FINAL PROJECT – EF234801

DESIGN AND IMPLEMENTATION OF A FRONTEND FOR RECOMMENDING HEALTHIER ALTERNATIVES IN AN ALCOHOL MANAGEMENT APPLICATION

KHAIRIYA MAISA PUTRI

NRP 5025211192

Advisor

Hadziq Fabroyir, S.Kom., Ph.D.

NIP 198602272019031006

Co-Advisor

Elias Blanch

Undergraduate Study Program of Informatics

Department of Informatics

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Institut Teknologi Sepuluh Nopember

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APPROVAL SHEET

DESIGN AND IMPLEMENTATION OF A FRONTEND FOR RECOMMENDING HEALTHIER ALTERNATIVES IN AN ALCOHOL MANAGEMENT APPLICATION

FINAL PROJECT

Submitted to fulfill one of the requirements

for obtaining a bachelor's degree at

Undergraduate Study Program of Informatics

Department of Informatics

Faculty of Intelligent Electrical and Informatics Technology

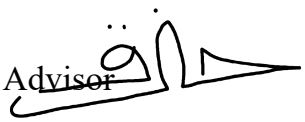
Institut Teknologi Sepuluh Nopember

By: **KHAIRIYA MAISA PUTRI**

NRP. 5025211192

Approved by Final Project Examiner Team:

1. Hadziq Fabroyir, S.Kom., Ph.D — Advisor



2. Elias Blanch — Co-Advisor

SURABAYA

Juli, 2025

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STATEMENT OF ORIGINALITY

The undersigned below:

Name of student / NRP	:	Khairiya Maisa Putri / 5025211192
Department	:	S-1 Teknik Informatika
Advisor / NIP	:	Hadziq Fabroyir, S.Kom., Ph.D / 198602272019031006

Hereby declare that the Final Project with the title of "Design and Implementation of a Frontend for Recommending Healthier Alternatives in an Alcohol Management Application" is the result of my own work, is original, and is written by following the rules of scientific writing.

If in the future there is a discrepancy with this statement, then I am willing to accept sanctions in accordance with the provisions that apply at Institut Teknologi Sepuluh Nopember.

Acknowledged
Advisor

Hadziq Fabroyir, S.Kom., Ph.D.
NIP. 198602272019031006

Surabaya, 28 July 2025
Student

Khairiya Maisa Putri
NRP. 5025211192

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PERNYATAAN KODE ETIK
PENGGUNAAN AI GENERATIF

Code of Conduct Statement: Generative AI or AI-Assisted Usage

Saya yang bertanda tangan di bawah ini:
I, the undersigned:

Nama Mahasiswa / NRP *Full Name / Student ID*	:	Khairiya Maisa Putri / 5025211192
Program Studi *Study Program*	:	S-1 Teknik Informatika
Judul Tugas Akhir *Final Project Title*	:	Design and Implementation of a Frontend for Recommending Healthier Alternative in An Alcohol Management Application

dengan ini menyatakan bahwa pada Tugas Akhir dengan judul di atas tersebut:
hereby declare that in the Final Project with the above title:

No.	**Pernyataan** *Statement*	**(☑)**
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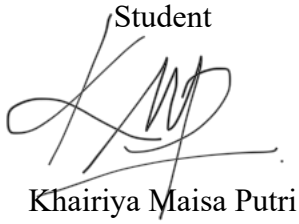

Khairiya Maisa Putri
NRP. 5025211192

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ABSTRACT

DESIGN AND IMPLEMENTATION OF A FRONTEND FOR RECOMMENDING HEALTHIER ALTERNATIVES IN AN ALCOHOL MANAGEMENT APPLICATION

Full Name / Student ID	**:**	**Khairiya Maisa Putri / 5025211192**
Department	**:**	**Informatics ELECTICS - ITS**
Advisor	**:**	**Hadziq Fabroyir, S.Kom., Ph.D**

Abstract

Young adults face increasing alcohol abuse problems due to social influences alongside their poor understanding of individual drinking patterns. Many existing intervention methods focus on treating developed alcohol-related problems instead of creating initial prevention measures. The research presents DrinkWise as a mobile application that tracks alcohol consumption while suggesting healthier alternatives to users. Through its user-friendly dashboard, users can track their alcohol consumption while setting weekly goals and receive personalised recommendations for healthier alternatives.

The application development uses React Native with Expo Framework and NativeWind to seamlessly bring DrinkWise to Android and iOS platforms. The app leverages real-time tracking, personalised notifications, and interactive features to encourage users to make informed decisions about their alcohol consumption. By integrating behaviour-change strategies and data-driven insights, DrinkWise supports users in gradually reducing their intake in a natural and sustainable way.

