PROJECT REPORT TEMPLATE

PROJECT REPORT

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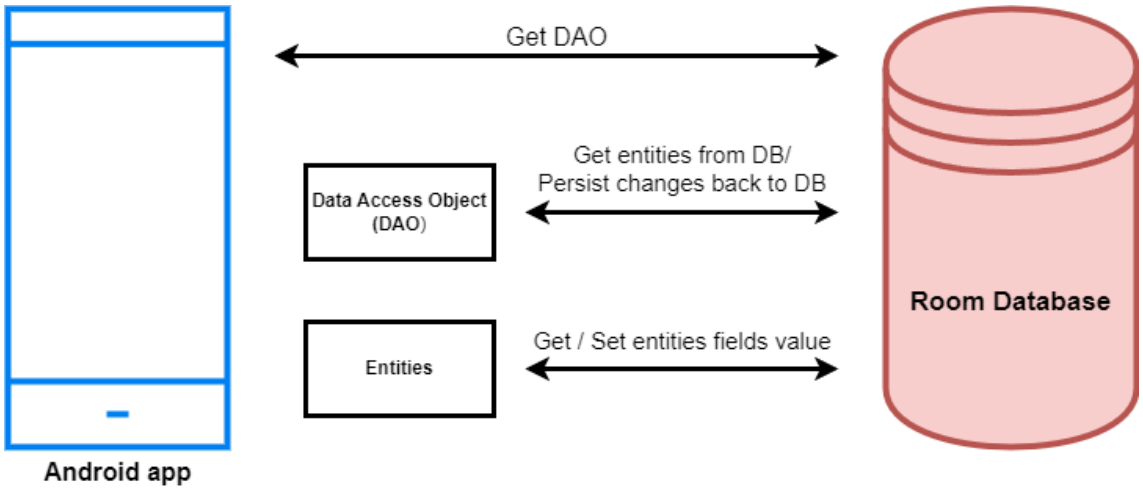
A Sleep Tracking App For A Better Night's Rest

Project Description:

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.

Architecture



Learning Outcomes :

By end of this project:

- You'll be able to work on Android studio and build an app.
- You'll be able to integrate the database accordingly.

Project Workflow:

- Users register into the application.
- After registration , user logins into the application.
- User enters into the main page
- User can track the sleep timing and he record the time

Note:

To complete the project you need to finish up the tasks listed below:

Tasks:

1.Required initial steps
2.Creating a new project.
3.Adding required dependencies.
4.Creating the database classes.
5.Building application UI and connecting to database.
6.Using AndroidManifest.xml
7.Running the application.

INTRODUCTION

1.1 Overview

- Sleep tracking is the process of monitoring and recording your sleep patterns and habits to gain insight into the quality and quantity of your sleep. The goal of sleep tracking is to identify any issues that may be impacting your sleep and to make changes that can help you get a better night's sleep.

- A sleep tracking project typically involves the use of sensors or devices that are placed on or near your bed to monitor your movements and other data while you sleep. This data is then analyzed using algorithms and machine learning techniques to identify patterns and trends in your sleep behavior.

