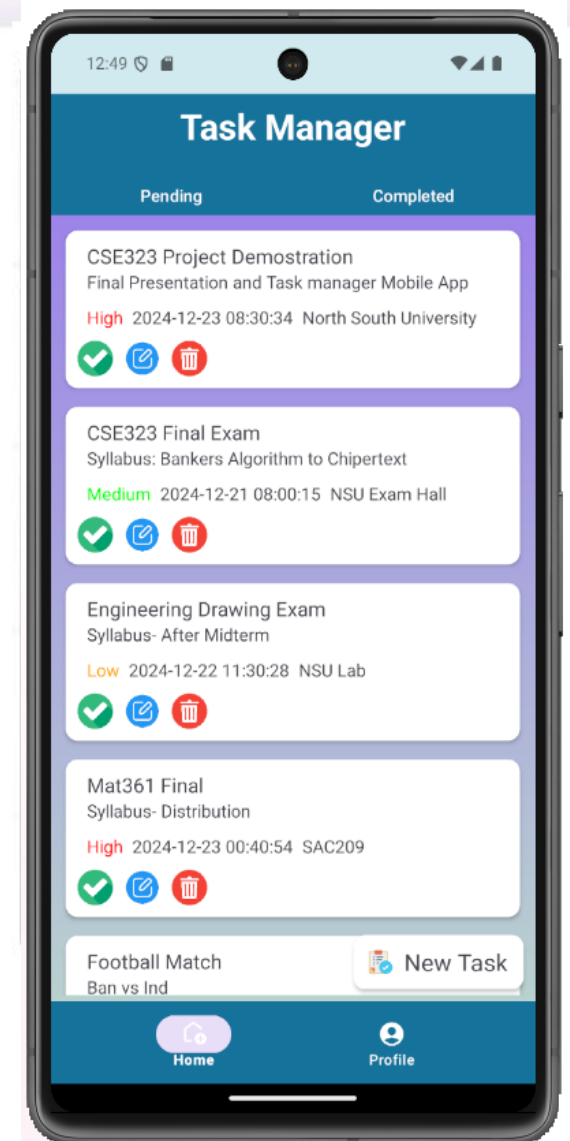
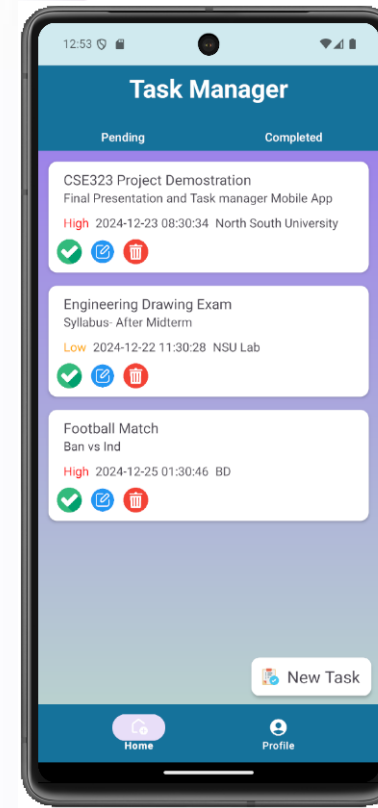


# Task Manager

## Mobile App



# Team Member Information



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# Introduction

The Task Manager Mobile App is a modern tool designed to streamline task management. It offers key features like task creation, categorization, due date tracking, and task completion. Developed using Java in Android Studio and powered by Real time Database, the app ensures real-time updates and secure data handling. Distributed as an APK file (TaskManager.apk), it is easily installable on Android devices, making task management efficient and accessible.



# Motivation for Task Manager Mobile App

## Missed Deadlines



Insufficient reminders often lead to incomplete tasks, causing stress and lost opportunities.

## Disorganized Workflows



Limited categorization and prioritization tools hinder productivity, making it hard to

## Complex Interfaces



Cluttered designs reduce usability, leading users to abandon effective task management practices.

## Inconsistent Updates



Lack of real-time synchronization creates confusion, causing users to miss critical updates.

## Real-Time Synchronization



Ensures seamless updates across all devices, enabling users to stay informed and in control.

## Intuitive Interface



Simplifies task creation, organization, and tracking, enhancing user experience and

## Comprehensive Management Tools



Empowers users to prioritize, track, and complete tasks efficiently, leading to improved



# Objectives of the Task Manager Mobile App

1

## Secure User Authentication

Provide a secure login and registration system using email or Google accounts to ensure user data safety.

2

## Task Management

Allow users to create, edit, and delete tasks, including essential details such as name, description, priority, due date, and location.

3

## Real-Time Synchronization

Ensure real-time synchronization of task data across devices using real time Database, enabling seamless user experience.

4

## Location-Based Reminders

Implement location-based reminders triggered by geofencing, helping users remember tasks based on

5

## Categorized Dashboard

Offer a categorized dashboard for task visualization, featuring list, calendar, and map views for better organization.

6

## Notifications

Provide notifications for due dates and location-based tasks, ensuring users never miss important reminders.