This research emphasises the role of digital tools in promoting responsible drinking habits. DrinkWise creates a proactive yet straightforward user interface that enables young adults to excel in managing their alcohol use while selecting better lifestyle options. The research explores the app's potential in encouraging long-term behavioural change and fostering a more mindful approach to drinking.

Keywords: Alcohol Consumption Monitoring, Frontend Development, Digital Intervention, Mobile Application, React Native.

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ACKNOWLEDGEMENT

Assalamu'alaikum warahmatullahi wabarakatuh

All praise be to Allah SWT for his blessings and grace, through which the author has been able to complete this final project entitled "Design and Implementation of a Frontend for Recommending Healthier Alternatives in an Alcohol Management Application" as a requirement for obtaining the academic degree, Sarjana Komputer at Institut Teknologi Sepuluh Nopember.

This final project could not have been completed successfully without the guidance, support, and motivation from various individuals. Therefore, the author would like to express sincere gratitude to:

1. The author's beloved parents and brother for their endless support, unconditional love, and endless prayers throughout the author's educational journey. Their encouragement, patience, and sacrifices have been the foundation of the author's strength and perseverance.
2. The author would also like to extend her deepest thanks to her best friends, Dustin, Wulan, Alya, Ica, Rara, Cindy, Adel, Jeje, Ferro and Hana, for being her constant source of strength, joy, and motivation throughout this academic journey. Your endless encouragement, patient listening, and belief in me, even when I doubted myself, meant more than words can express.
3. To my teammates, Kayla, Eric, Ecky, Tom, and Jason, thank you for the laughs, the emotional support, the technical help, and even the procrastination sessions. This project wouldn't have been the same without you. I'm lucky to have had such a solid team.
4. Lastly, the author would like to thank Mr. Hadziq Fabroyir, as the supervisor, for the guidance, suggestions, and patience throughout the preparation of this final project.

The author acknowledges that this final project is not without shortcomings. Therefore, constructive feedback and suggestions for improvement are highly appreciated. It is the author's hope that this research will contribute positively to the advancement of knowledge and technology.

Wassalamu'alaikum warahmatullahi wabarakatuh

Best Regards,
Khairiya Maisa Putri

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TABLE OF CONTENTS

LIST OF FIGURES

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LIST OF TABLES

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LIST OF SOURCE CODE

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CHAPTER 1
INTRODUCTION

1.1 Background

Alcohol stands as the main substance Australians consume because about 80 percent of adults in the country use it every year. Alcohol use happens across different social environments and cultural situations that respond to multiple individual and public influences. People who drink alcohol often face numerous health risks that raise their chances of getting hurt while causing continued diseases and adverse developmental consequences for both unborn babies and nursing infants. Prior to this, excessive alcohol consumption leads to individual health problems, which extend to family disruptions and consume public health resources (National Health and Medical Research Council, 2020). Given these widespread risks, it is essential to explore ways to encourage responsible alcohol consumption and minimise harm.

Current data shows the widespread existence of harmful drinking patterns in Australia, which prompts immediate action towards this matter. Alcohol health risks in 2022–2023 affected 31% of Australians, equating to approximately 6.6 million people. Research data shows that people drink 10 or more standard drinks weekly as their average (25%), and the consumption of four drinks or above daily occurs monthly by 24% of individuals (Australian Institute of Health and Welfare, 2024). The level of alcohol misuse necessitates immediate action because a significant portion of young adults falls into this risk category.

Statistics indicate that young adults aged 18–24 represent the demographic most heavily impacted by alcohol intake because many of them exceed alcohol recommendations. Research from 2022 established that 36.1% of young adults exceed the Australian Adult Alcohol Guideline in their alcohol consumption (Australian Bureau of Statistics, 2022). The most prominent percentage of alcohol abuse occurs in young adults aged 18–24, where 33.7% consume at least five standard drinks daily once a month (Australian Bureau of Statistics, 2022). The formation of habits takes place mainly during young adulthood; thus, purposeful intervention efforts for this demographic would lead to sustainable modifications in their drinking patterns. The development of an effective solution requires evaluation of current tools that assist people in controlling their alcohol consumption.

Mobile applications effectively handle excessive alcohol use because they provide immediate tracking capabilities alongside goal-establishing functions and momentary feedback, which constitute essential components for maintaining lasting transformation. Modern public health campaigns benefit from personalised recommendations, so they proved more successful at promoting habit formation than conventional approaches. The creation of a mobile application that joins goal establishment with behaviour monitoring and activity suggestion functions demonstrates great protential to help young people control their alcohol intake.

