVIEW

The Earth's water is running out day by day. As Gall, N. (2015) stated, "Half of today's giant cities face mounting difficulties in securing and managing water resources for their growing populations. As in ancient times, water supply is emerging as a challenge to civilizations both rich and poor." Even though some actions are taken, the world still needs rigorous breakthroughs. As Tortajada, C. (2018) mentioned, "Innovative proposals that would improve management of water resources in general and of water supply, sanitation and wastewater management in particular did not emerge, with the consequent negative health and environmental impacts for billions of people globally."

PURPOSE AND IMPORTANCE

Over 50 olympic swimming pools per second

Every year, 4.3 trillion cubic meters of freshwater is used. This amount is equivalent to over 50 olympic swimming pools every second.

It's comparable to if everyone on the planet would drink over 4 glasses of water every single minute.

Virtual water, which is the amount of water people use that is not visible to them. It in the products that is bought and a larger chunk is in the food eaten.

PURPOSE AND IMPORTANCE

A mobile app for developing behavior on conscious consumption

Handy way of tracking your water

Serves for Sustainable Development Goals

MARKET SEARCH

- This project stands out by employing a unique method to track and monitor the daily water consumption habits of individuals.
- Similar works measures only virtual water consumption.
- Dedicated to understanding and comparing daily water consumption.
- The focus on daily granularity distinguishes the product from others.
- Promotes a more immediate and practical understanding of individual water consumption patterns.

RELATED WORKS

SU AYAK İZİNİ HESAPLA

Bir kişinin ortalama tükettiği su miktarına su ayak izi denir. Su ayak izinizi hesaplayarak, Türkiye'nin 2030 yılında su sorunu yaşamaması için neler yapabileceğinizi görebilirsiniz.

Yaşadığınız İl

Yaşadığınız İli Seçiniz ▲

İLERİ

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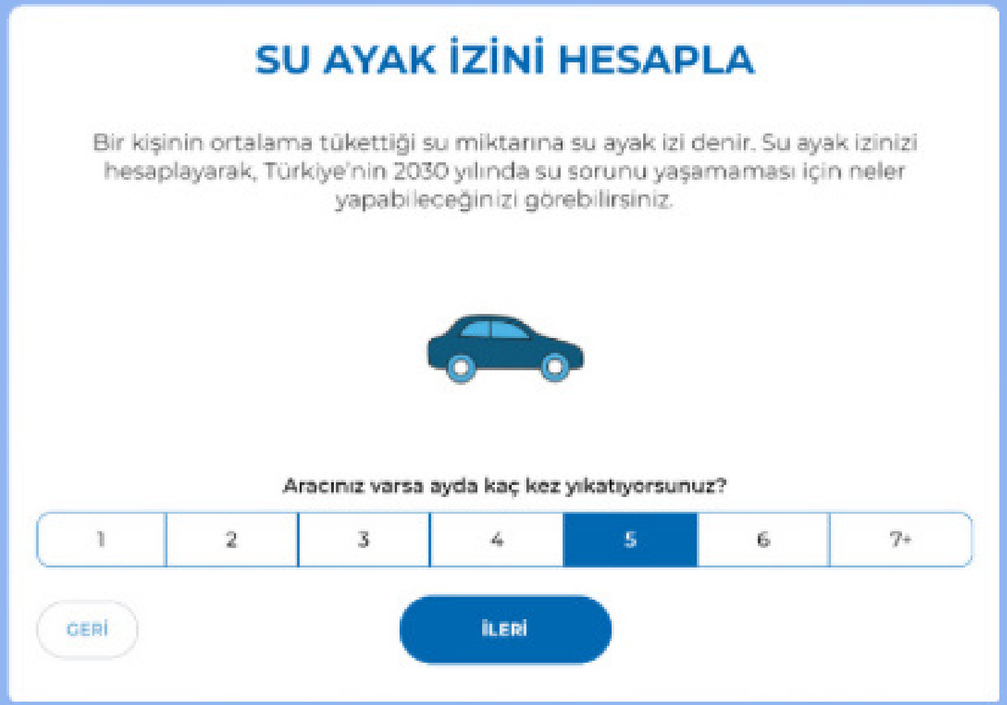
Haftalık kırmızı et tüketiminiz (kg)

