Alarm Clock App

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Final Project Report

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1 Summary/Abstract

The Mobile Alarm Clock Application created by the team is meant to produce a different experience than users are accustomed to for an alarm clock. As mentioned by a post-doctoral fellow at UC Berkeley, a term referred to as sleep inertia explains the reason extended time required for an individual to switch to an awakened state. While users are still transitioning, to an awakened state normal alarms are disabled before the user is able to fully awaken. With this in mind, the application adds a new form of interaction that requires users to be more conscious before disabling the alarm clock. This feature is designed to ensure the user is able to wake up on time while beginning the new day already mentally prepared. While implementing many new features, the Alarm Clock aims to maintain a user-friendly alarm clock while allowing for additional resources a user may want to view at the beginning of their day.

2 Introduction

The main goal of the application is to provide users with a new experience when beginning their day. The application, with the development of its interactive features, aims to remove the inconveniences of a user's morning. Beginning with the problem of sleeping through their alarm, the application allows users an exciting way to begin their morning routine. The application also provides user’s with multiple types of information that are commonly sought out as a morning routine. Whether the user wants to view the Weather, read up on the news, or set a reminder for future events the application allows for these options within one application.

3 App description

The application at this current time utilizes a bottom navigation menu to navigate through four main features. These features consist of an Alarm Clock, Weather Viewer, Calendar, and News Viewer.

The Alarm Clock feature is designed to prompt the user to select the desired time, with the option to set the alarm as recurring. Upon creating the alarm, the user’s alarm is saved to a database that holds the user’s alarm information. This feature extracts the information from the database to allow the user to view a list of those created. Additional functionality includes the user’s ability to deactivate alarms not in use.

The Weather feature has a simplified user interface that prompts the user to press a button. When the button is pressed, the application will generate a set of data pulled from a weather API. One of the most important pieces of information able to be viewed

by the user includes the temperature of their surrounding area in celsius. Other information displayed on weather features includes an estimated time for sunrise and sunset, wind speed, pressure, along with humidity. This information is extracted from the weather API implemented by the team.

The Calendar feature allows users to interact with a visual calendar. This visual calendar displays the current date in real-time. Upon clicking on a different date, users will be redirected to an event creator. This event creator allows users to save important events on the calendar as a reminder. Once the user has created a reminder, their information is kept in a database. When the user chooses to view their list of reminders, they can do so by clicking on an additional button that showcases all of their Schedules events.

Finally, the News feature of the application will display recent news article information into a list for the user to select from. These new articles are called from a News API that contains up-to-date information on recent headlines. Through the application, the news feature displays a short description of each news article. Upon the articles being pressed, users will be directed to the news article where they are able to the containing information.

4 Discussion

The team has encountered different challenges throughout the development of the application. The main challenge the team encountered was the development of the Weather API. The team noticed the inaccuracy of the data retrieved from the API based on the location. As discussed during our team meeting the selected API contains a larger margin of error than the team had expected. As the team is limited on time, the team is still currently utilizing the same Weather API. Other challenges within this feature include the exception of multiple locations. At this point in time, the system only retrieves the information given a specific location instead of prompting users to allow the application to retrieve their current location.

5 Limitations

With the current development of the project, there are a few tasks that are unfinished. Due to the limited time, the team’s priorities have shifted to ensuring the basic functionalities for each main feature.

Beginning with the alarm clock, the team has not yet implemented an interactive way to disable the alarm clock. As a result, the alarm clock functions as would a default alarm

system. Although the team has proposed this feature, the team has not yet been able to create this design at this current time.

Other unfinished tasks are directly related to the Weather API. To specify, it can only display the temperature of one location. This location also has a larger margin of error when displaying the temperature. The API displays a minimum and maximum for the temperature which varies by a large amount. Other tasks yet to be completed, include a unit conversion from Celsius to Fahrenheit, and a button redirecting users to the main weather page for additional information.

The Calendar feature of the application also has tasks that are unfinished. These tasks include adding additional fields when creating an event reminder. These fields include event start, event end, and event type that the user might want to specify. Other additions to this feature can possibly be notifications when created events are a few days away.

Finally for the news additional tasks that have yet to be completed include authorization to redirect users to the main news article. At the current state, when a user clicks on an application they are immediately sent to the news article without the approval of the user.

6 Conclusion

Beginning with the conceptual design of the application, the team has envisioned a multi-feature alarm clock capable of separating itself from other competition. In order to make the application stand out, the team began by creating multiple mockups detailing the creation of multiple features easy for users to navigate through. Throughout the development of the project, the team has implemented a number of features. These main features include the Alarm Clock, Weather, Calendar, and News. With these features, the team's focus was to allow for the user's basic functionality of these features. If given more time, the team's next step would be towards distinguishing the design of the User Interface and the interactivity of the alarm clock. Although they were unable to perfect the application. the team accomplished basic functionality without sacrificing the simplistic style envisioned during the beginning of development. Moving forward, there are many other features that the team will be able to implement in the future. As a result of the project, the team has developed the skills and experience needed to create and modify future mobile applications.