7

## Account Management

Allow users to manage their account information and securely log out, maintaining user privacy

8

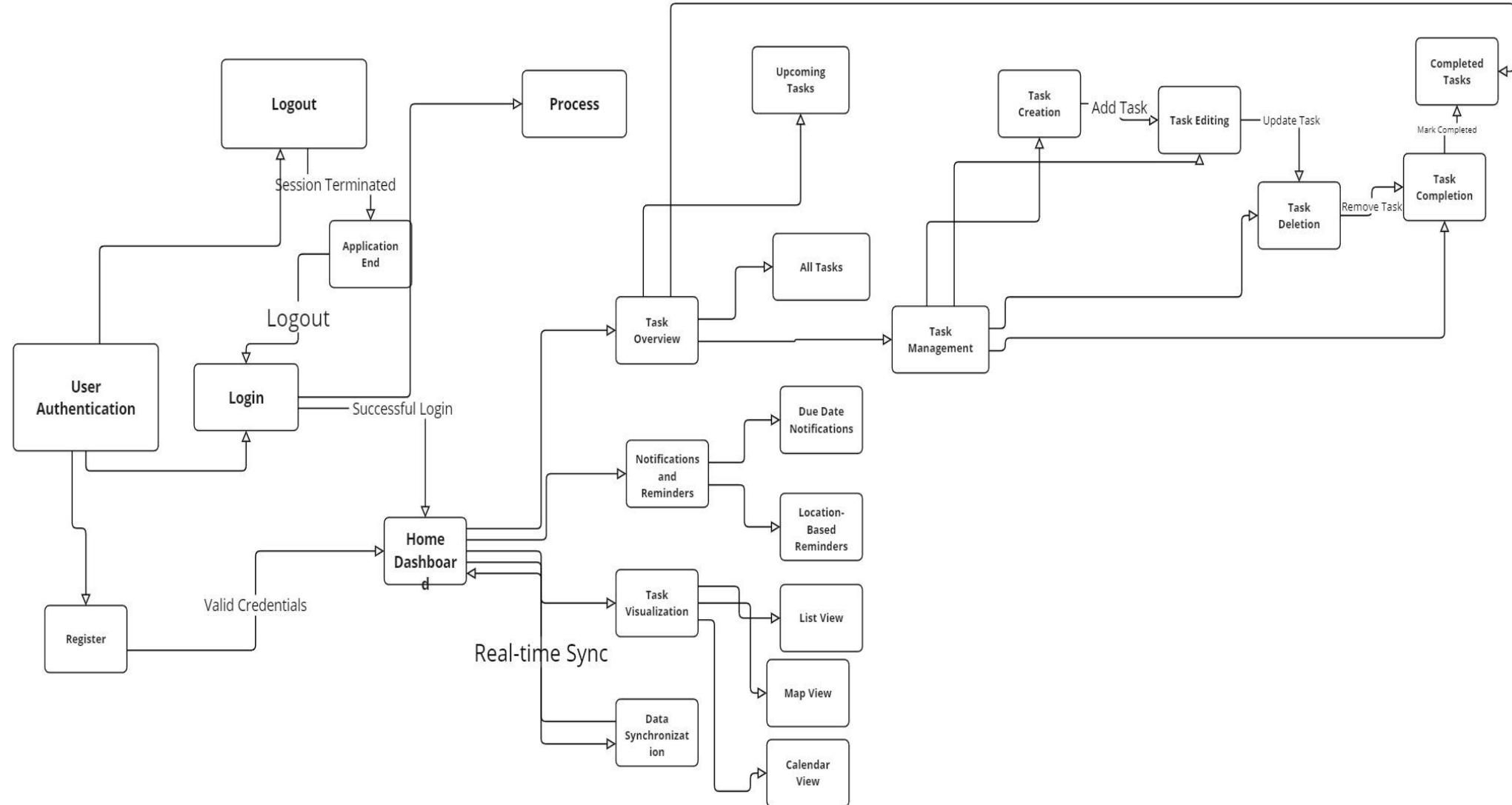
## APK Distribution

Build and distribute the app as a self-contained APK file for Android devices, facilitating easy installation for users.

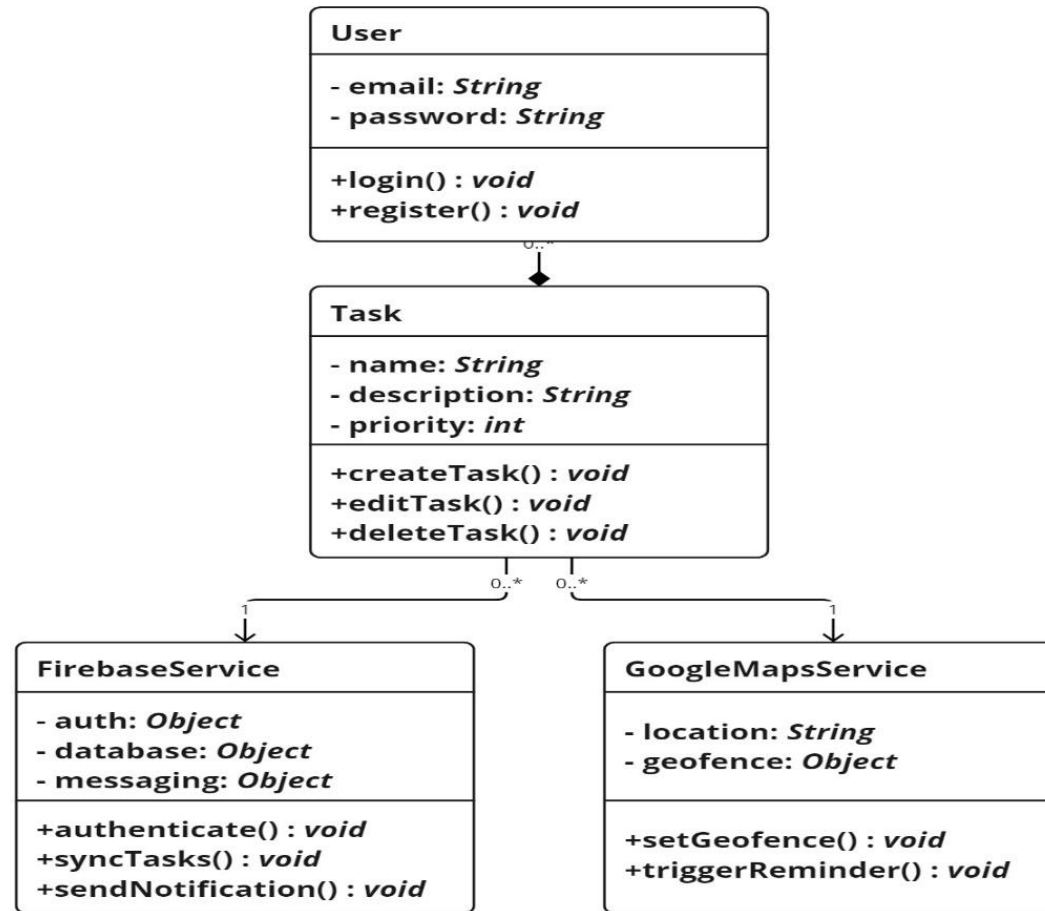
# System Model of the Task Manager Mobile App