0	0-1 KG	1-2 KG	2-3 KG	3 KG+

GERİ

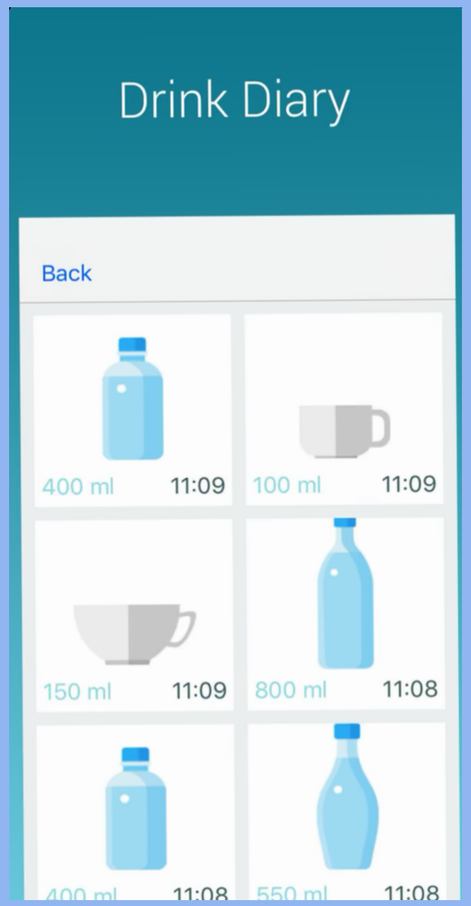
İLERİ

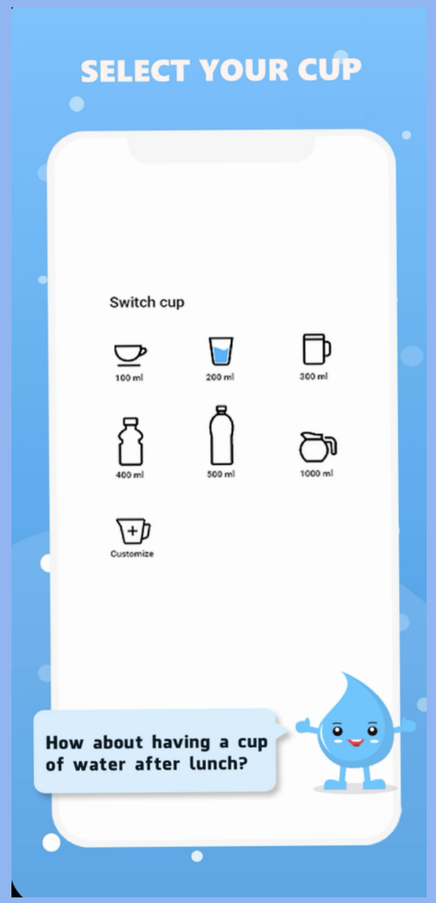
RELATED WORKS



Yarının Suyu project which is a website, calculates annual virtualt water consumption once

RELATED WORKS





Even though the main functionality differs from the project “Su Ayak Izi” , some some water reminders (for drinking) can be considered as one of the related works.

METHODOLOGY

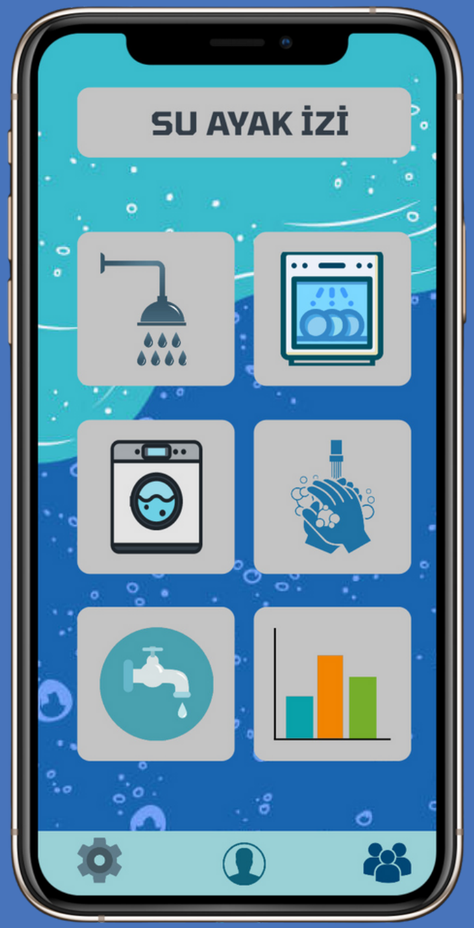
- Aligns with Sustainable Development Goal 6 - clean water and sanitation
- Challenges like data quality and user engagement are addressed through design improvements and user feedback loops.
- Combines technology advancements, user engagement strategies, and sustainability pledges.

METHODOLOGY

- User-friendly platform for monitoring individual water consumption.
- Gathers unique user data on water-intensive activities,
- Prioritizes privacy
- Incorporates features like easy-to-navigate interfaces, reminders, and gamification.

