

Final Presentation

Sixyoungpeople

Ryan Goldberg, Charlie Kincs, Soyeon Kwon,
Erik Johnson, Noah Gabler

User epics

As a user I would like to record sleep details such as hours of sleep, dreams/nightmares, quality of sleep, etc.

As a user I would like to see sleep history and graphs about sleep duration & cycles

As a user I would like to start a sleep diary to observe how my daily routine influences my sleep quality

Overview

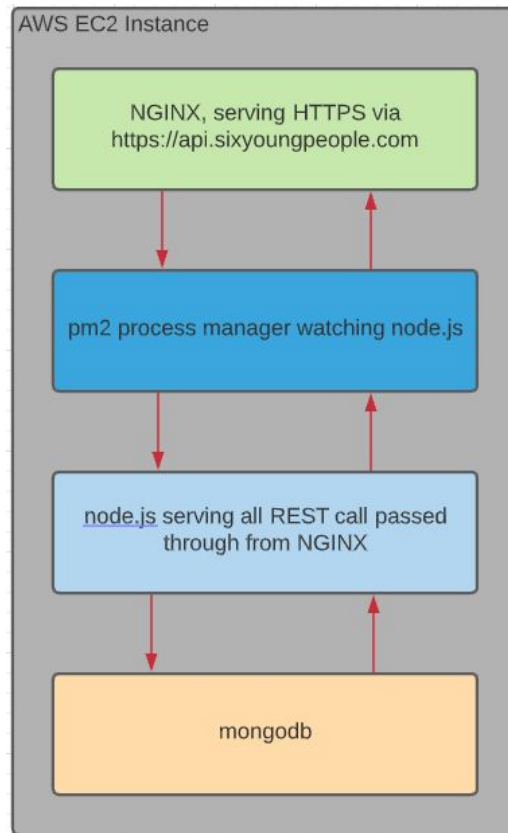
Completed user stories

A user flow: from sleep to wake up with an alarm

[Demo video link](#)

Ryan – Backend Infrastructure

Ryan set up MongoDB, Node and NGINX on an AWS EC2 instance in order to provide a REST interface over HTTPS.



Ryan – Statistics Code

Generic Chart Generator

- REST call to grab all sleepDetails Documents from Mongo
- Pass in the full List sleepDetails Documents from as well as which List of Attributes to graph
- First, iterate over each Document, and extract the Sleep Attribute specified in the call (Sleep Notes, or Sleep Details - can be extended to other attribute Lists)
- Then, iterate over those Lists, and add up the occurrence of each attribute into a Map
- Transform the Map to a List and send to the Bar Chart generator
- Generate a bar chart showing the tally of each attribute based on the Map passed

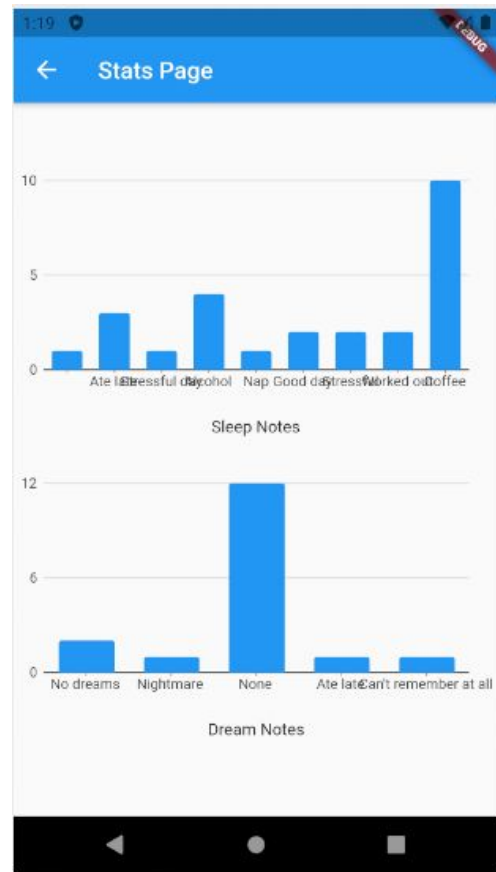
Ryan - Statistics Code

```
db.getCollection('sleepDetails').find({})
```

sleepDetails 0.033 sec.