Three applications currently support drinkers in controlling their alcohol use through features found in Drinkaware, Sober Grid, and I Am Sober. Drinkaware serves users in the UK by enabling alcohol consumption logging while providing educational resources for controlled alcohol use. Sober Grid operates as a social network for people seeking sobriety support to help users meet others who share their recovery path. I Am Sober serves as a mobile application that tracks sobriety progress along with motivational tools for helping its users fight alcohol and substance addiction. These applications deliver important features, but their primary focus

serves general alcohol reduction and addiction recovery without specialised moderation strategies for Australian young adults. The existing gap gives room to develop alcohol consumption management through personalised goals targeted at Australian young adults.

The main goal behind this research is to design and implement the frontend elements of DrinkWise, a mobile app that supports young Australian adults in minimising their alcohol use. The research will develop an easy-to-use user interface and enhance the user experience to achieve smooth interactions. The application will promote drinking habits toward responsibility through weekly alcohol intake goal setting and tailored recommendations for alternative healthy activities. The research prioritises frontend development aspects to establish an interactive interface alongside user engagement methods and system flow for building an accessible user-oriented platform.

1.2 Problem Statement

The increasing rates of alcohol consumption among young adults have prompted the development of digital interventions to promote healthier lifestyles. While several alcohol management apps provide features for tracking consumption and setting goals, many fall short in presenting personalised and engaging recommendations for alternative activities that can support behavioural change. There is a lack of well-designed frontend interfaces that focus on delivering these alternatives in a compelling and accessible manner.

This final project addresses this gap by designing and implementing the recommendation interface and the detailed activity page within a frontend for an alcohol management application. These pages aim to present personalised, healthier activity suggestions and detailed, context-rich information to help users explore meaningful alternatives to drinking.

To address this problem, the following research questions will be explored:

1. How can a user-friendly interface be designed to effectively present personalised healthier activity recommendations?
2. What frontend design principles and technologies are most suitable for developing the recommendation and activity detail pages?
3. How can the recommendation and detail pages encourage users to explore alternatives and reduce their alcohol consumption?
4. In what ways can personalised and detailed activity information improve user engagement and support long-term behaviour change?

1.3 Scope of Research

This research is limited in scope to ensure a focused and manageable investigation. It centres on the design and development of specific frontend components within an alcohol management mobile application, particularly those aimed at encouraging healthier lifestyle choices among young adults. The following boundaries have been set to clarify the extent of the study:

1. This research focuses on young adults aged 18 – 24 who want to track and reduce their alcohol consumption, excluding individuals with severe alcohol addiction requiring medical intervention.

2. This research specifically focuses on the design and implementation of the healthier alternative recommendation page and the activity details page within a mobile application. Other features such as alcohol intake tracking, goal setting, and progress monitoring are outside the scope of this research.
3. The application will be tested with a small group of young adults, and its evaluation will rely on user feedback and engagement metrics rather than long-term behavioural change studies.

1.4 Purpose of the Research

The purpose of this research is to design and develop the discover and alternative activity pages of DrinkWise, a frontend application that enables users to monitor their alcohol consumption and encourages healthier alternatives. The study focuses on creating an intuitive interface with personalised alternative activity recommendations to enhance user engagement. Finally, the research assesses how well the app enables customer base expansion and behavioural transformation through awareness development.

1.5 Significance of the Research

This research is significant because it develops a user-friendly digital approach that gives recommendations to individuals to help them choose an activity that does not involve drinking alcohol in hopes of creating better health habits. DrinkWise provides a user-friendly interface, goal-setting features, and personalised recommendations, which can enhance self-awareness and promote responsible drinking. The research implements technological solutions to advance public health functions by offering an accessible alcohol consumption management platform that promotes positive behavioural shifts.

CHAPTER 2
LITERATURE REVIEW

2.1 Related Research

This subsection explains the related research studies that serve as references for completing this final project proposal. These research studies will be listed and explained in Table 2.1.

Table 2.1 Related Research

Research Title	Methodology	Description
Alcohol Consumption: A National Survey (Australian Bureau of Statistics, 2022).	This study utilised data from the 2022 National Drug Strategy Household Survey, employing a cross-sectional design to assess alcohol consumption behaviours among Australian young adults aged 18–24.	The research found that 33.7% of young adults in this age group consumed five or more standard drinks on a single occasion at least monthly, indicating a higher prevalence of binge drinking compared to other age groups.
A Review of Factors Influencing Drinking Behaviours in Young Australian Adults Using a Behavioural Framework Approach (Palmer, Irwin, & Desbrow, 2024).	This study conducted a comprehensive literature review, analysing existing research to identify factors that influence drinking behaviours among Australian young adults aged 18–24.	The review synthesised findings on various determinants of alcohol consumption in this age group, including social, cultural, and environmental influences, aiming to inform targeted interventions and policies.
Approaches for Implementing Digital Interventions for Alcohol Use Disorders in Primary Care: A Qualitative, User-Centred Design Study (Glass et al., 2022).	This study used qualitative research methods, including semi-structured interviews with 18 patients and 9 clinicians, to explore preferences for mobile health apps designed to address alcohol use disorders.	The researchers analysed the responses to understand the participants' needs and design expectations. The findings emphasised the importance of personalised interventions, clinician involvement, and ease of use in mobile health applications.