7 References

Research for Alarm Clock

https://www.inverse.com/article/50128-how-long-does-it-take-to-wake-up-the-brain

Firebase Database setup

https://firebase.google.com/docs/firestore

News API

https://newsapi.org/

Weather API

https://api.openweathermap.org/data/2.5/weather?q=$CITY&units=metric&appid=$API

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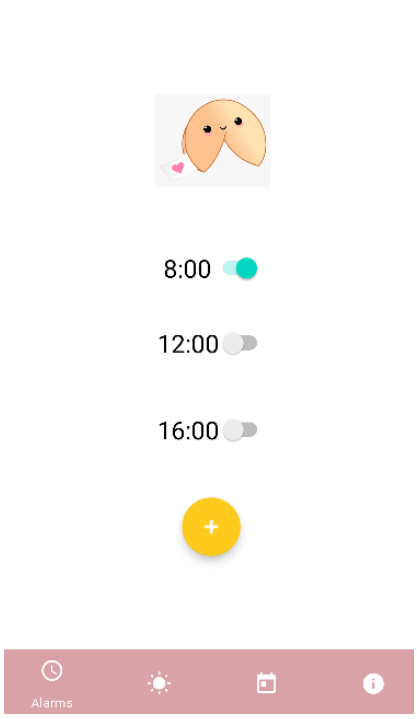
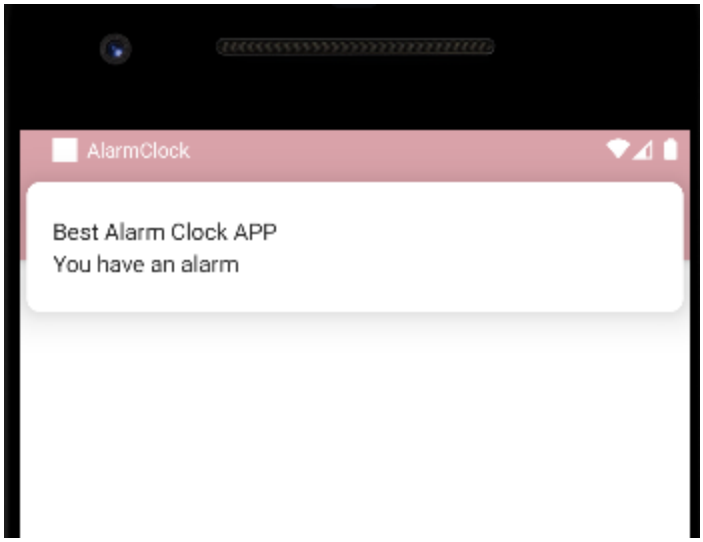
8 Appendix