Key	Value
(1) ObjectId("6184159c72352e9205227a07")	{ 7 fields }
_id	ObjectId("6184159c72352e9205227a07")
userID	test1
sleepTime	
wakeupTime	12.02.2021, 12:51 AM
sleepNotes	[1 element]
[0]	
dreamNotes	[1 element]
[0]	No dreams
sleepQuality	5.0
(2) ObjectId("6189f3623fb7509abb7c23f5")	{ 7 fields }
_id	ObjectId("6189f3623fb7509abb7c23f5")
userID	test1
sleepTime	11.08.2021, 11:00 PM
wakeupTime	11.09.2021, 08:00 AM
sleepNotes	[2 elements]
[0]	Ate late
[1]	Stressful day
dreamNotes	[1 element]
[0]	No dreams
sleepQuality	Good
(3) ObjectId("6189f3623fb7509abb7c23f6")	{ 7 fields }
(4) ObjectId("6195a46a78d1ab77599b0111")	{ 7 fields }
(5) ObjectId("619ce4bd01bd662fadcc3018")	{ 7 fields }
(6) ObjectId("61a68db01f7d94162a8cf356")	{ 7 fields }

Ryan – Statistics Code



Charlie

As a user, I would like to be able to see the amount of time I have slept each night.

Tasks

- Implemented the `calculate()` function, which takes in two times as strings and returns the amount of elapsed time as a string.
- The function works by
 1. Splitting the times at the ':' character
 2. Parsing them into `DateTime` objects
 3. Calculating the difference between the objects
 4. Extracting and returning the hours and minutes from the `DateTime` object


```
String calculate(String sleeptime, String sleepTimeType, String waketime, String wakeTimeType){

    List<String> sleepTimeStrs = sleeptime.split(":");

    List<String> wakeTimeStrs = waketime.split(":");

    if (sleepTimeStrs[0].length == 1)
        sleepTimeStrs[0] = "0" + sleepTimeStrs[0];

    if (wakeTimeStrs[0].length == 1)
        wakeTimeStrs[0] = "0" + wakeTimeStrs[0];

    String day = "22";

    if (sleepTimeType == "PM") {
        int sleepInt = int.parse(sleepTimeStrs[0]) + 12;
        sleepTimeStrs[0] = sleepInt.toString();
    } else if (sleepTimeType == "AM")
        day = "23";

    if (wakeTimeType == "PM") {
        int wakeInt = int.parse(wakeTimeStrs[0]) + 12;
        wakeTimeStrs[0] = wakeInt.toString();
    }

    var sleepTime = DateTime.parse("2021-05-" + day + " " + sleepTimeStrs[0] + ":" + sleepTimeStrs[1]);

    var wakeTime = DateTime.parse("2021-05-23 " + wakeTimeStrs[0] + ":" + wakeTimeStrs[1]);

    var elapsed = wakeTime.difference(sleepTime);

    int minutes = elapsed.inMinutes % 60;

    int hours = (elapsed.inMinutes / 60).truncate();

    return hours.toString() + ' hours and ' + minutes.toString() + " mins";

}
```

← The code for calculate()

Charlie

As a user, I would like to be able to see statistics related to sleep

Tasks

- Implemented the stats_calculations object, which calculates a variety of sleep statistics over time
- Given a list of data, the object can calculate:
 - Mean sleep time
 - Median sleep time
 - Maximum (highest) sleep night
 - Minimum (lowest) sleep night

```

class stats_calculations {

    List<int> data = [];

    stats_calculations(List<int> data) {
        this.data = List.from(data);
    }

    void setData(List<int> data) {
        this.data = List.from(data);
    }

    double mean() {
        var sum = 0.0;
        for (var x in data) {
            sum += x;
        }
        return sum / data.length;
    }

    int median() {
        List temp = List.from(data);

        temp.sort();

        return temp.length.isOdd ? temp[(temp.length / 2).truncate()]
            : (temp[((temp.length-1)/2).truncate()] + temp[(temp.length/2).truncate()])/2.0;
    }

    int maximum() {
        return data.reduce(max);
    }

    int minimum() {
        return data.reduce(min);
    }
}