# System Model Flow Chart



# System Model UML Diagram





# System Model of the Task Manager Mobile

## Frontend

Handles user interactions through an intuitive interface for task management.

### Technologies Used:

- Java: Secure and concise programming for Android.
- Android Studio: IDE for coding, debugging, and testing.
- Gradle: Automates dependency management and APK builds.

### Key Components:

- User Login/Registration: Secure email-based authentication via Realtime Database.
- Dashboard: Displays tasks categorized as Upcoming, Completed, and All Tasks.
- Task Forms: Allows adding and editing tasks (name, description, priority, and due date).
- Account Management: Provides user account details and secure logout functionality.

# The backend of System Model Task Manager Mobile App



## Realtime Database

This component provides real-time task data storage and synchronization, allowing users to see updates instantly across all devices.



## Authentication

This ensures secure email-based user authentication, protecting user accounts and sensitive data.



## Cloud Messaging (FCM)

FCM facilitates the sending of task reminders, ensuring users stay informed about their deadlines and tasks.



## Real-Time Updates

This feature guarantees task synchronization across devices, providing users with the most current information available.



## Secure Data Management

User and task information is stored safely, ensuring data integrity and protection against unauthorized access.



## Notifications

The app sends timely reminders for deadlines and location-based tasks, helping users stay organized and on track.

# Middleware of System Model of the Task Manager Mobile App

1

## SDK

Utilizes Database SDK to manage authentication, database interactions, and push notifications, enhancing user engagement.

2

## Gradle

Employs Gradle for handling API integration and builds, streamlining development processes.

3

## Data Synchronization

Synchronizes data and processes user actions efficiently, ensuring real-time updates and interactions.

4

## Task Reminders

Manages task reminders through Realtime Cloud Messaging, providing timely notifications to users.

5

## User Experience

This architecture promotes efficient data handling and enhances user experience by processing inputs seamlessly.



# Implementation

## Environment Setup



### 1 Android Studio

Installed and configured as the primary IDE for Android development, offering a complete environment for coding, testing, and debugging application.



### 2 Gradle

Utilized for efficient dependency management and project builds, allowing for automated compilation and integration of libraries.



### 3 Database

Including Real Time Database for data storage, Authentication for user management, and Cloud Messaging for Notification.



### 4 JDK

Java Development Kit installed to ensure compatibility for compiling and running Java code in the Android Environment.