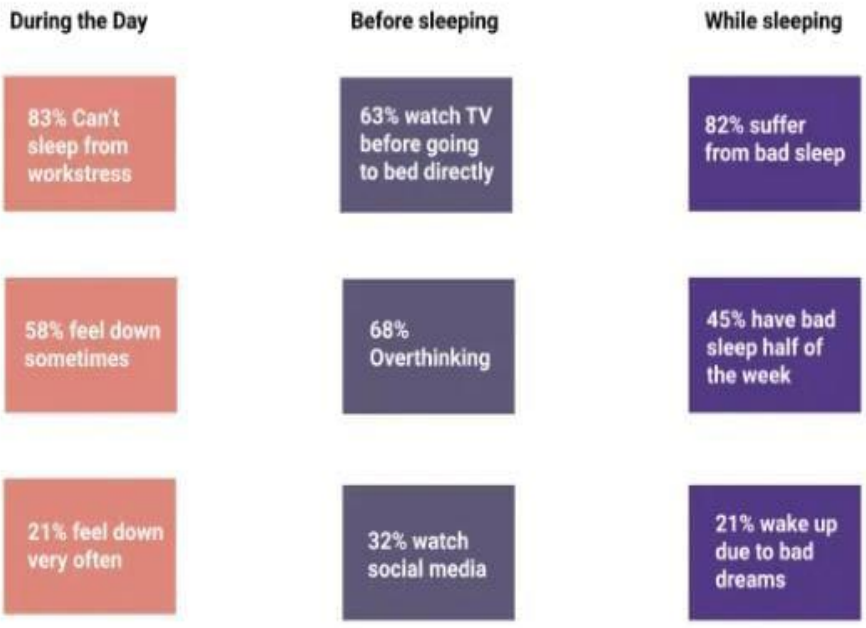
1.2 Purpose

- The purpose of the "Sleep Tracking" project is to develop a software application that allows users to track their sleep patterns and quality. The goal is to provide users with valuable insights into their sleep habits, which can help them improve their overall health and well-being.

- The application will be designed to work with wearable devices such as smartwatches, fitness trackers, and other health monitoring devices. It will use various sensors such as accelerometers, heart rate monitors, and gyroscope to gather data on the user's sleep patterns.