PROTOTYPES

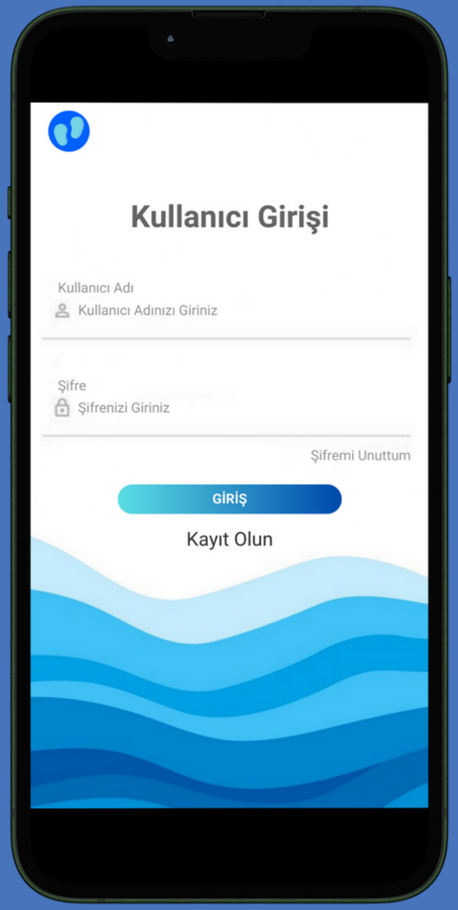
Splash Screen



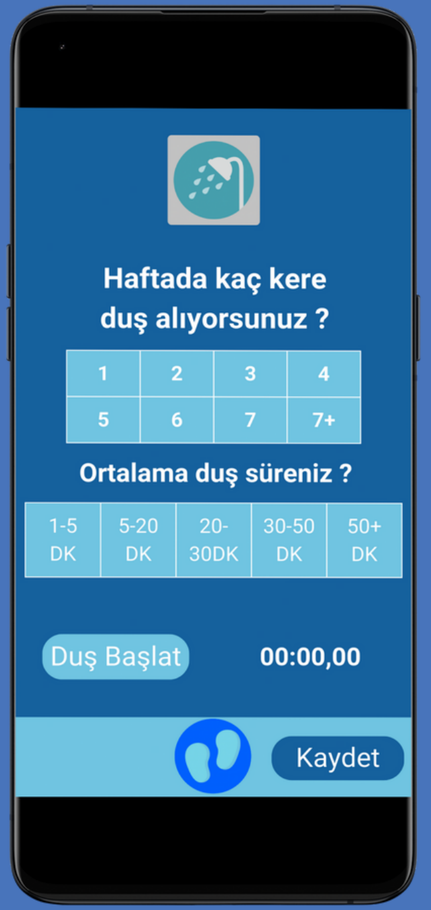
Demo Home Page 1

Demo Home Page 2

PROTOTYPES



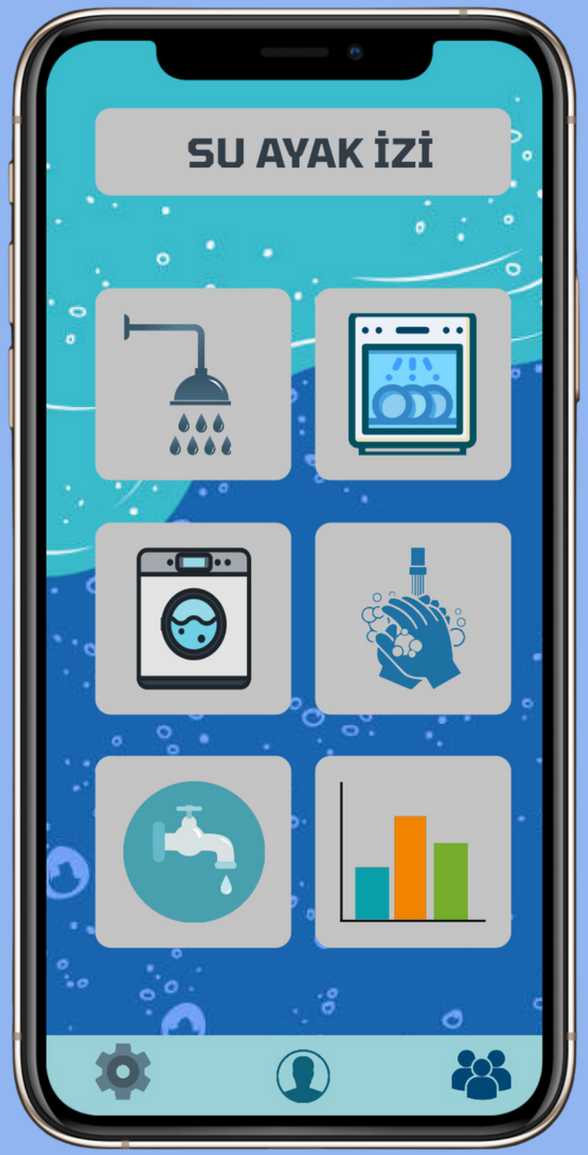
Demo Login Page



Demo Showering Page

FEATURES

- Tracking consumption routine individually
- Compared consumption data of users
- Water reminder
- Measuring water usage time-based and liter based