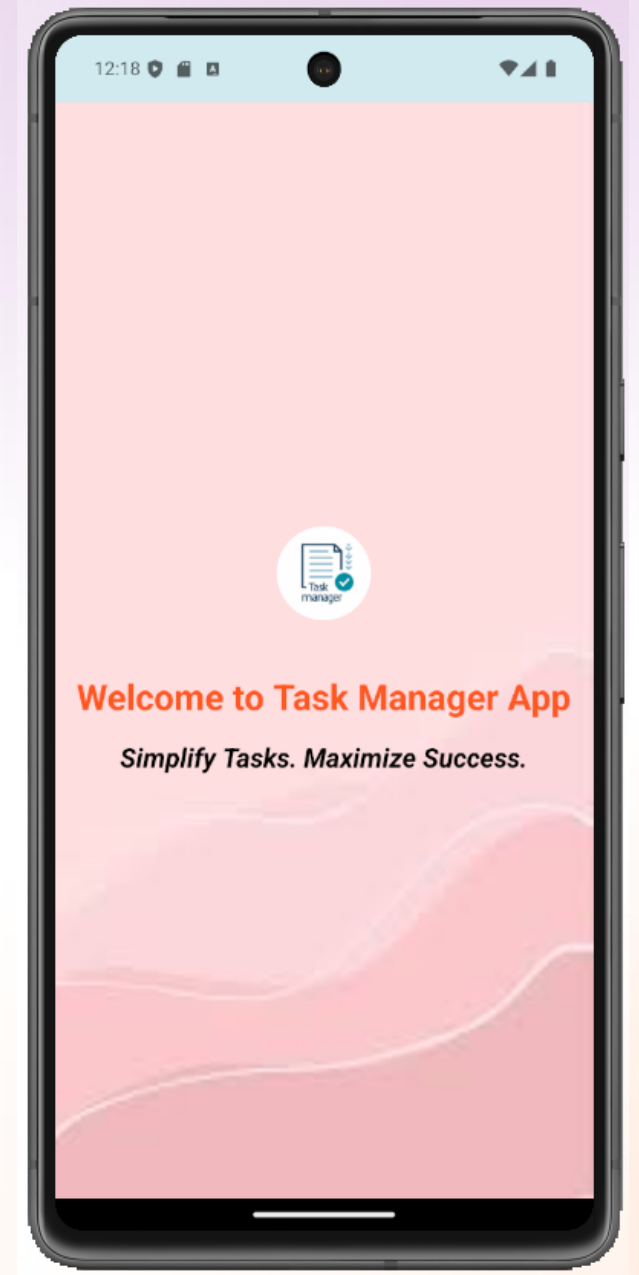
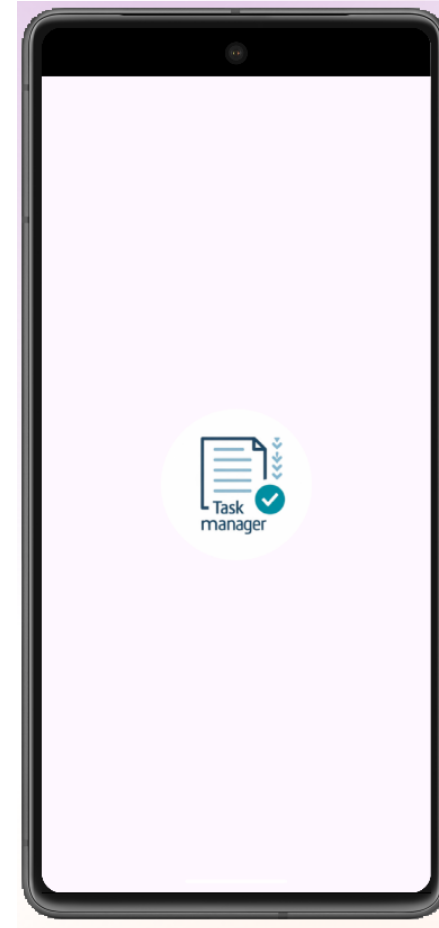


# User Management

1

## Home Page of APP

Task Manager is the primary user interface, providing a streamlined layout for tasks and user navigation.

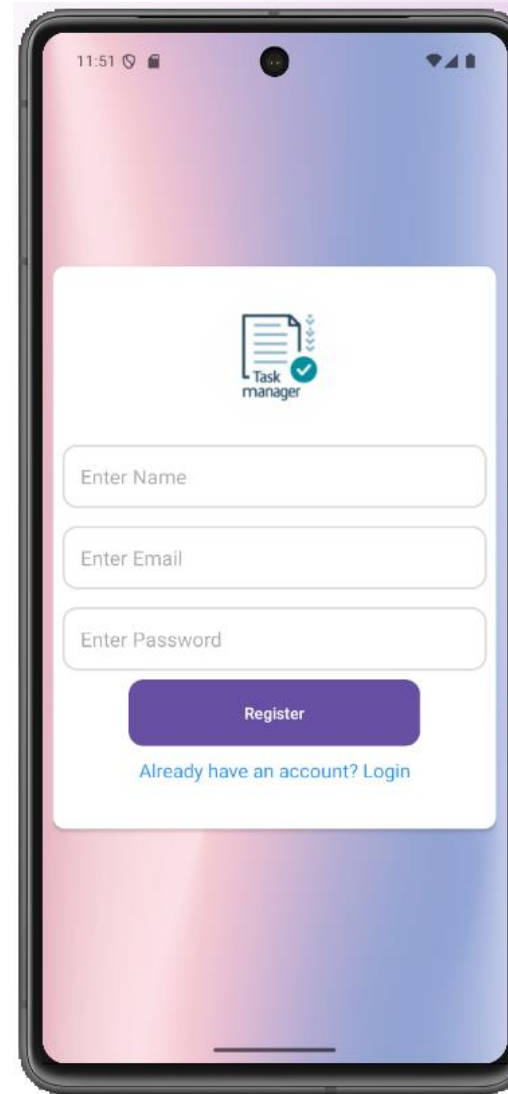


# User Management

2

## Registration

Users can create accounts through email or Google sign-in using Real time Authentication, ensuring a secure and convenient onboarding process.