```

← The code for
stats_calculations

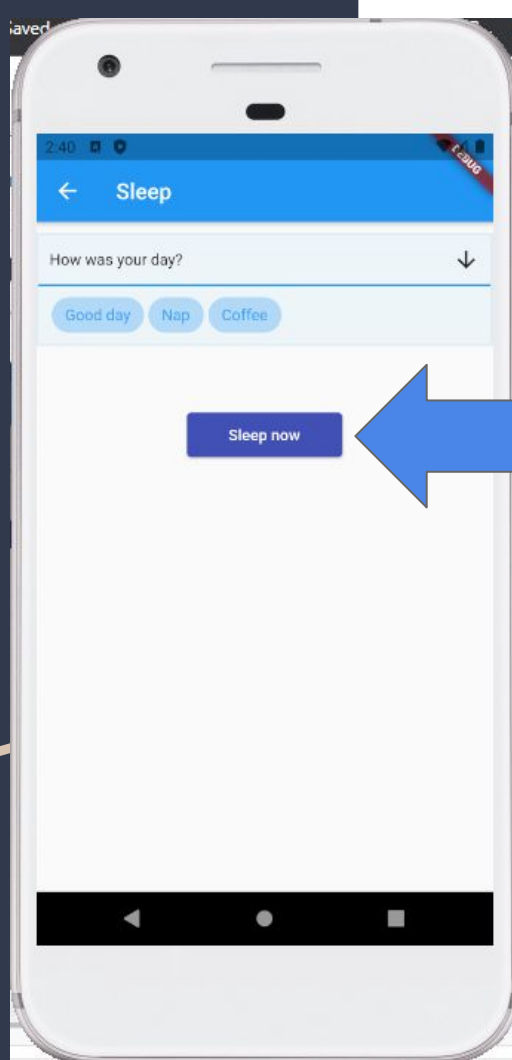
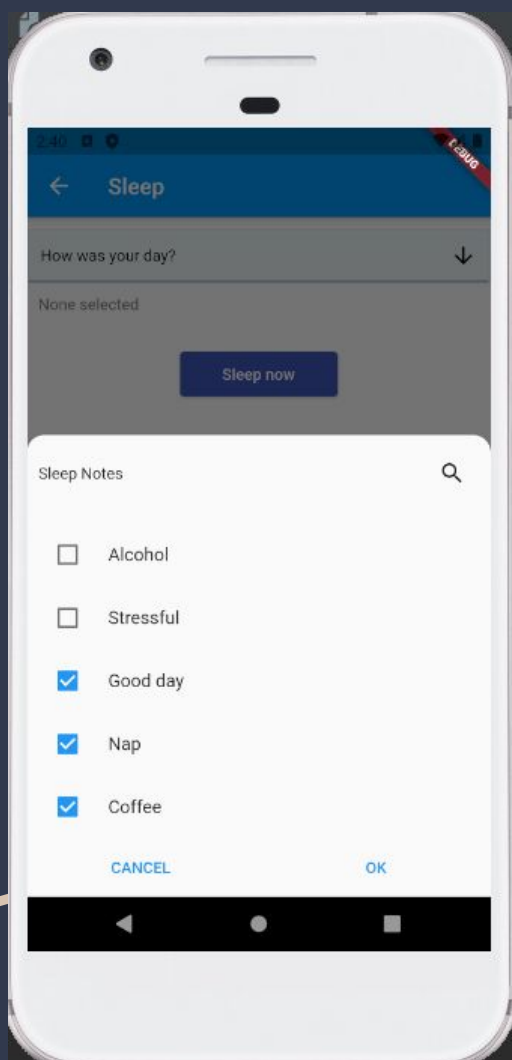
Soyeon