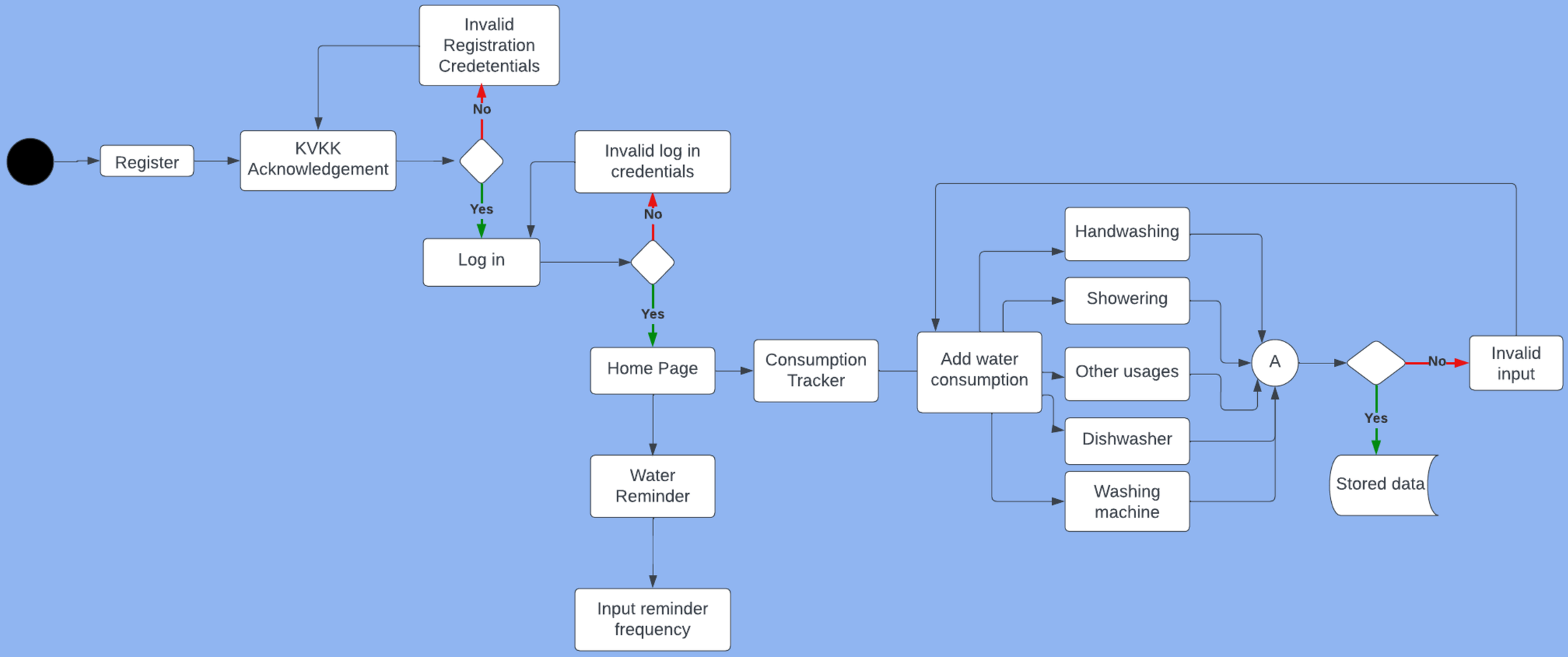
Time-based measuring is choosen as a parameter since the duration of the most people is wastefully.

Compared user data configuration is to create a common sense of thriftiness by showing summarized usage data

Average usage amounts for machine brands, liter-based, will be used since it is a cronical usage for every house, every person.