11:51

Task manager

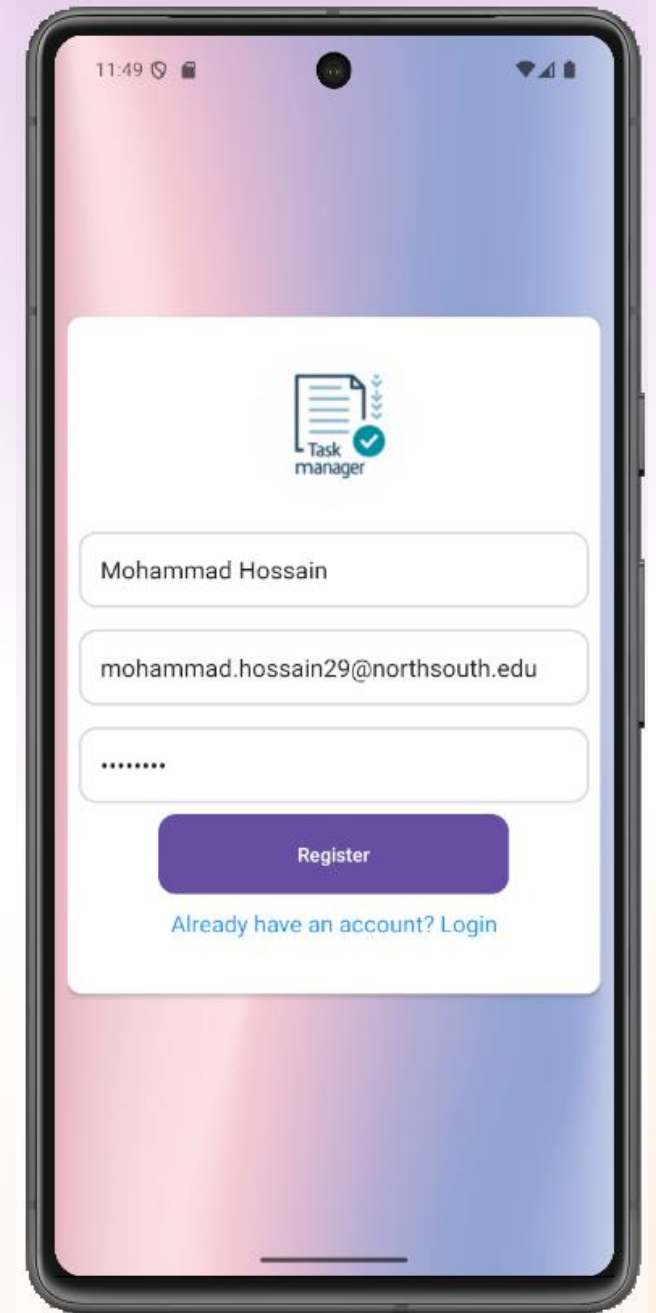
Enter Name

Enter Email

Enter Password

Register

[Already have an account? Login](#)



11:49

Task manager

Mohammad Hossain

mohammad.hossain29@northsouth.edu

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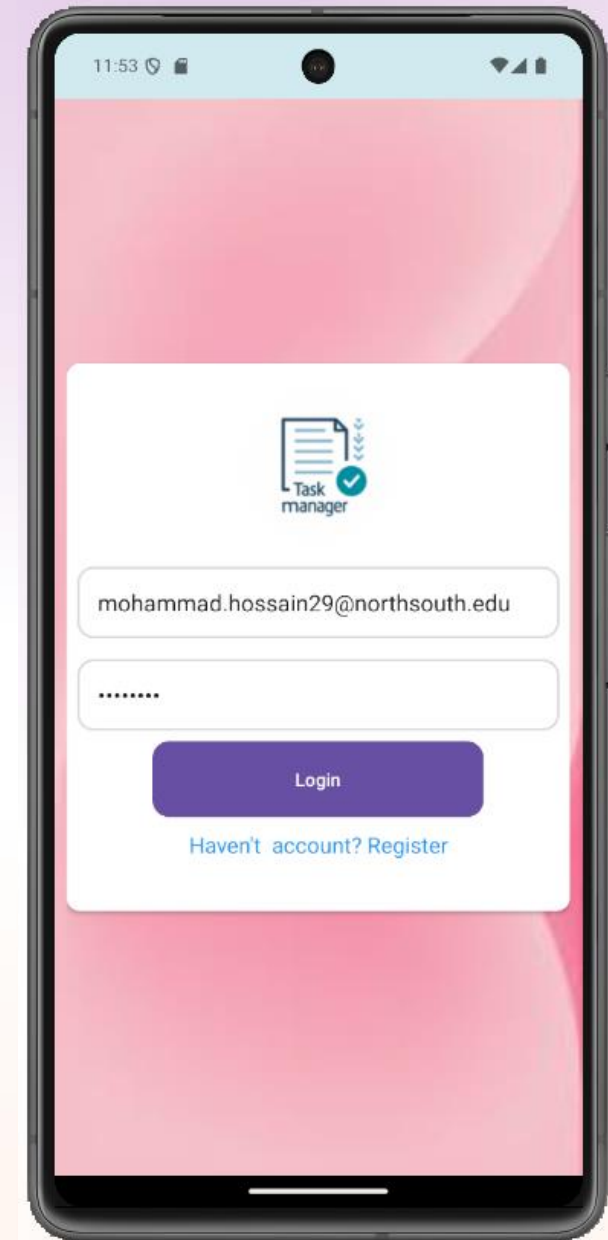
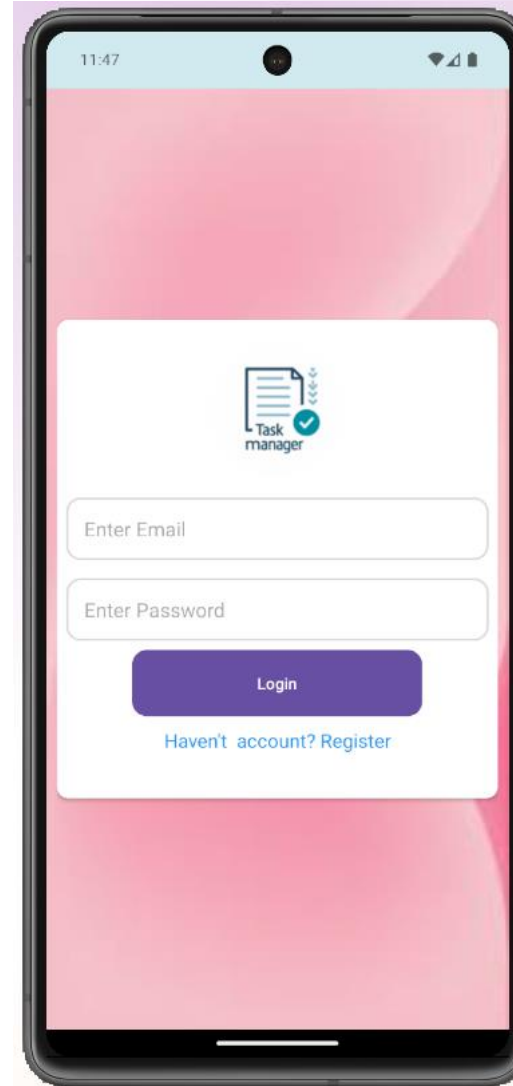
Register

