PROJECT REPORT FOR ANDROID DEVELOPMENT

A SLEEP TRACKING APP

- FOR A BETTER NIGHT'S REST

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1 INTRODUCTION

Overview

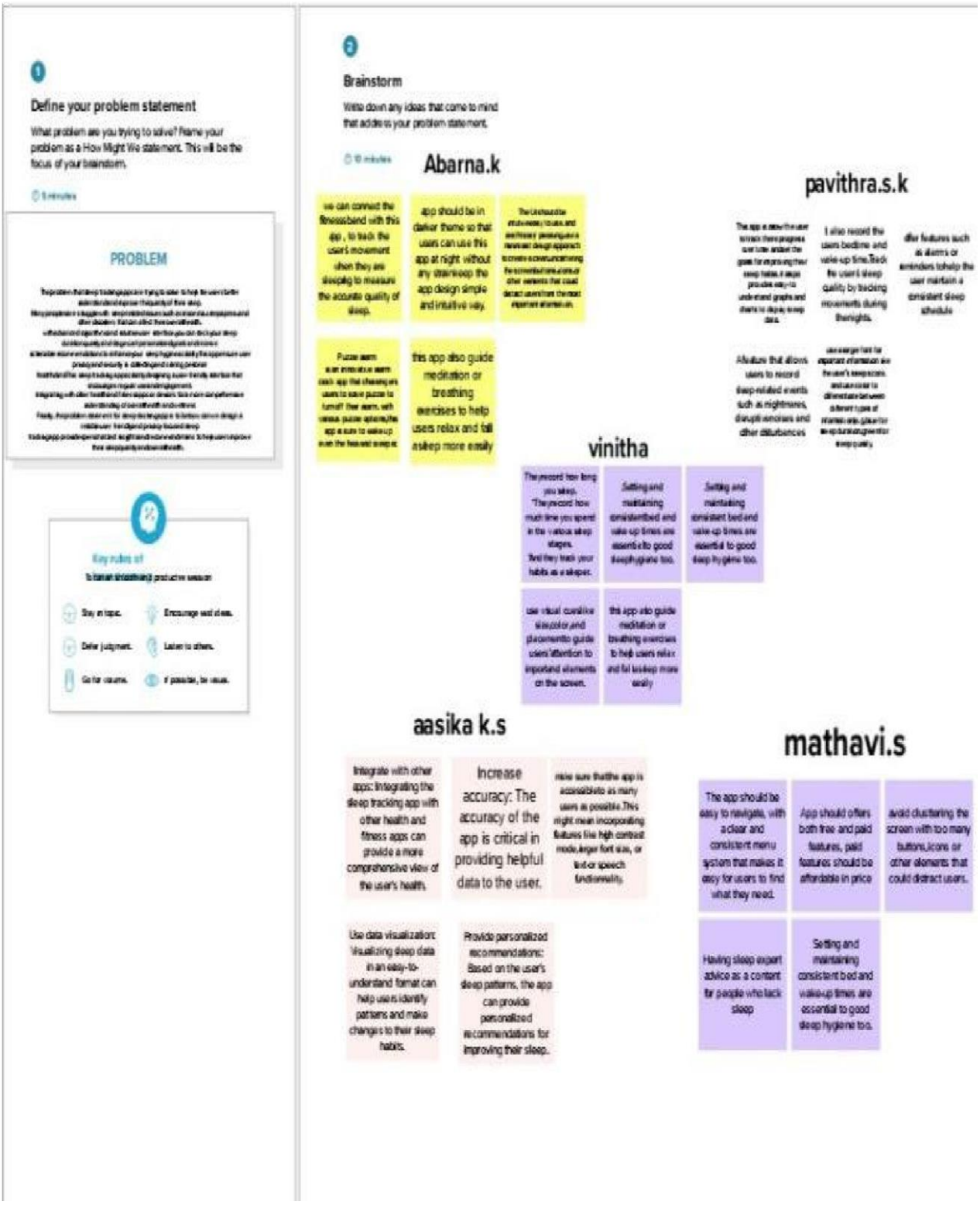
A project that demonstrates the use of Android Jetpack Compose to build a UI for a sleep tracking app. The app allows users to track their sleep. With the “Sleep Tracker” app, you can assess the quality of sleep they have had in a day. It has been time and again proven that a good quality sleep is pretty essential for effective functioning of both mind and body. "Sleep Tracker” application enables you to start the timer when they are in the bed and about to fall asleep. The timer will keep running in the background until it is stopped, whenever the user wakes up. Based on the sleep experience, you can rate your sleep quality. Finally , the app will display an analysis of the kind of sleep, you had the previous night "sleep Tracking". Sleep Tracking is a project aimed at developing a system for tracking and analysing sleep patterns. The project involves the use of various sensors and data collection devices to gather information about a person's sleep patterns, such as how long they sleep, the quality of their sleep, and any disruptions or disturbances that occur during the night. The data collected is then analysed using algorithms and machine learning techniques to provide insights into the person's sleep patterns and to identify any factors that may be affecting their sleep.