Australian First-Year University College Residents' Alcohol Consumption and Alcohol-Related Harm (Corney & du Plessis, 2022).	The study utilised a cross-sectional survey design, collecting data from first-year university residential college students to assess their alcohol consumption patterns and related harms.	This research highlighted the prevalence of hazardous drinking behaviours and associated negative outcomes among this demographic, underscoring the need for targeted interventions within university settings.

2.2 Basic Theory

This subsection explains the basic theory that is used in this research.

2.2.1 Frontend

Frontend development turns UI/UX designs into functional user interfaces by integrating core web technologies, including HTML, CSS, and JavaScript. Through this method, users experience uninterrupted interaction when accessing websites and mobile applications. The field demands that frontend developers possess comprehensive knowledge of Bootstrap and Tailwind in addition to AngularJS and ReactJS frameworks (Prasad, 2022). These tools enable developers to create more efficient applications that maintain visual consistency while adjusting appropriately for various devices and screen sizes. Enhancing website speed and designing interfaces for easy accessibility are essential responsibilities of frontend developers in delivering optimum user experiences.

2.2.2 React Native

React Native is an open-source framework that utilises JavaScript and React to develop mobile applications. It gives a structured foundation for building mobile applications on different platforms, specifically Android and iOS. This allows developers to write essential parts of their code once and execute them across multiple platforms (Cybellium Ltd. & Hermans, 2023).

Because of its flexibility in creating high-quality mobile applications across different platforms, the author uses it as the framework for building the frontend of DrinkWise. Another reason for choosing React Native is that it utilises JavaScript, a language with which the author is familiar. This will ensure fast development cycles and minimise the learning curve.

2.2.3 Expo Framework in React Native

Expo is a framework that makes developing and deploying React Native apps much easier. It has built-in APIs, supports over-the-air updates, and provides a user-friendly environment. One of its biggest advantages is that it eliminates the need for complicated native setup, allowing developers to focus on building features rather than dealing with configurations. This makes testing and launching apps much faster and more efficient (Expo Documentation, 2023).

Expo is ideal for this project because it simplifies managing React Native components and removes the hassle of dealing with complex configurations. This made the development process much faster, allowing for quick prototyping and smooth testing. Its ease of use also created a more efficient workflow, letting me focus more on frontend logic and UI design rather than technical setup.

2.2.4 NativeWind

NativeWind is a styling library that brings the utility-first approach of Tailwind CSS to React native development. It lets developers apply styles directly to components using class names, making managing styles throughout the app much easier. This approach not only keeps things consistent but also simplifies the overall styling process, improving the development workflow (Shadi, 2023). For this project, NativeWind is chosen due to its seamless integration with Tailwind CSS, which offers a simple and effective way to design the user interface. This made turning the initial prototype into a fully functional mobile app much quicker, saving time and ensuring a smooth transition from design to implementation.

2.2.5 Optimising Frontend Performance in Mobile Applications

Optimising frontend performance is essential for delivering a seamless user experience in mobile applications. One effective method for achieving this is by reducing the size of mobile files such as images and videos, which can improve load times and responsiveness. Another key strategy is minimising HTTP requests by reducing unnecessary network calls, thus decreasing load times and increasing app efficiency. Additionally, implementing caching strategies to store frequently accessed data locally can significantly reduce the need for repeated network requests, improving the application's overall performance. Monitoring performance metrics on a regular basis also helps identify bottlenecks early, allowing developers to optimise the app before performance issues affect the user experience. Focusing on these strategies ensures that mobile applications are responsive, fast, and efficient (Netguru, 2023).

2.2.6 User Interface Considerations for Alcohol Consumption Monitoring

When designing a user interface for an alcohol monitoring app, focusing on user needs is crucial. This user-centred approach ensures the app is relevant and beneficial, especially for those with alcohol use disorders. By collecting feedback from users and healthcare professionals, the design can effectively cater to the target audience. Easy navigation is essential for users to track their habits and access resources. Personalised feedback based on user input motivates healthier choices. Securing user data builds trust, which is critical for long-term engagement. By adhering to these design principles, developers can create an app that effectively assists individuals in managing alcohol consumption (Glass et al., 2022).

CHAPTER 3
METHODOLOGY

3.1 Research Method

This final project proposal research will follow a structured methodology to ensure the systematic development and evaluation of DrinkWise, a frontend application for monitoring alcohol consumption and recommending healthier alternative activities. The process is divided into four key phases, as illustrated in Figure 3.1.