Problem Definition & Design Thinking

2.1 Empathy Map

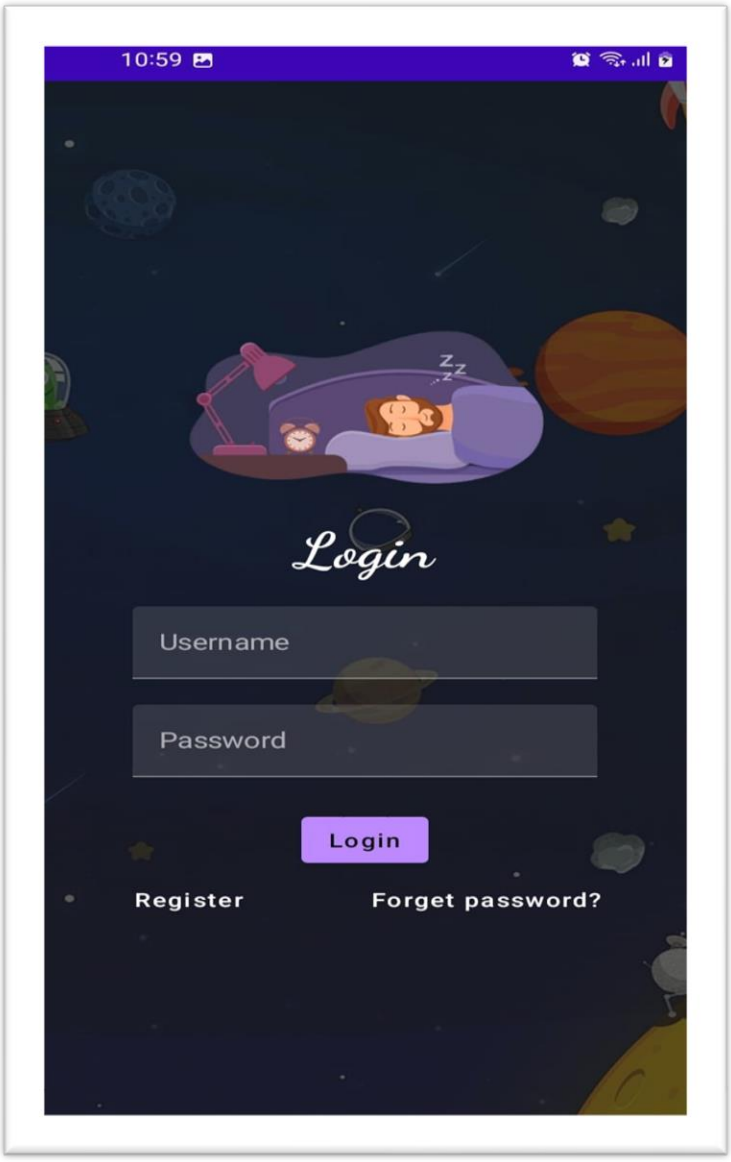


2.2 Ideation & Brainstorming Map

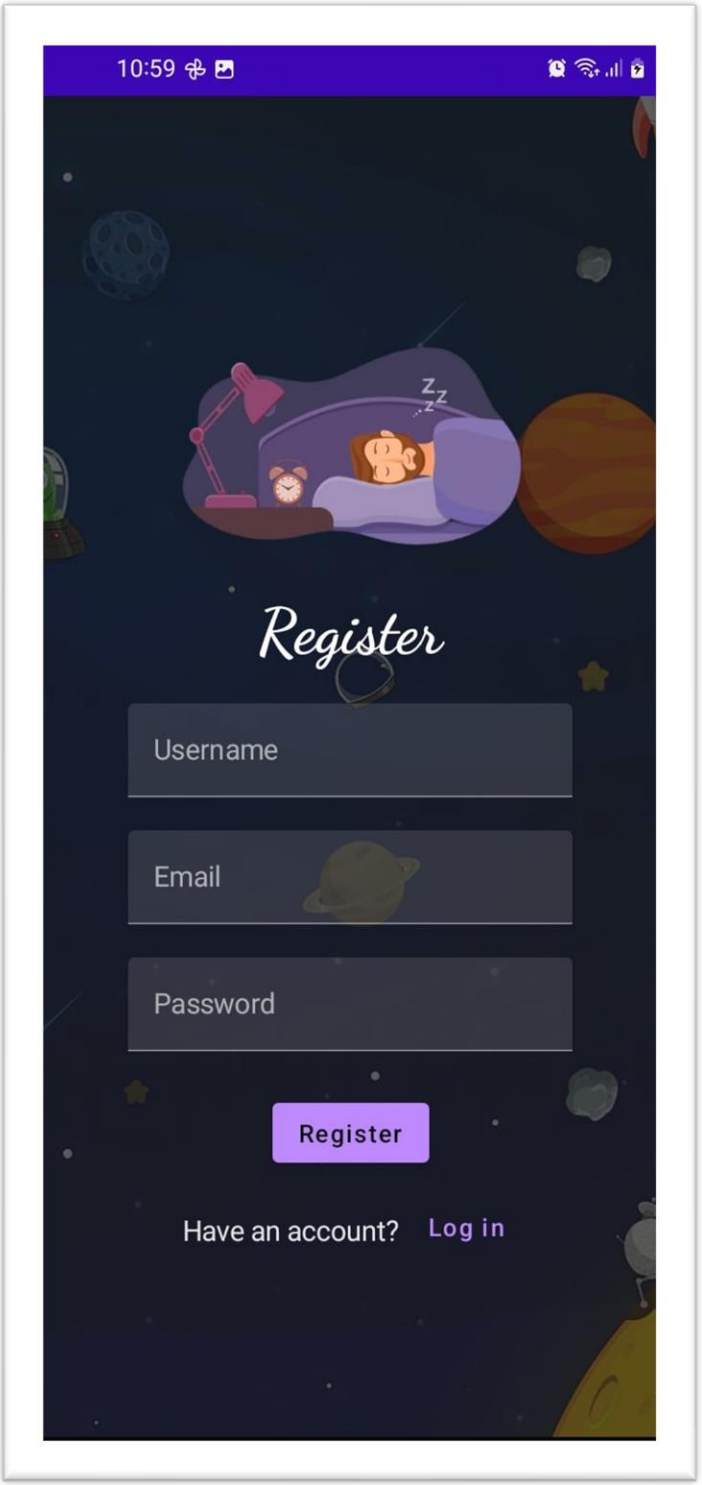

20 February
Monday
Start tracking
STATISTICS
Quality
78 %
Duration
7h 50m
WEEKLY SLEEP
Good night
22:30
Sleep duration
00:12
Stop tracking