Purpose

Based on the title of your project "sleep Tracking," it is likely that the purpose of your project is to develop a system or application that can track and monitor an individual's sleep patterns. The main goal of this project is to provide insight into the quality and quantity of an individual's sleep, as well as to identify any potential issues or disorders that may be affecting their sleep. The use of this project can be significant as it can help people improve their sleep quality and overall health. By tracking sleep patterns, individuals can identify areas where they may need to make adjustments in their sleep habits or routines to get a better night's sleep. The data collected by the sleep tracking system can also be used by healthcare professionals to diagnose and treat sleep disorders such as sleep apnea or insomnia. Additionally, the sleep tracking system can be used to collect data for research purposes, which can help researchers gain a better understanding of sleep patterns and contribute to the development of new treatments for sleep-related disorder insomnia. Additionally, the sleep tracking system can be used to collect data for research purposes, which can help researchers gain a better understanding of sleep patterns and contribute to the development of new treatments for sleep-related disorders.

2 PROBLEM DEFINITION & DESIGN THINKING

2.1 EMPATHY MAP



2.2 Ideation & Brainstorming Map


UI
Tracking
use visual cues like size,color and placement to guide user's attention to important elements onthe screen.
avoid clustering the screen with too many buttons,icons or other elements that could distract users.
They record how long you sleep. *They record how much time you spend in the various sleep stages. *And they track your habits as a sleeper.
Integrate with other apps: Integrating the sleep tracking app with other health and fitness apps can provide a more comprehensive view of the user's health.
offers
app should be in dariver theme so that users can use this app at night without any strainkeep the app design simple and intuitive way.
The app should be easy to navigate, with a clear and consistent menu system that makes it easy for users to find what they need.
App should offers both free and paid features, paid features should be affordable in price
this app also guide meditation or breathing exercises to help users relax and fall asleep more easily
this app also guide meditation or breathing exercises to help users relax and fall asleep more easily
Features
sounds
other features such as alarms or reminders to help the user maintain a consistent sweep schedule
Setting and maintaining consistent bed and wake-up times are essential to good sweep hygienetips.