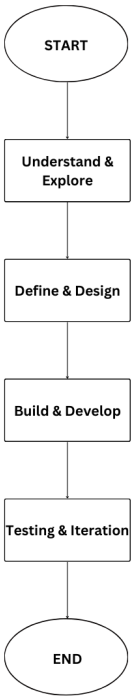

Figure 3.1 Flowchart of the Research Methodology for the Development of DrinkWise

This structured approach will ensure that DrinkWise is built based on research-driven insights, user needs, and technical feasibility, leading to an optimised solution for tracking alcohol consumption.

3.1.1 Understand & Explore

At the project's outset, the author will adopt an Agile framework, allowing for iteration and adjustments as new insights emerge throughout the development process. The author will begin by thoroughly exploring the social dynamics surrounding alcohol consumption among young Australians. Through interviews and surveys, the author will gather critical information on how peer pressure and social settings influence drinking habits.

These findings will deepen the author's understanding of users' key challenges and help conceptualise features that support healthier choices. While collecting this information, the author will explore various technical frameworks, assessing their suitability for the project's goals and flexibility for iterative improvements. This research phase will lay the foundation for the subsequent stages, ensuring that user needs will guide the author's decisions at every step.

3.1.2 Define & Design

As part of the author's Agile process, the author will define and design the app's frontend based on the initial research insights. During this phase, the author will create wireframes and user flows to ensure that each interface element effectively addresses user needs while maintaining an intuitive and engaging experience. The author will structure the user journey by focusing on the frontend design, emphasising usability and accessibility.

The author will finalise the designs for the key frontend components, including the interface for personalised activity suggestions and the suggested activity details page. The Agile approach will allow for flexibility, enabling the author to incorporate feedback and refine the UI/UX as needed. By the end of this phase, the author will have a well-defined plan for implementing these features, along with the necessary frontend frameworks and tools.

3.1.3 Build & Develop

The Agile framework will prove particularly valuable during the building and development phase. The author will structure the development into sprints, focusing on implementing key frontend features to ensure a smooth and responsive user experience. The author's primary goal will be to create an intuitive interface that effectively presents data, facilitates user interactions, and enhances engagement through seamless navigation.

Throughout this stage, the author will conduct regular testing and will gather feedback to refine the frontend components, ensuring they will function as intended before progressing. By iterating in short sprints, the author will quickly identify and resolve issues, maintaining alignment with the overall project objectives while ensuring a polished and user-friendly frontend.

3.1.4 Testing & Iteration

The testing and iteration phase will focus on continuously improving the frontend based on real-time user feedback. After developing the app's initial version, the author will conduct multiple rounds of user testing to evaluate how users interact with the interface. These sessions will provide valuable insights, highlighting areas that need design, usability, and responsiveness refinement.

Following each round of testing, the author will make iterative adjustments to enhance the user experience, ensuring smoother navigation and better accessibility. The author will implement the suggested improvements and re-test the app, repeating this process until the interface is stable, intuitive, and user-friendly. This continuous cycle of testing and refinement will allow the author to create a polished frontend that meets the project's usability and performance standards.

3.2 Problem Analysis

Excessive drinking among young adults, especially in university settings, is becoming a serious issue. Peer pressure often pushes students to drink more than they intended to, impacting their health, confidence, and academic performance. Many don't even realise they're developing unhealthy drinking habits until it's too late. While there are treatment programs available, most of them focus on fixing the problem after it has already escalated, rather than helping young adults recognise and manage their drinking before it becomes a serious concern. This highlights the need for a more proactive and accessible solution.

In Australia, alcohol consumption among young people remains a growing concern, with many exceeding safe drinking limits (Australian Bureau of Statistics, 2023). This puts them at risk of long-term health problems, including addiction and mental health struggles. Despite the risks, many young adults don't have the right tools to help them track their drinking and make healthier choices.

That's where DrinkWise comes in. This mobile app empowers young adults by allowing them to track their drinking habits, set personal weekly goals, and receive reminders to stay on course. Unlike traditional approaches that only focus on limiting alcohol intake, DrinkWise also provides personalised recommendations for healthier, alcohol-free activities that align with the user's interests. By offering real-time feedback and positive reinforcement, the app helps users gradually build better drinking habits without feeling restricted.

Research shows that digital platforms can be a powerful tool for encouraging healthier behaviours (Palmer et al., 2024). DrinkWise applies this concept by making it easy and engaging for users to monitor their drinking patterns while providing real-time intervention strategies. With features that promote self-awareness and positive habit formation, the app has the potential to make a real impact by helping young adults take control of their drinking and lead healthier, more balanced lives.

3.3 Design and Implementation

This subsection explains the software design and implementations of the frontend in detail.