RESULT

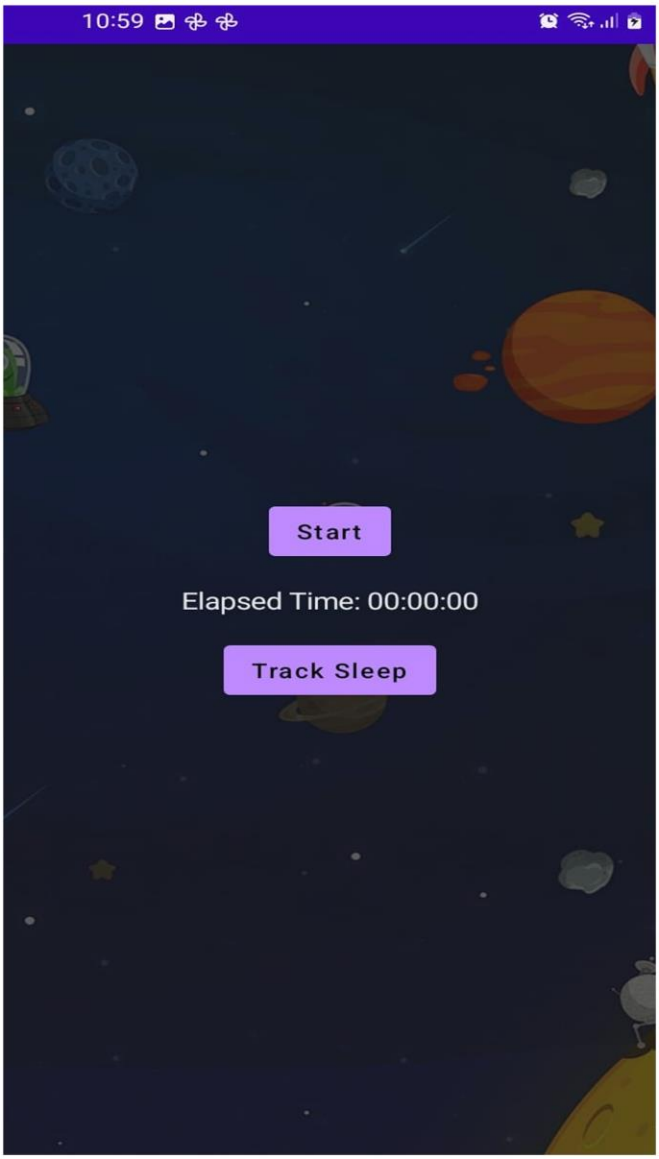
Login page


10:59
Login
Username
Password
Login
Register
Forget password?

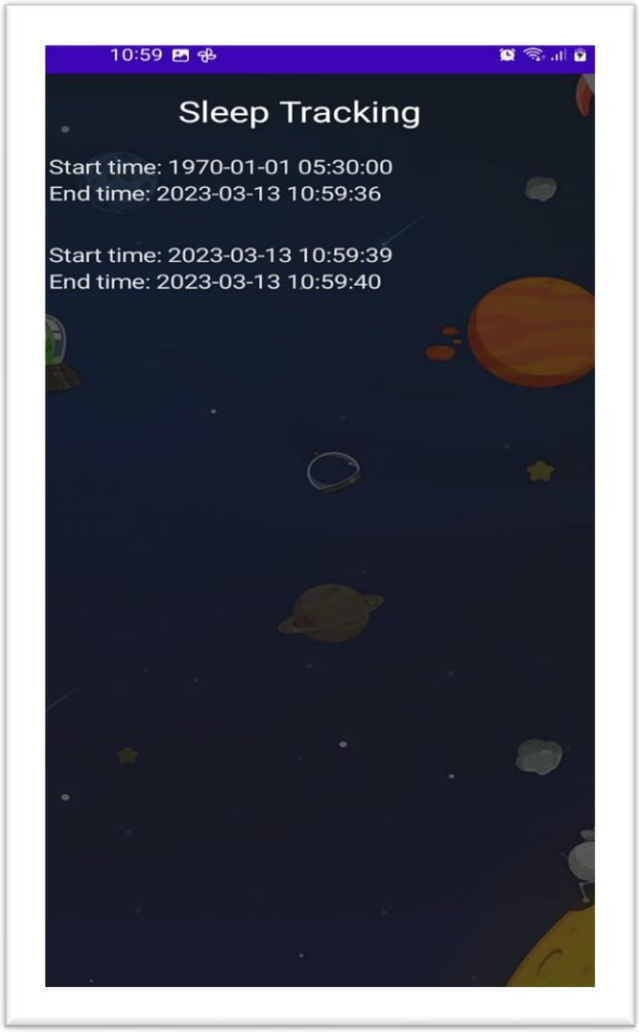
Register page



MAIN PAGE



TRACK SLEEP PAGE



Advantages & Disadvantages

Advantages:

- understanding of sleep patterns: Sleep tracking technology provides a detailed analysis of sleep patterns, including the number of hours slept, time spent in each sleep stage, and the frequency of awakenings.