we can connect the fitness band with the app ,to track the user's movement when they are sweeping to measure theaccurate quality of sleep.
It also record the users bedtime and wake up time.Track the user's sleep quality by tracking movements during the nights.
They record how long you sleep. *They record how much time you spend in the various sleep stages. *And they track your habits as a sweeper.
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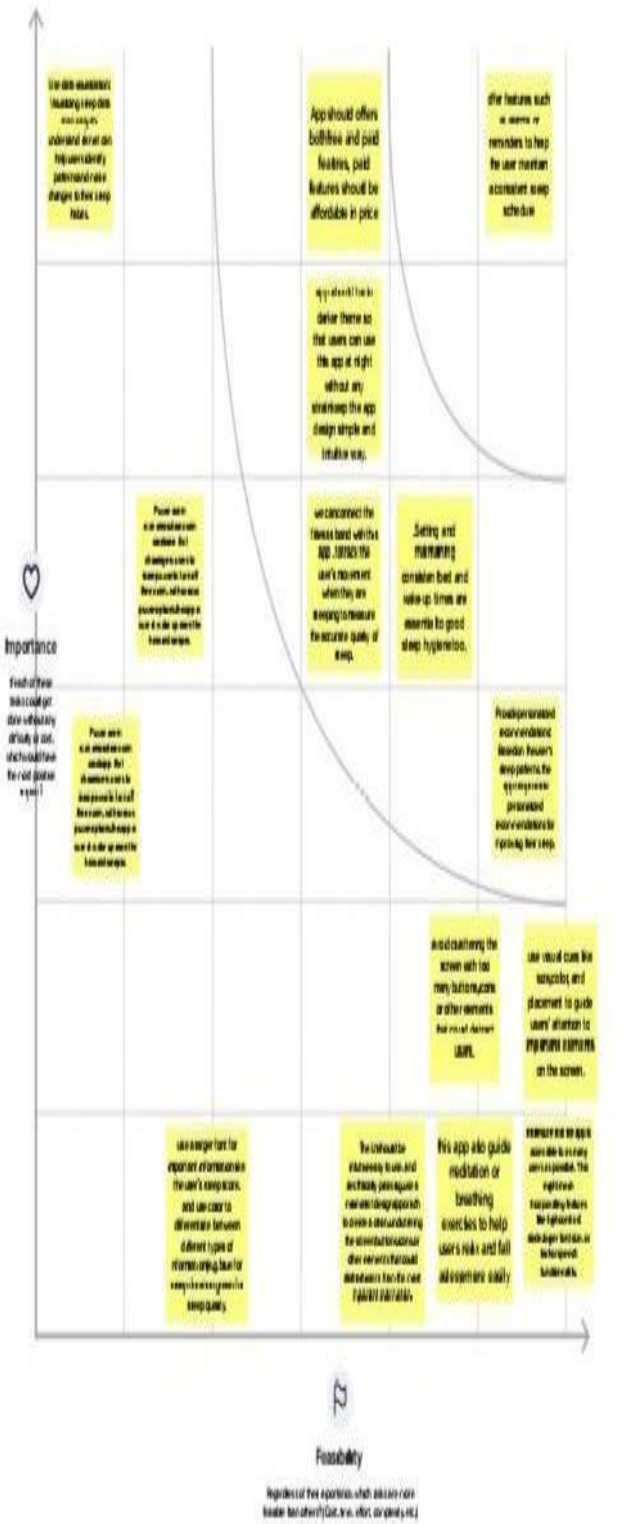
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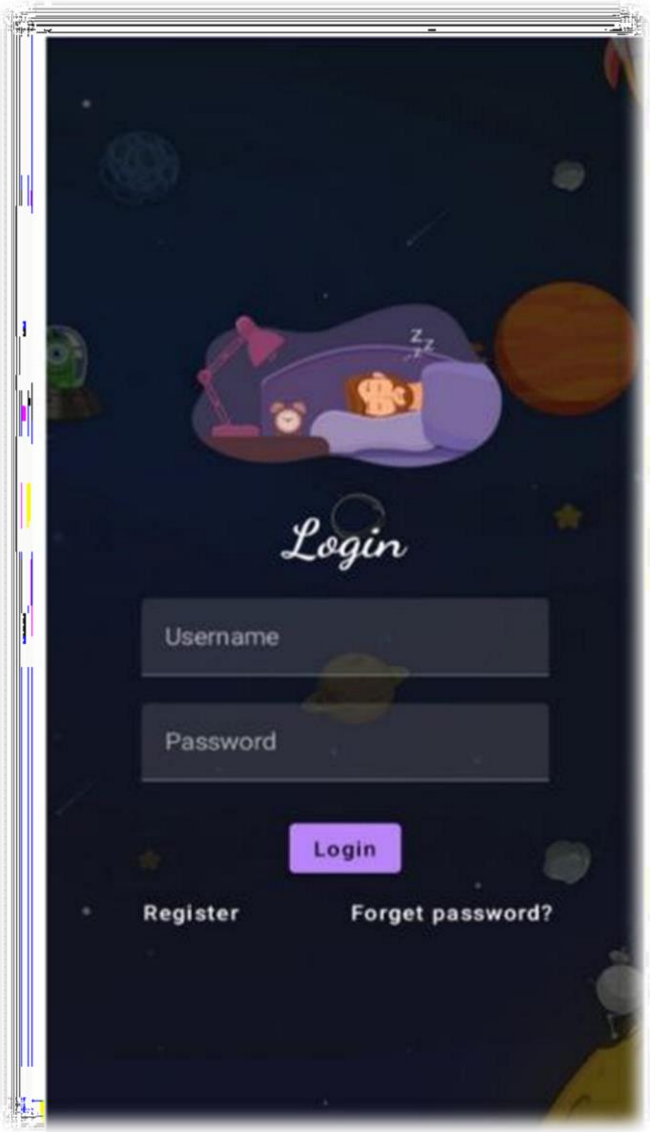
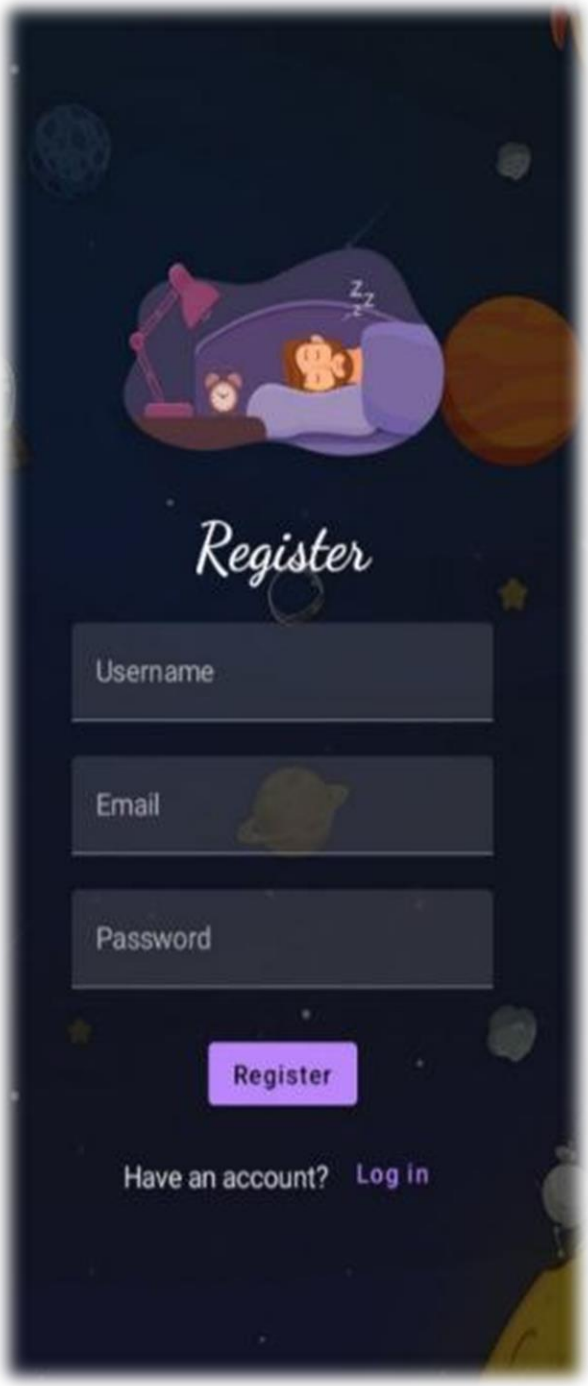
Setting and maintaining consistent bed and wake-up times are essentia for good sleep hygienetips.
Importance
Provideprsonalized interventations likeadon theuser's sleep patterns,the systemcanprovide personalized interventations for optimizing their sleep.
avoid cluttering the screen with too many buttons,icons or other elements that could distract users.
use visual cues like size,color and placement to guide users' attention to important elements on the screen.
use a larger font for important information like the user's sleep score, and use color to differentiate between different types of information,blue for sweepscoring,green for sleep quality.
this app also guide meditation or breathing exercises to help users relax and fall asleepmore easily
Feasibility