[Already have an account? Login](#)

# User Management

## 3 Login

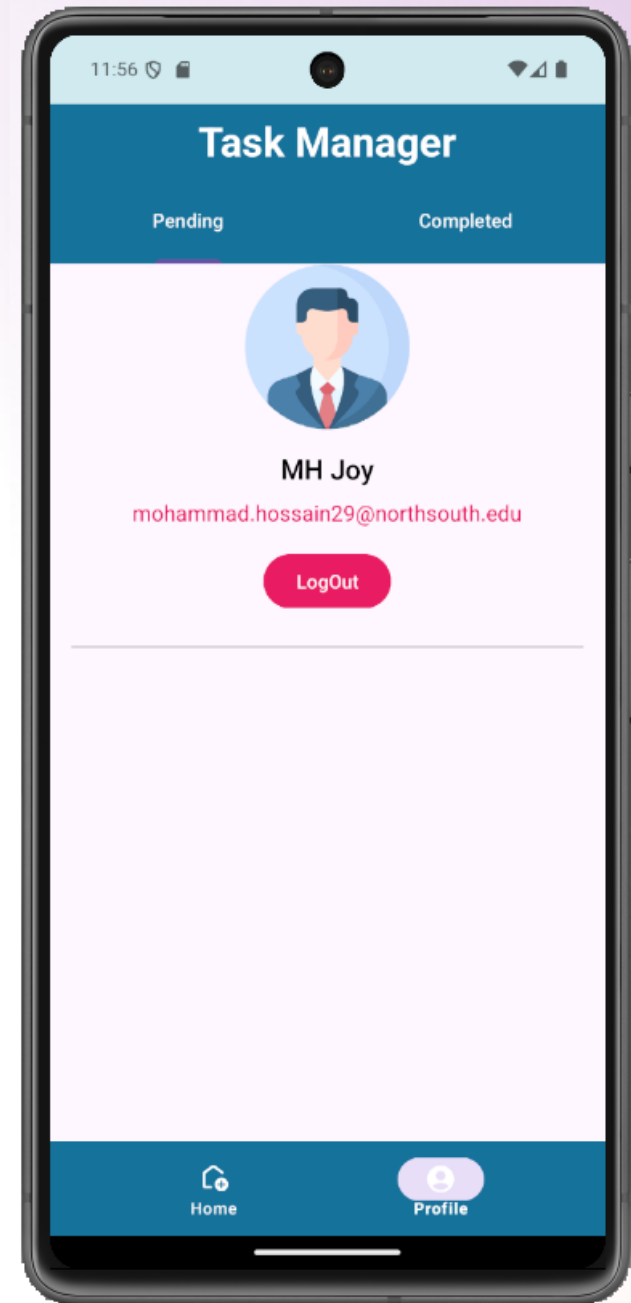
Users can access their accounts securely using their credentials, allowing them to manage their tasks effectively.



# User Management

## 4 Logout

The app provides a secure logout feature, ending user sessions and protecting data.