- Improved sleep quality: By monitoring sleep patterns, sleep tracking technology can provide insights into factors that may be affecting sleep quality, such as noise, temperature, and light

- Health benefits: Adequate sleep is essential for overall health and wellbeing. By tracking sleep patterns, individuals can identify any sleep problems that may be affecting their health, such as sleep apnea or insomnia.

- Personalized insights: Sleep tracking technology can provide personalized insights based on an individual's sleep patterns..

Disadvantages:

- One potential disadvantage of a sleep tracking project is that it may not always accurately reflect the quality of a person's sleep.

- Sleep tracking technology typically relies on sensors and algorithms to track movement and other physiological signals during sleep, but these measurements may not always capture the full complexity of a person's sleep experience.

- Additionally, some people may find sleep tracking uncomfortable or intrusive, which could potentially interfere with their ability to fall asleep or stay asleep.

- Finally, privacy concerns may also be a potential disadvantage of sleep tracking projects, as personal sleep data could be vulnerable to hacking or misuse if not properly secured.

Application:

- Sleep Tracking: The application will use the device's sensors to track the user's sleep patterns. It will monitor the user's movement, heart rate, and other data points to provide accurate information about the quality of their sleep.
- Sleep Diary: The application will allow users to record their sleep habits and patterns. Users can enter information about when they go to bed, when they wake up, and how they feel in the morning. This information will be used to provide personalized recommendations for improving their sleep.
- Sleep Recommendations: The application will provide personalized recommendations for improving the user's sleep based on their sleep diary and tracking data. These recommendations may include adjusting their bedtime routine, changing their diet, or incorporating exercise into their daily routine.
- Sleep Environment: The application will also provide users with recommendations for creating a sleep-friendly environment. This may include adjusting the temperature, reducing noise, and using calming scents to promote relaxation.
- Sleep Challenges: The application may include various sleep challenges that users can participate in to improve their sleep quality. These challenges may include things like reducing screen time before bed or incorporating meditation into their daily routine.

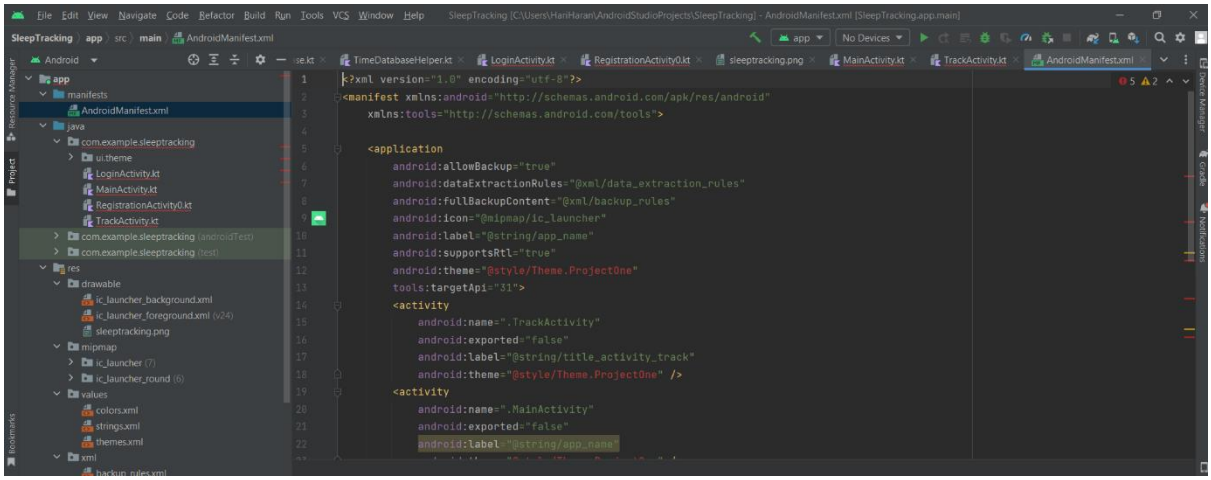
Conclusion:

- In conclusion, the Sleep Tracking project is an innovative and useful tool that can greatly benefit individuals who want to improve their sleep habits. The project involves using a variety of sensors and devices to track different aspects of sleep, including sleep duration, sleep quality, and sleep patterns.
- Overall, the Sleep Tracking project has shown that with the right tools and technologies, it is possible to gain valuable insights into our sleep habits and make positive changes to improve our overall health and well-being. As more people become interested in tracking their sleep, it is likely that we will see continued innovation in this area, leading to even more sophisticated and effective sleep tracking solutions in the future.