3.3.1 Discover Page Frontend Design

The discover page serves as a vital feature within the DrinkWise application, aiming to support users in reducing alcohol consumption by offering personalised, healthier activity suggestions. This page is designed to present a curated list of alternatives tailored to user preferences, thereby encouraging more mindful lifestyle choices. The frontend interface will incorporate a recommendation list and category filter buttons at the top of the page, allowing users to explore activities by interest efficiently. Each recommended activity will display key information, including its name, image, category, and hours of operation. The proposed frontend design for this page is presented in Figure 3.2.

Figure 3.2 Discover Page Frontend Design Plan

3.3.2 Alternative Activity Details Page Frontend Design

Users can access complete details about recommended activities through the alternative activity details page, which helps them easily choose activities. The detailed view becomes available when users choose an activity from the discover page.

The frontend layout will feature a large header image of the activity, followed by the activity's name, category, address, operating hours, and contact number. Below this basic information, there will be an about section that briefly describes the activity, giving users additional context. Users can easily store location information through the conveniently placed "Copy Address" button, which will be located at the bottom of the page.

The design will prioritise simplicity, accessibility, and user-friendliness, ensuring that all important information is visible without excessive scrolling. The button located at the top left of the page will allow users to easily revert to the previous screen.

The frontend design plan for the alternative activity details page is shown in Figure 3.3.

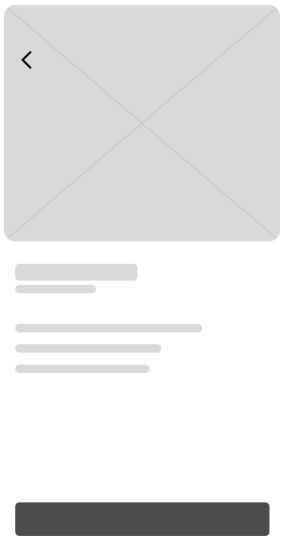

Figure 3.3 Alternative Activity Detail Page Frontend Design Plan

3.3.3 Frontend Implementation

React Native will be the framework used by the author to create DrinkWise's frontend, utilising JavaScript as the programming language. The author will use NativeWind for the styling, as it offers a simple and effective way to design the user interface.

3.3.3.1 Frontend Development

The frontend development of the Discover page in the DrinkWise application will play a critical role in guiding users toward healthier lifestyle choices. Built using the **discover.js** component, this page will deliver personalised recommendations for alternative activities based on the user's interests, helping to reduce alcohol consumption. The interface will allow users to filter activities by category and explore detailed information about each suggestion, including the name, image, category, and operating hours. The intuitive layout will promote user engagement and support more mindful decision-making.

CHAPTER 4
RESULT AND EXPLANATION

4.1 Research Result

In this section, the writer will explain the results of the frontend development of the DrinkWise application, specifically focusing on the discover page and the activity detail page. The goal of this implementation is to support young adults in discovering healthier activities that can serve as alternatives to alcohol consumption. The following sections outline the features implemented and show how they work in the user interface of the mobile application.

4.1.1 Discover Page

The discover page is the core component that introduces users to a variety of healthier activity alternatives. This page displays a list of suggested activities in a scrollable view, where each activity is presented in the form of an interactive card. The card includes key information such as the activity's name, category, image, and operational hours. To enhance user experience, filter buttons are placed at the top of the page, allowing users to narrow down the list based on their interests (e.g., Sports, Gaming, Board Games).

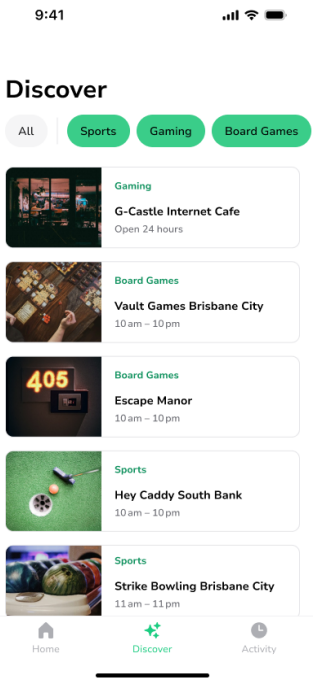

Figure 4.1 Discover Page

The layout is designed to be responsive and visually appealing. When a user taps on an activity, they are navigated to the activity detail page, which provides more context about the selected option.

4.1.2 Activity Detail Page

The activity detail page displays detailed information about the selected activity. The top section features a large image banner, followed by the name of the activity, category, full address, operating hours, and contact number. Below this, an "About" section provides a brief description of the activity to give users further insight.

Additionally, the page includes a “Copy Address” button at the bottom, allowing users to quickly copy the location for navigation or sharing purposes. A back button is also placed at the top-left corner, enabling users to return to the discover page easily.