User stories:

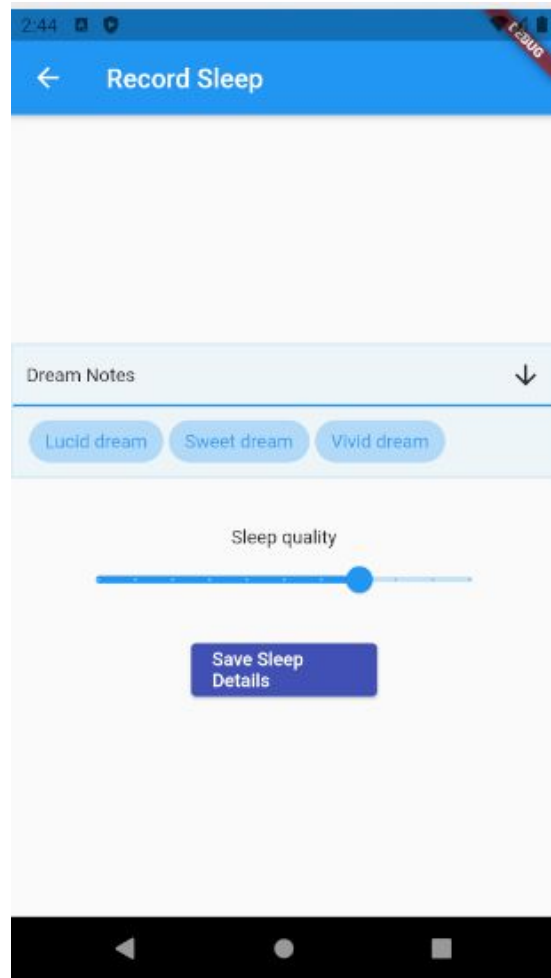
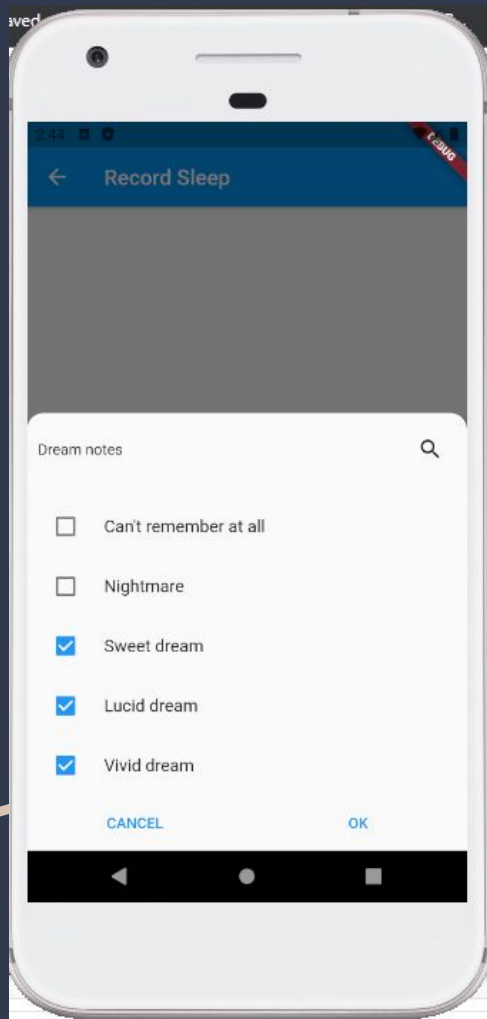
1. As a user, I would like to record sleep details such as sleep time, wake up time, sleep notes (daily routine), and dream notes (dreams/nightmares).