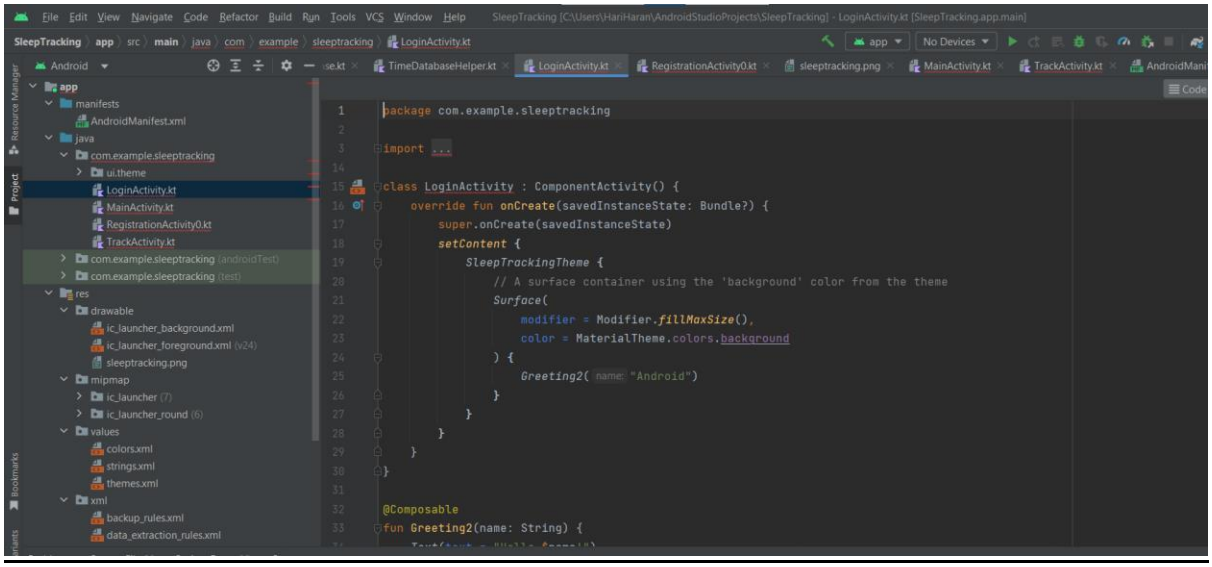
Future scope:

- Integration with wearable devices: The most popular way to track sleep currently is through wearable devices such as fitness trackers, smartwatches, and sleep tracking bands. As technology continues to improve, these devices will become even more accurate and will integrate with other health monitoring technologies such as blood pressure monitors and heart rate monitors.
- Artificial Intelligence: With the increasing use of AI, sleep tracking will become even more precise, and the analysis will be more accurate. AI algorithms will be able to analyze large amounts of data quickly and provide personalized insights based on the user's specific sleep patterns, history, and other factors.
- Sleep coaching: Sleep tracking technology will evolve to offer personalized coaching based on the data collected. This could include recommendations for lifestyle changes, such as dietary adjustments, exercise routines, and relaxation techniques.
- Home sleep testing: Home sleep testing will become more accessible, allowing individuals to monitor their sleep patterns in the comfort of their own home. This will provide valuable information to individuals and their doctors, which can help diagnose sleep disorders and other health conditions.
- Telemedicine: Telemedicine will become more common, allowing doctors to remotely monitor patients' sleep patterns and provide personalized treatment recommendations. This will provide greater access to care, particularly in rural or remote areas where access to healthcare is limited.