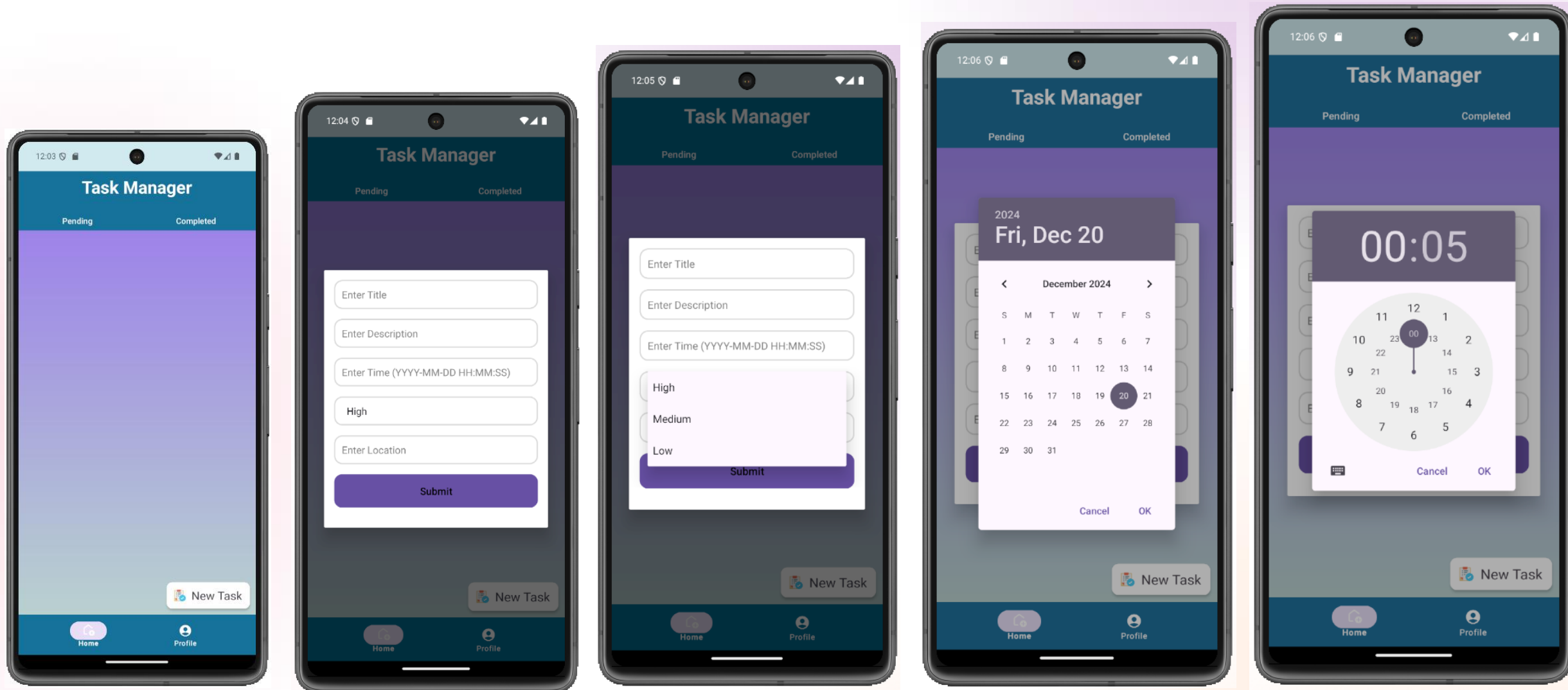


# Task Management Feature

1

## Task Creation

- 1) New Task Add
- 2) Name
- 3) Description
- 4) Priority (High, Medium, Low)
- 5) Due Date (using a date and time picker)
- 6) Location

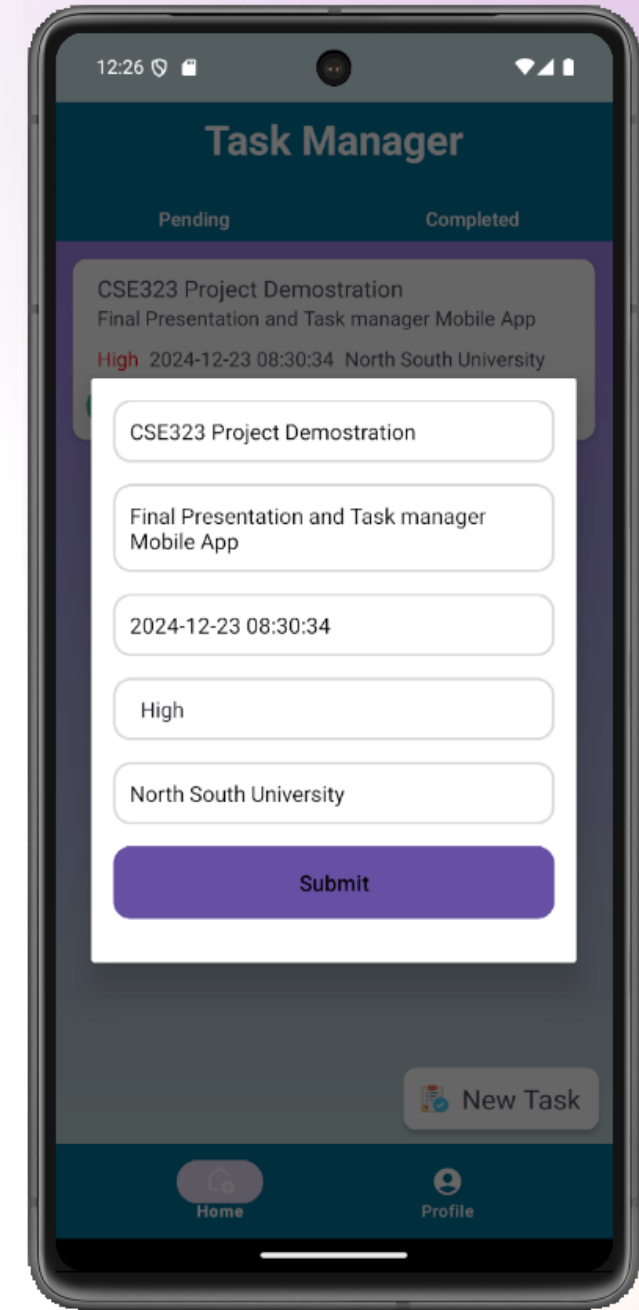


# Task Management Feature

2

## Task Editing

- Users can modify task details.