Tasks

- JavaScript functions to insert details in myDB.js and index.js
- Functions in api.dart
- Files for MVP structure
- Multiselectable widget



Record sleep time as a time stamp



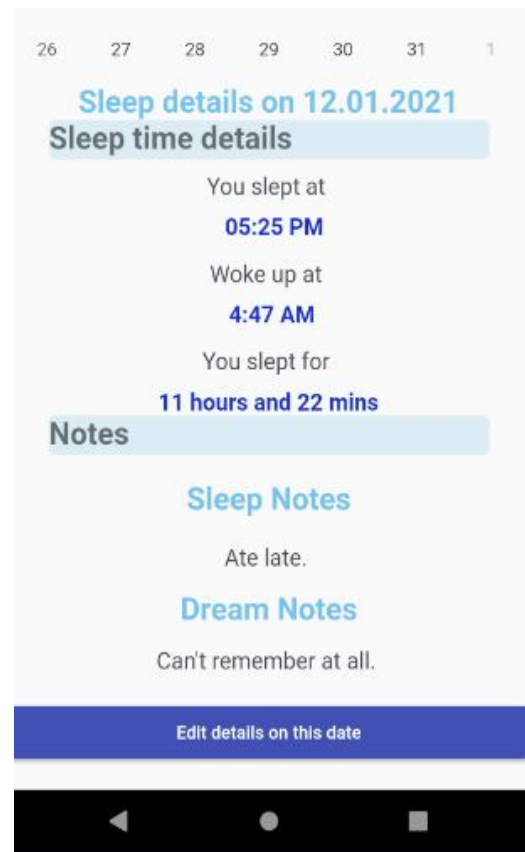
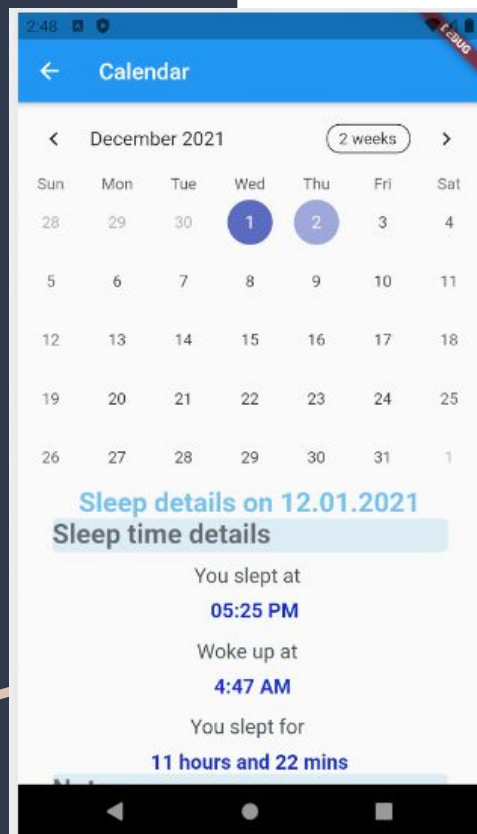
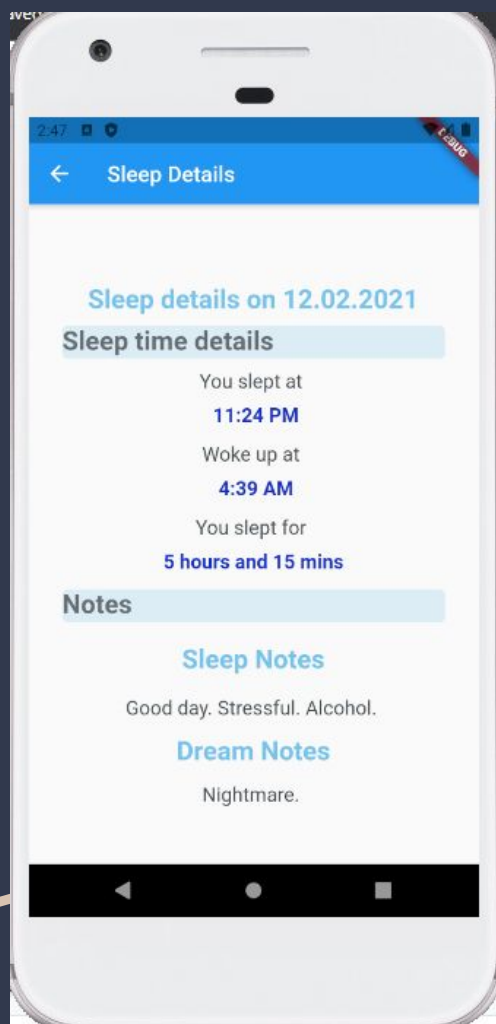
Soyeon