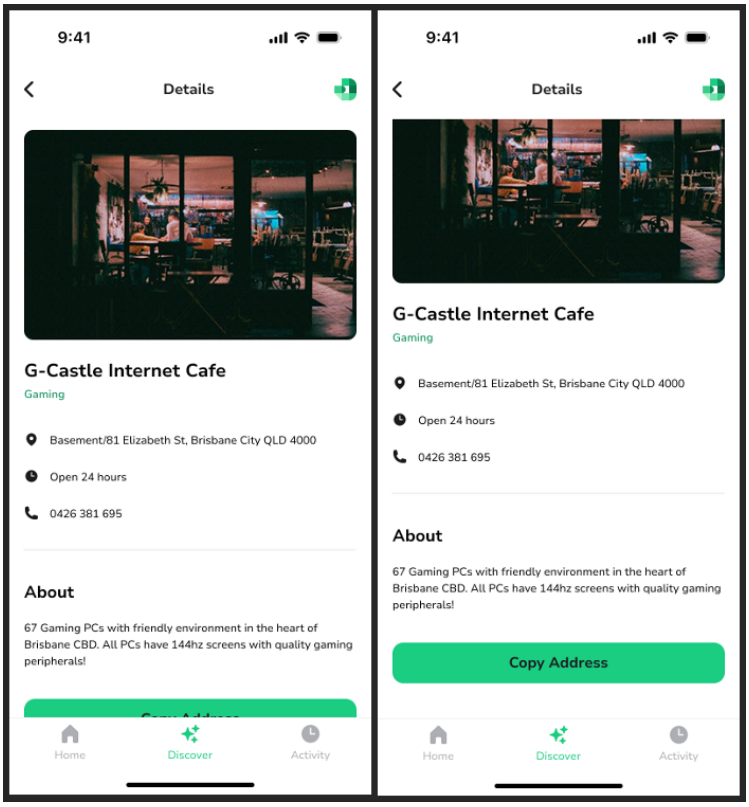

Figure 4.2 Activity Detail Page

This structure ensures that users can make informed decisions about engaging in healthier activities without experiencing interface fatigue or confusion.

4.2 Research Explanation

This section explains the reasoning behind the frontend design choices, the technologies used, and the overall implementation process. It also discusses how the design aligns with the project’s objectives, how usability was tested, and what insights were gained. The goal is to show how the frontend components were built to be user-friendly, accessible, and supportive of behaviour change in young adults.

4.2.1 Design Decisions

The frontend interface was designed to be minimal, intuitive, and user-friendly for mobile users aged 18-24. The layout prioritises accessibility and clarity, with the use of large, high-quality images, readable fonts, and consistent spacing. Category filters were placed prominently at the top of the discover page to improve discoverability and allow users to quickly narrow their choices. Each activity card is designed to give users enough context immediately without needing to click through every option.

On the detail page, the structure follows a logical top-down flow, starting from visual identification (image), followed by key information (location, time, contact), and ending with a contextual description and a copy address feature.

4.2.2 Technology Stack

The frontend of the DrinkWise application was developed using a combination of modern, mobile-friendly technologies. React Native with Expo was used to support cross-platform mobile development for both Android and iOS, enabling faster prototyping and deployment. For styling, the project adopted Nativewind, a utility-first framework inspired by Tailwind CSS that allows developers to apply consistent and responsive styles directly through class names. Additionally, @reat-navigation/native was implemented to handle screen transitions, allowing seamless navigation between the discover and activity detail pages. These technologies were selected for their developer efficiency, flexibility, and strong support for rapid design iterations, which were essential for delivering a polished and user-friendly interface within a limited development timeline.

4.2.3 Filtering Mechanism

The filtering mechanism on the discover page allows users to sort activities based on categories. While the filtering is currently static and based on pre-defined labels, it simulates a level of personalisation that can be expanded upon in future versions.

```
  const handleCategoryButtonPress = async (category) => {
    setSelectedCategories(category);

    if (category === 'All') {
      const allEventsPromises = categories.map(cat =>
getEventsByCategoryId(cat.id));
      const allEventsResponses = await
Promise.all(allEventsPromises);
      const allEvents = allEventsResponses.flatMap(response =>
response.data);
      setEvents(allEvents);
    } else {
      const selectedCategory = categories.find(cat => cat.name ===
category);
      if (selectedCategory) {
        const eventsResponse = await
getEventsByCategoryId(selectedCategory.id);
        if (eventsResponse && eventsResponse.data) {
          setEvents(eventsResponse.data); // Set filtered events
        }
      }
    }
  };
```