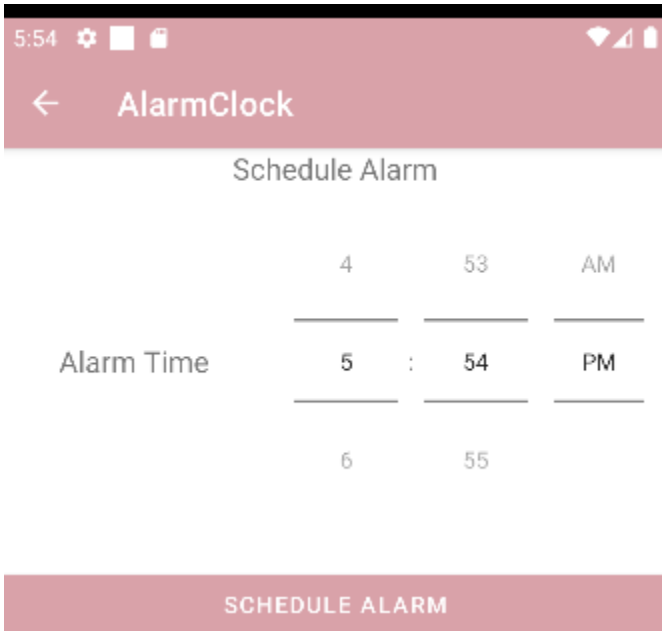
Alarm Clock

- View List of Alarms



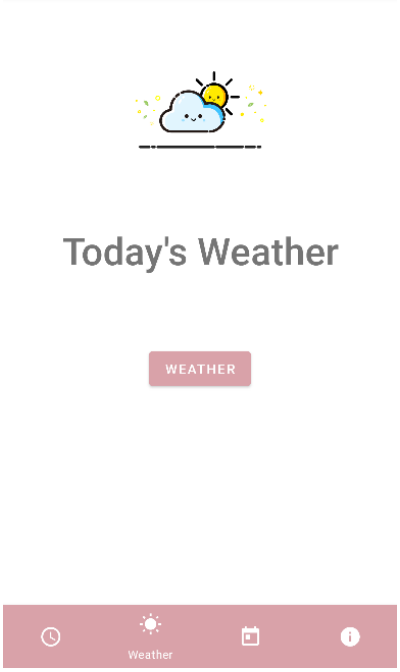
- Alarm Scheduler



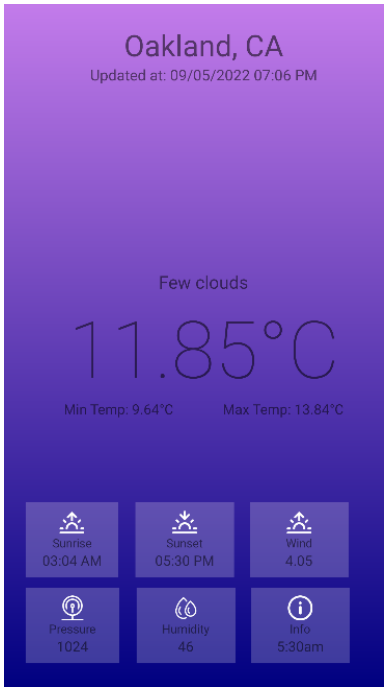


Weather

- Display Weather API Call

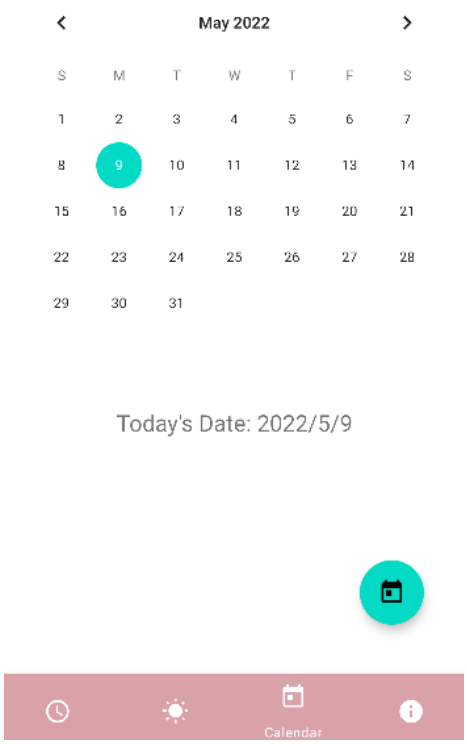


- Weather Information based on Location

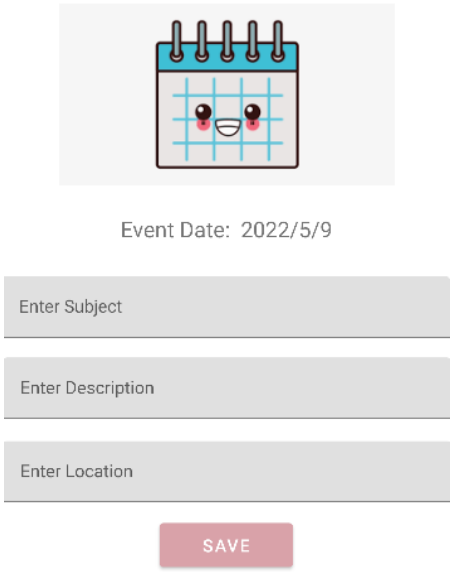


Calendar

- Calendar View

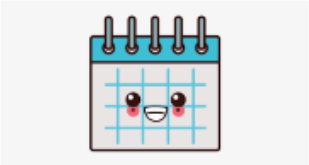


- Create Event Reminder



- View List of Event Reminders

List Of Scheduled Events



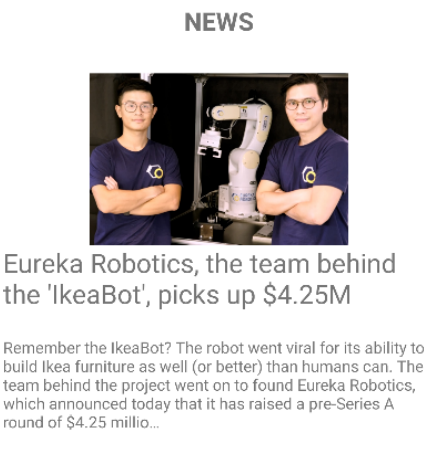
2022/5/12
Capstone Convention
Suit and Tie
Engineering Pavilion

2022/4/26
Test
Final Test
CSUSM

2022/6/9
Final Presentation
Prepare Slides
MVHS

News

- News Viewer



- Showcasing Scrollable View of multiple new sources

NEWS

...eam behind the project went on to found Eureka Robotics, which announced today that it has raised a pre-Series A round of $4.25 millio...

Match Group sues Google over monopoly power' in Android app payments

The parent company of dating apps Tinder, Match and OkCupid is suing Google, alleging that the company exerts too much control over payments through its Google Play...