User stories:

2. As a user, I would like to see the latest and other sleep details.

Tasks

- JavaScript functions to search details (latest and on a certain date) in myDB.js and index.js
- A view that shows sleep details
- Calendar widget that a user can select a date to see



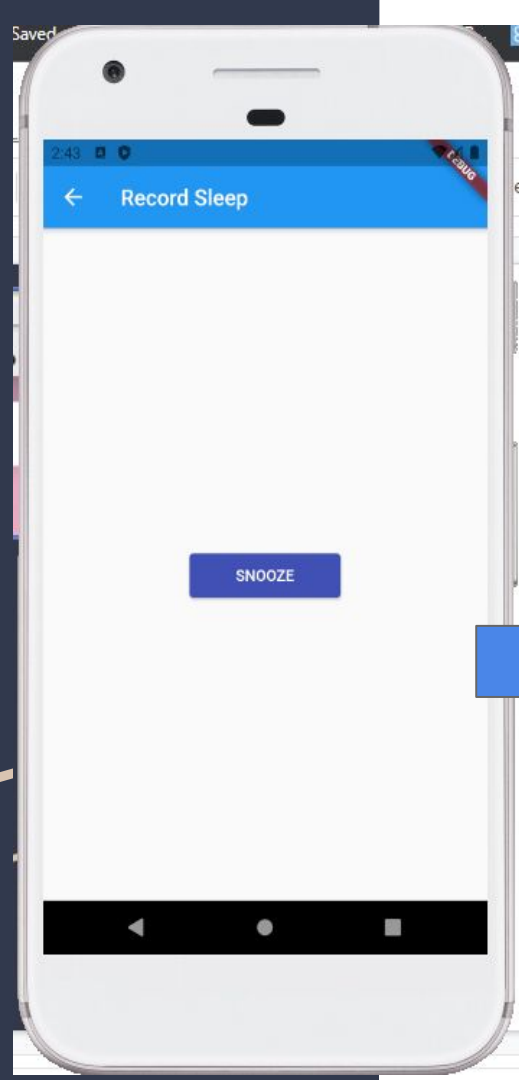
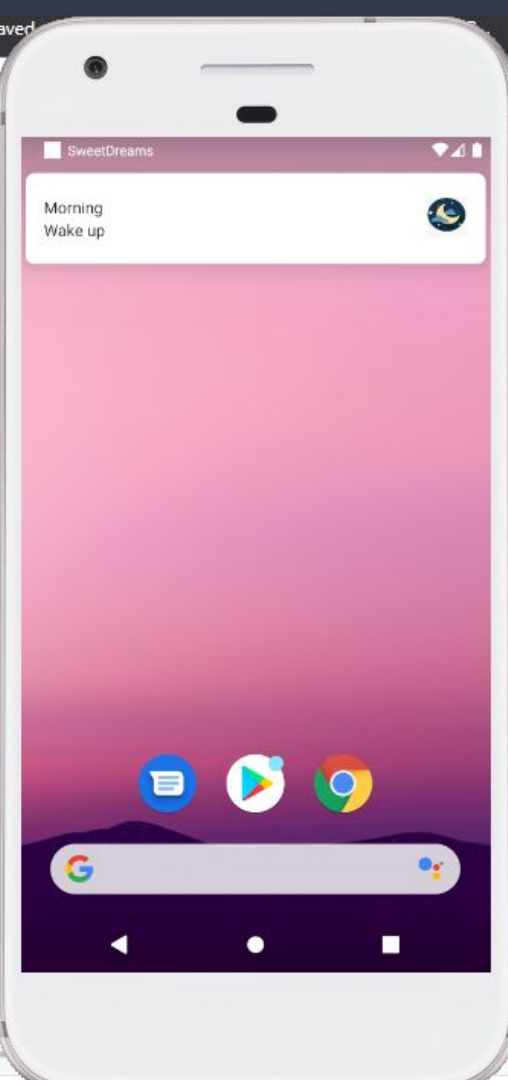
Soyeon