Source Code 4.1 Category Filtering Process

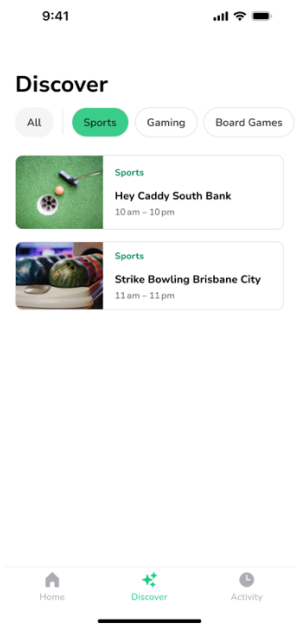

Figure 4.3 Filtered Activity Card View

4.2.4 Testing and Feedback

To evaluate usability, informal testing was conducted with a small group of young adults. They were asked to interact with both pages and provide feedback regarding layout, navigation, and visual clarity. The results were positive, participants found the app easy to navigate, visually appealing, and appreciated the category filtering feature.

Minor adjustments were made based on their feedback, such as improving padding around buttons and increasing font sizes for better readability.

4.2.5 Reflection and Relevance

The final implementation of the discover and activity detail pages aligns with the research purpose: providing a user-friendly interface to help young adults explore healthier alternatives to drinking. Through well-structured layouts, intuitive navigation, and simple filtering, the app promotes exploration and awareness.

This project also contributes to the broader goal of digital intervention in public health, demonstrating how design-focused frontend development can play a role in promoting positive behaviour change.

CHAPTER 5
CONCLUSION AND SUGGESTION

5.1 Conclusion

This final project has successfully achieved its objective of designing and implementing the discover page and the activity detail page within the frontend of the DrinkWise mobile application. These components are specifically developed to help young adults aged 18-24 explore healthier alternatives to alcohol consumption through a clear, engaging, and user-friendly interface.

The discover page presents a scrollable list of recommended alcohol-free activities, which users can filter based on categories that they're interested in, such as sports, gaming, and board games. Each recommendation card includes a title, image, category label, and operational hours, making it easy for users to quickly browse through options. The activity detail page provides more in-depth information about a selected activity, including a detailed description, address, contact number, and an interactive "Copy Address" button to support real-life engagement.

Using tools such as React Native, Expo, and Nativewind, the frontend was built with responsiveness, accessibility, and visual clarity in mind. Informal user testing indicated that users found the app intuitive, visually appealing, and effective in helping them explore meaningful alternatives to drinking.

This project demonstrates the important role that frontend design plays in supporting behaviour change. Through effective layout, intuitive navigation, and personalised content delivery, the interface contributes to the app's broader public health mission of reducing harmful alcohol consumption among young adults.

5.2 Suggestions

While the frontend components of the DrinkWise application have been successfully implemented, several improvements can be considered to enhance user experience and usability. One suggestion is the addition of more interactive features within the discover and activity detail pages. For instance, incorporating elements such as bookmarking favourite activities or marking activities as "visited" could improve user engagement and encourage ongoing exploration of healthy alternatives.

Another recommendation is to further enhance the interface's accessibility. Future development could include features such as dark mode, larger text size options, or screen reader compatibility to ensure that the app is usable by a wider range of users, including those with specific accessibility needs.

Additionally, although the current interface was tested informally with a small group of users, broader user testing with a more diverse demographic would provide valuable insights. This would help identify potential usability issues and inform further design refinements, ensuring that the interface continues to meet the needs and preferences of its intended audience.

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APPENDIX

Appendix A: Use of Grammarly AI in Writing Support

During the process of writing this final project, the author used Grammarly, an AI powered writing assistant, to support grammar checking, sentence structure correction, and clarity improvement. Grammarly was used solely to assist in proofreading and refining the English used in the document. All content, ideas, and arguments presented in this report remain the original work of the author. The tool was not used to generate content but to enhance readability and academic writing quality.

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AUTHOR'S BIOGRAPHY

The author was born in Duri on 26 September 2003 and is the youngest of two siblings. The author has completed her formal education at TK Putih Melati, SD IT Mutiara, Iman Academy Southwest, SMP IT Mutiara, and SMA IT Mutiara. After graduating from high school in 2021, the author enrolled at Institut Teknologi Sepuluh Nopember (ITS) through the International Undergraduate Program (IUP) and was accepted into the Department of Informatics FTEIC – ITS, with student ID 5025211192. The author later joined the Double Degree Program with the University of Queensland and is registered with student ID 48783444.

During her time in the Department of Informatics, the author has been involved in several student committees, including UKM EXPO and Schematics ITS. The author also actively served as a committee member in the Himpunan Mahasiswa Teknik Informatika (HMTC) and worked as a Teaching Assistant. The author can be contacted via email at khairiya.putri72@gmail.com.