3 **RESULT**

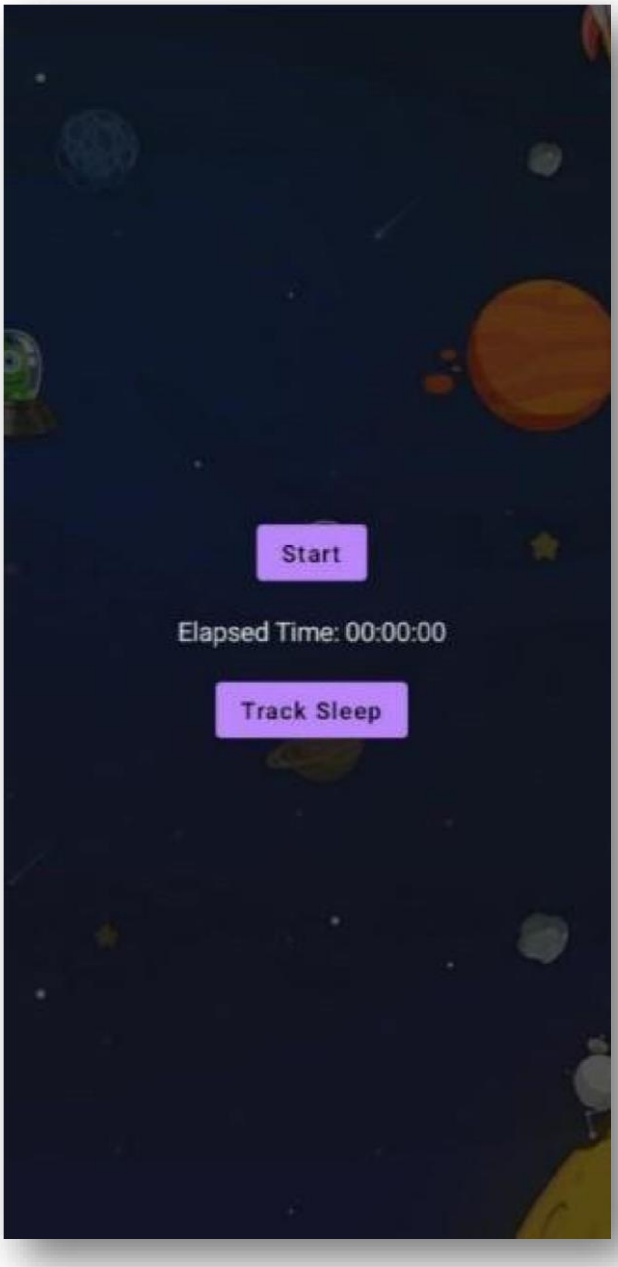
Final output of the application:



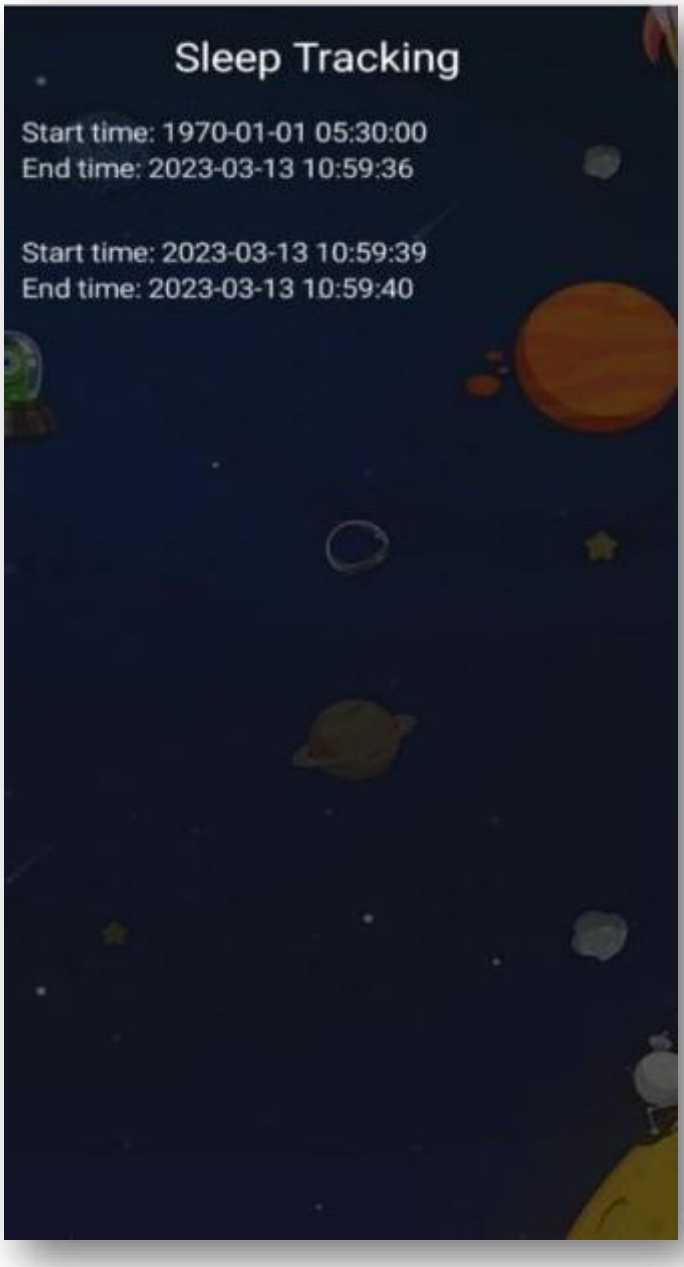
LOGIN PAGE



REGISTRATION PAGE



MAIN PAGE



TRACKSLEEP PAGE

4 ADVANTAGES & DISADVANTAGES

Advantages:

1.Measuring your sleep is the first step in sleep improvement

2.Tracking can help you identify which areas of sleep need improvement.

3.It can help you understand what kind of daytime behaviors most impact your nightly sleep

4.It can help you prioritize spending enough time in bed to get the sleep you need.

5.It can help you set and maintain a consistent sleep schedule.

6.Take your sleep tracking to the next level.

Disadvantage:

1.Sleep trackers introduce poor sleep hygiene. ...

2.Sleep trackers may be inaccurate. ...

3.Sleep trackers can worsen insomnia. …

4.Sleep trackers make some people resistant to treatment.

5.Sleep trackers are tied to a sleep disorder.

5 APPLICATIONS

*The **"sleep tracking"** project can have various applications in different fields such as healthcare, sports, and personal well-being. Here are a few potential applications for the project:*

***Healthcare:** In the healthcare industry, sleep tracking can be used to monitor patients with sleep disorders such as insomnia, sleep apnea, and restless leg syndrome. By analyzing the sleep patterns of patients, doctors can make better diagnoses and recommend appropriate treatments.*

***Sports:** Sleep tracking can be used by athletes and coaches to monitor the quality of their sleep and its impact on their performance. This information can be used to optimize training schedules, nutrition plans, and recovery strategies.*

***Personal well-being:** Sleep tracking can be used by individuals to monitor their own sleep patterns and improve their overall well-being. By understanding their sleep habits, people can make lifestyle changes such as adjusting their bedtime routine, improving sleep hygiene, and reducing stress.*