User stories:

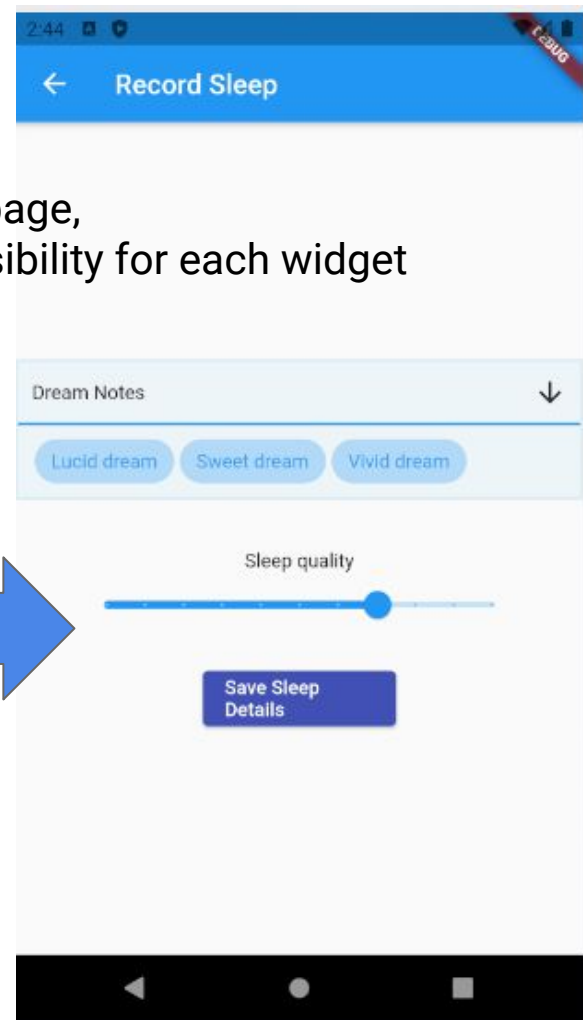
3. As a user, I would like to get a notification as an alarm

Tasks

- Receive a notification with sound that continues until the user opens the app again
- Change visibility of widgets that record dream notes and sleep quality as the user clicks "Snooze" button



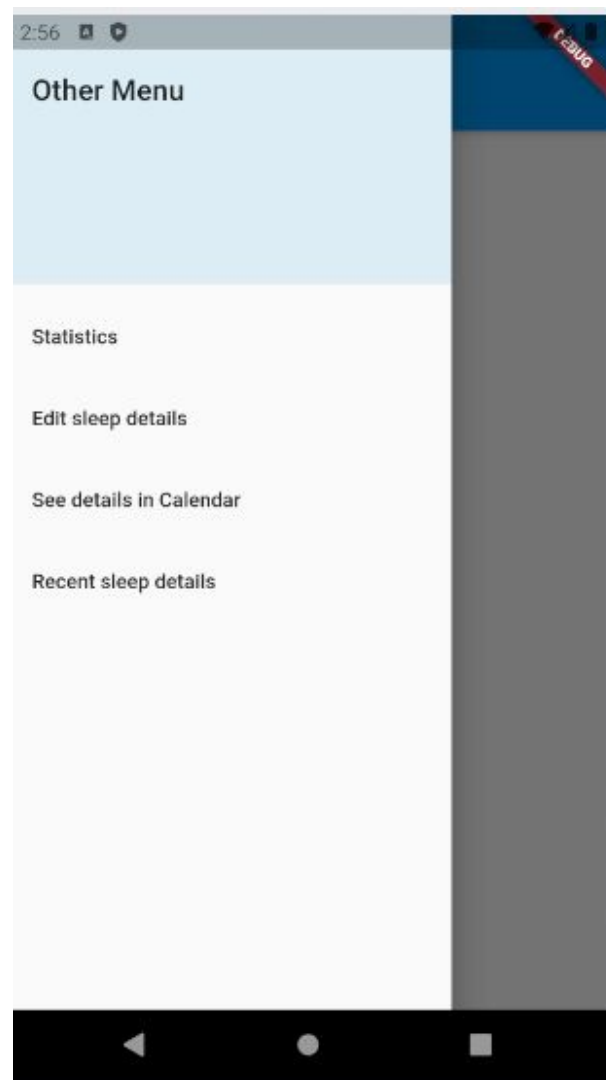
The same page,
different visibility for each widget