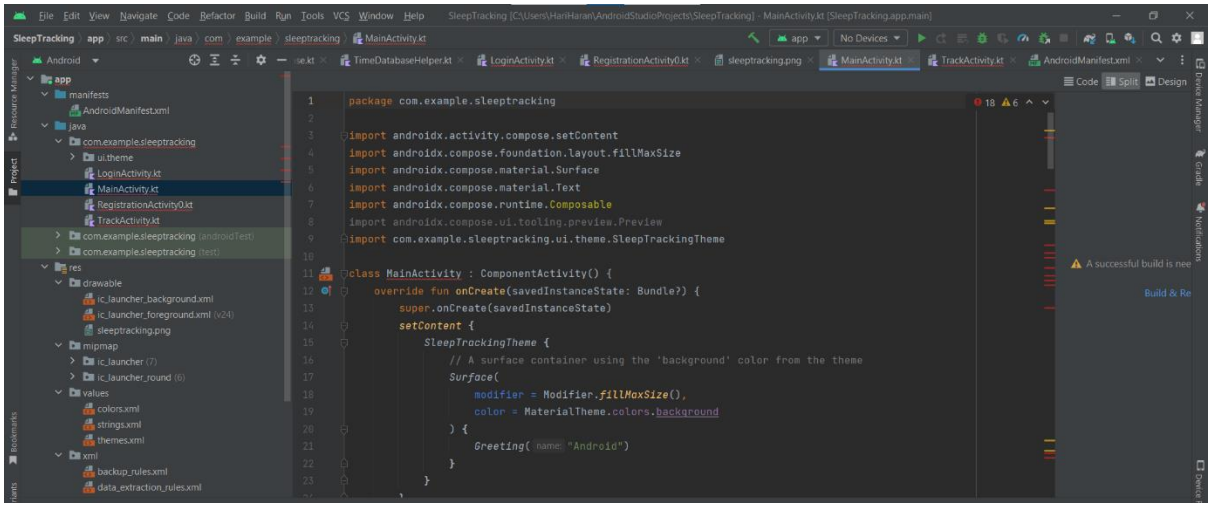
AndroidMainfest.xml



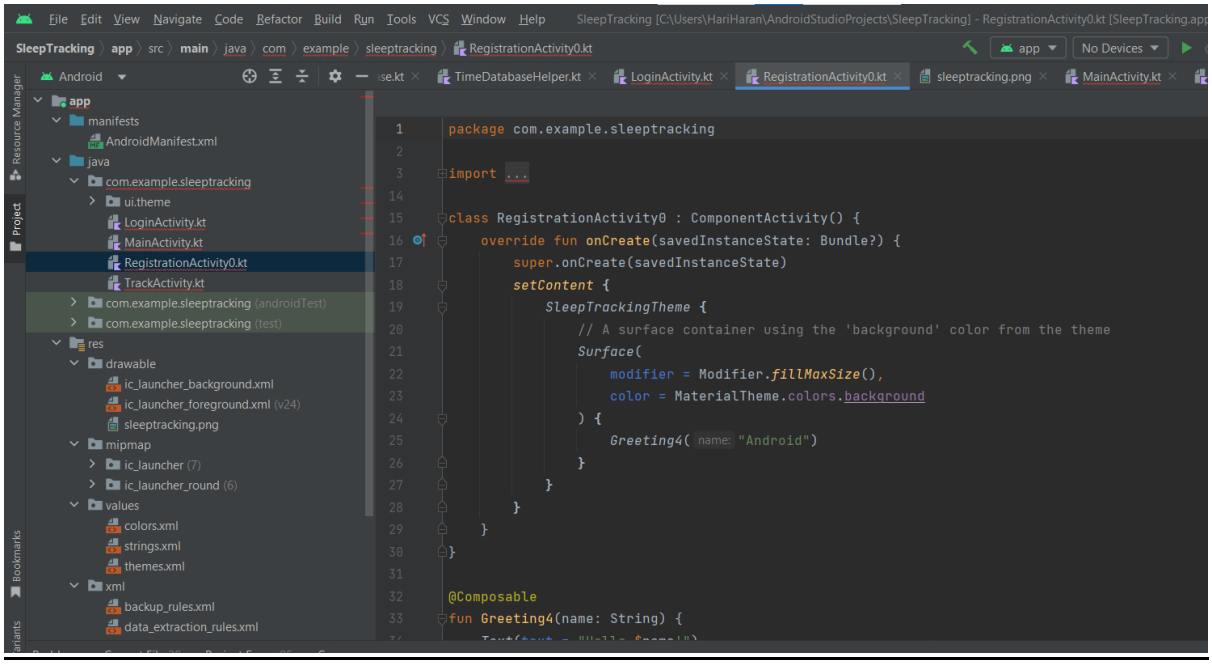
LoginActivity.kt



MainActivity.kt



RegistrationActivity0.Kt



TrackActivity.kt