***Research:** Sleep tracking can be used by researchers to study the relationship between sleep and various health outcomes such as obesity, cardiovascular disease, and cognitive function. By collecting large amounts of data on sleep patterns, researchers can gain insights into the mechanisms underlying these health outcomes and develop new treatments and interventions.*

6 CONCLUSION

Enhanced Health and Well-being: *Good quality sleep is essential for overall health and well-being. By tracking their sleep with your app, users can identify patterns or behaviors that may be impacting their sleep negatively, such as irregular sleep schedules or environmental factors. Your app can provide recommendations to help users establish healthy sleep habits, leading to improved health and well-being.*

Improved Sleep Quality: *Your Sleep Tracking app can help users gain insights into their sleep patterns and provide personalized recommendations to improve sleep quality. Users can track their sleep duration, sleep stages, and other sleep-related data, helping them identify potential issues and make adjustments to their sleep habits for better overall sleep quality.*

Better Sleep Management: *Sleep tracking apps can serve as a valuable tool for managing sleep-related conditions such as insomnia, sleep apnea, or restless leg syndrome. By tracking sleep data over time, users can monitor the effectiveness of interventions or treatments they may be receiving and work with healthcare professionals to make data-driven decisions for better sleep management.*

Positive Lifestyle Changes: *Sleep is closely linked to various lifestyle factors such as physical activity, nutrition, and stress management. By tracking sleep patterns with your app, users may become more aware of the impact of these lifestyle factors on their sleep quality, leading to positive changes in other areas of their life to support better sleep*

In conclusion, a Sleep Tracking app can provide valuable insights, personalized recommendations, and help users optimize their sleep for improved health, well-being, performance, and lifestyle changes.

7 FUTURE SCOPE

As sleep becomes an increasingly important aspect of overall health and well-being, the demand for sleep tracking apps is expected to grow in the future. Here are some potential areas of future scope for developing a sleep tracking app: .

1. Advanced Sleep Analysis: Sleep tracking apps can leverage machine learning and artificial intelligence algorithms to provide more advanced sleep analysis. This can include the ability to detect and analyze different sleep stages such as deep sleep, light sleep, and REM sleep, as well as identifying sleep disruptions like sleep apnea or restless leg syndrome.

2.Personalized Sleep Recommendations: Sleep tracking apps can use data collected from multiple sources, such as sleep patterns, lifestyle habits, and environmental factors, to provide personalized sleep recommendations. For example, the app can suggest specific changes to the user's sleep routine, bedroom environment, or daily activities to optimize their sleep quality based on their individual needs and preferences.

3.Integration with Wearable Devices: Sleep tracking apps can integrate with wearable devices, such as smartwatches or sleep tracking sensors, to collect more accurate and real-time sleep data. This can provide users with a seamless and convenient way to track their sleep without having to rely solely on their smartphones.

8.Appendix

A.Source code

```
 <?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools">

   <application
      android:allowBackup="true"
      android:dataExtractionRules="@xml/data_extraction_rules"
      android:fullBackupContent="@xml/backup_rules"
      android:icon="@mipmap/ic_launcher"
      android:label="@string/app_name"
      android:supportsRtl="true"
      android:theme="@style/Theme.ProjectOne"
      tools:targetApi="31">
      <activity
         android:name=".TrackActivity"
         android:exported="false"
         android:label="@string/title_activity_track"
         android:theme="@style/Theme.ProjectOne" />
      <activity
         android:name=".MainActivity"
         android:exported="false"
         android:label="@string/app_name"
         android:theme="@style/Theme.ProjectOne" />
      <activity
         android:name=".MainActivity2"
         android:exported="false"
         android:label="RegisterActivity"
         android:theme="@style/Theme.ProjectOne" />
      <activity
         android:name=".LoginActivity"
         android:exported="true"
         android:label="@string/app_name"
         android:theme="@style/Theme.ProjectOne">
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
 <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
</manifest>
```