Soyeon

Other tasks

- JavaScript functions to update documents
- Organizing buttons on the main page by a hamburger button (drawer widget)



Noah

User Story: As a user I would like to record sleep details such as hours of sleep, dreams/nightmares, quality of sleep, etc.

Tasks:

- Use time pickers to select bedtime and wake up time
- Slider to select for sleep quality
- Can select sleep and dream notes
- On save button pressed, the info stored in each selector in the view is put into the proper format for the DB and used to call a json function that update the DB with this information

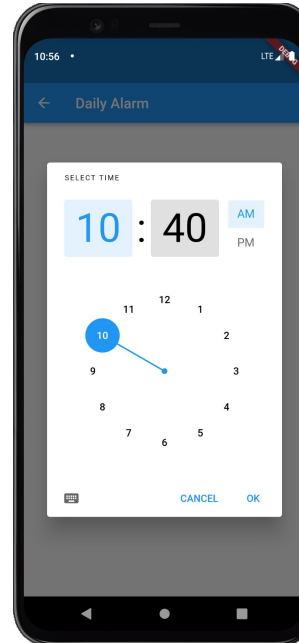
Erik

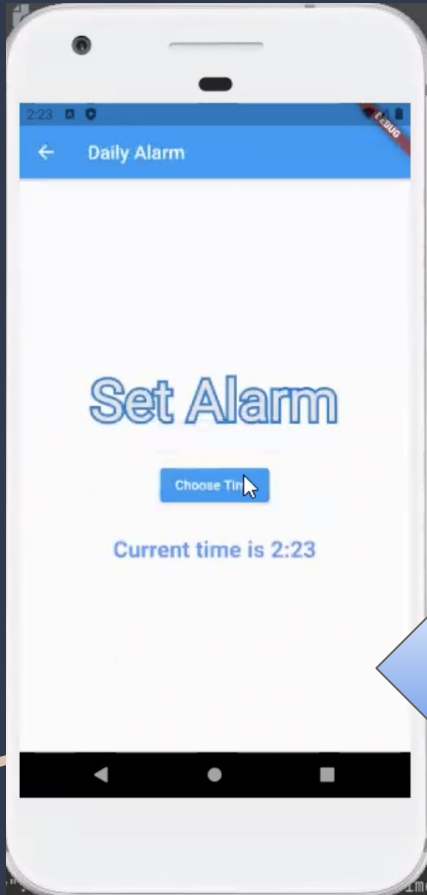
USER STORY:

As a user I would like to see the time of my alarm displayed after it is set

Tasks:

- Using TimePicker to get wanted alarm time
- Displaying alarm time to user





Display current Alarm time here

```
if(timeOfDay != null){
    selectedTime = timeOfDay;
    Padding(
        padding: EdgeInsets.only(top:30.0),
        child: Text(
            "Current Alarm: ${selectedTime.format(context)}"
        ) // Text
    ) // Padding
}
```