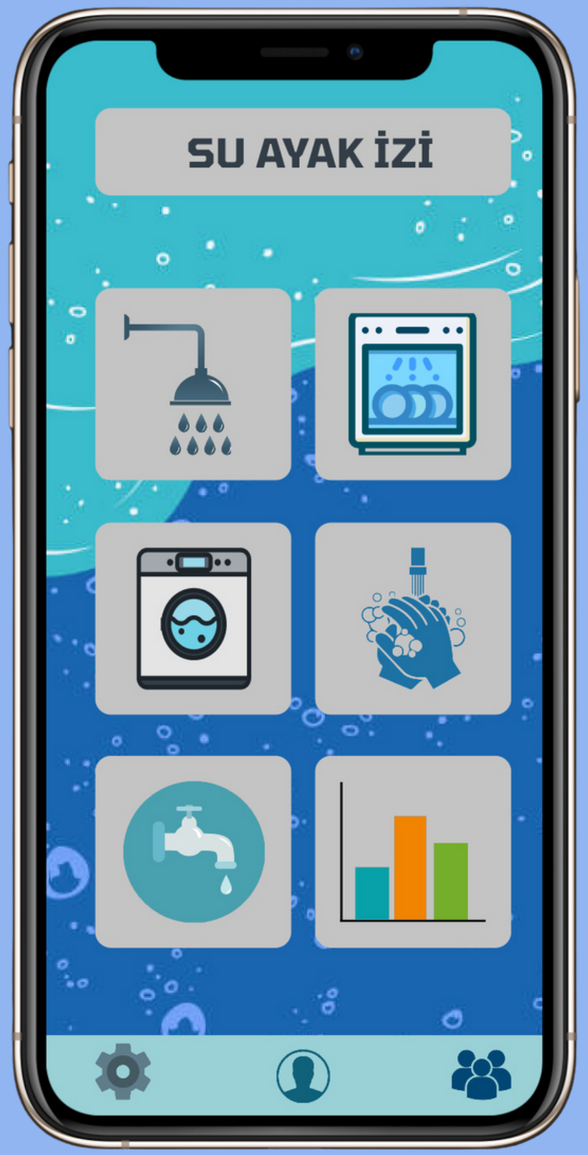
Other consumption data, users’manual inputs which can not be calculated by application so that it involves to input manually.

UML DIAGRAM


Invalid Registration Credetentials
No
Register
KVKK Acknowledgement
Yes
Invalid log in credentials
No
Log in
Yes
Home Page
Consumption Tracker
Add water consumption
Handwashing
Showering
Other usages
Dishwasher
Washing machine
A
No
Invalid input
Yes
Stored data
Water Reminder
Input reminder frequency

HOW THE DATA IS OBTAINED

- Get user routine during registration
- Time-based showering measurement
- Verified liter-based water waste data for dishwasher and washing machine
- Manuel input by users



TOOLS AND TECHNOLOGIES

- Language: Java + Android Studio
- UI/UX Design: Figma + Canva
- Database: MySQL
- Backend: Node.js
- Testing and version control: JUnit + git

CONSTRAINTS

- **Platform Compatibility:**

  Challenge: Launching only on Google Play Store, since AppStore requires more budget and it involves too much time to release because of its policies.

- **Technical Infrastructure:**

  Challenge: Establishing and maintaining a robust technical infrastructure may pose challenges, especially as the user base expands.

  Mitigation: Leveraging cloud services, adopting scalable architecture, and regularly assessing the infrastructure's capacity can address potential bottlenecks.

CONSTRAINTS

- **Data Accuracy and Reliability:**
  Challenge: The accuracy of water consumption data relies heavily on user input. Inaccurate or inconsistent data entry by users may occure.
  Mitigation: Implementing validation checks, user prompts, and periodic reminders can help encourage accurate data entry.
- **Privacy and Security Concerns:**
  Challenge: KVKK policies, collecting and storing personal water consumption data.
  Mitigation: Implementing robust data encryption, secure storage practices, and transparent privacy policies.

PROJECT TIMELINE

PROJECT TIMELINE

FUTURE WORKS

- Embedded system integration (such as wifi-moduled devices integrated into the armature that measures the amount of water consumed)
- Data management using machine learning
- Water bill calculation (excessive amount of bill will be notified)

IN CONCLUSION

- The "Su Ayak Izi" serves as an pioneering solution for precise monitoring and examination
- Providing users with a thorough comprehension of their patterns.
- In line with the SDG principles - clean water and sanitation.

IN CONCLUSION

- To develop behavioral change on a larger scope.
- Helps for addressing the worldwide issue of water shortage
- Not only to measure water usage, but also to stimulate a significant change towards a future that is more environmentally friendly and adaptable to water scarcity.

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PLEASE ASK YOUR QUESTIONS IF ANY

Thanks for listening!