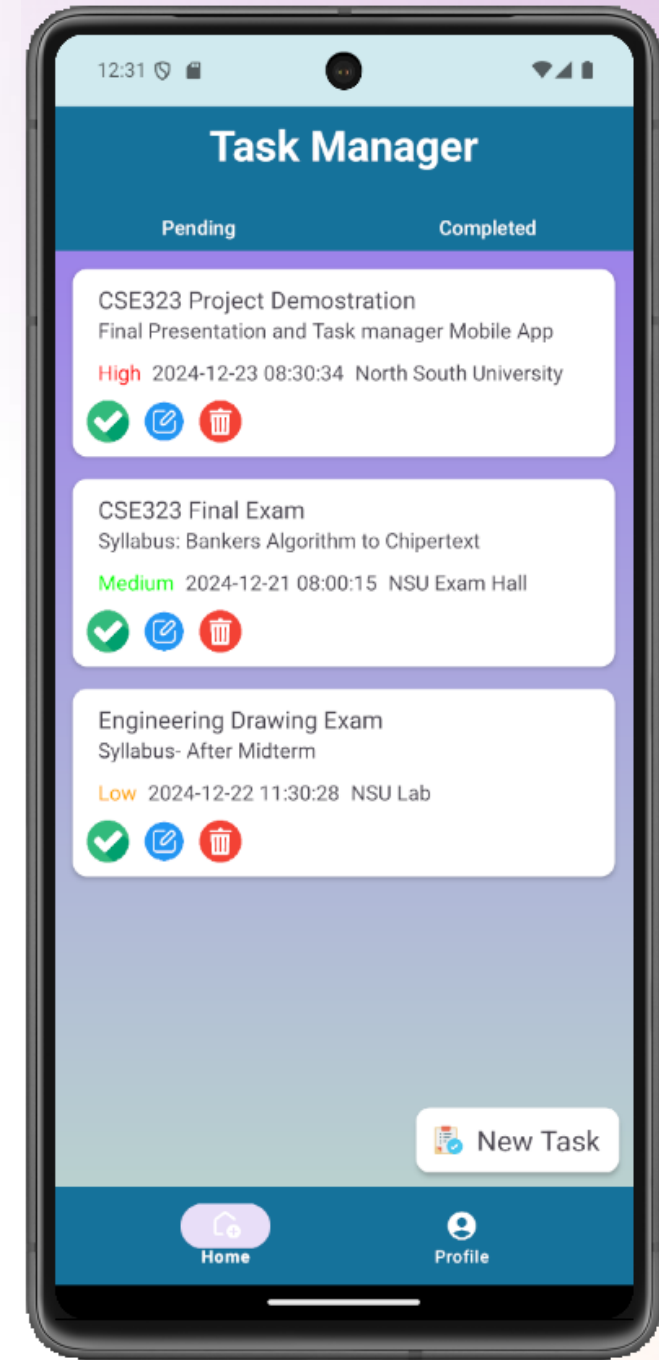


# Task Management Feature

3

## Task Deletion:

- Users can remove tasks permanently.

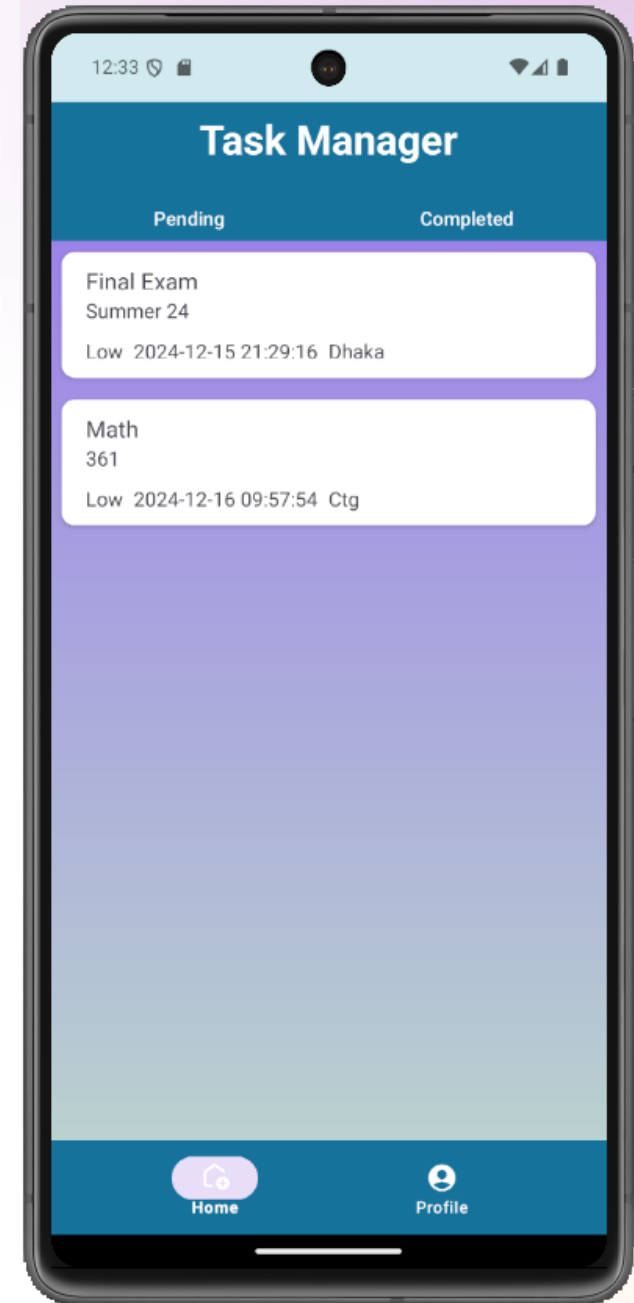


# Task Management Feature

4

## Task Completion

- Users can mark tasks as completed, moving them to the Completed Tasks section.



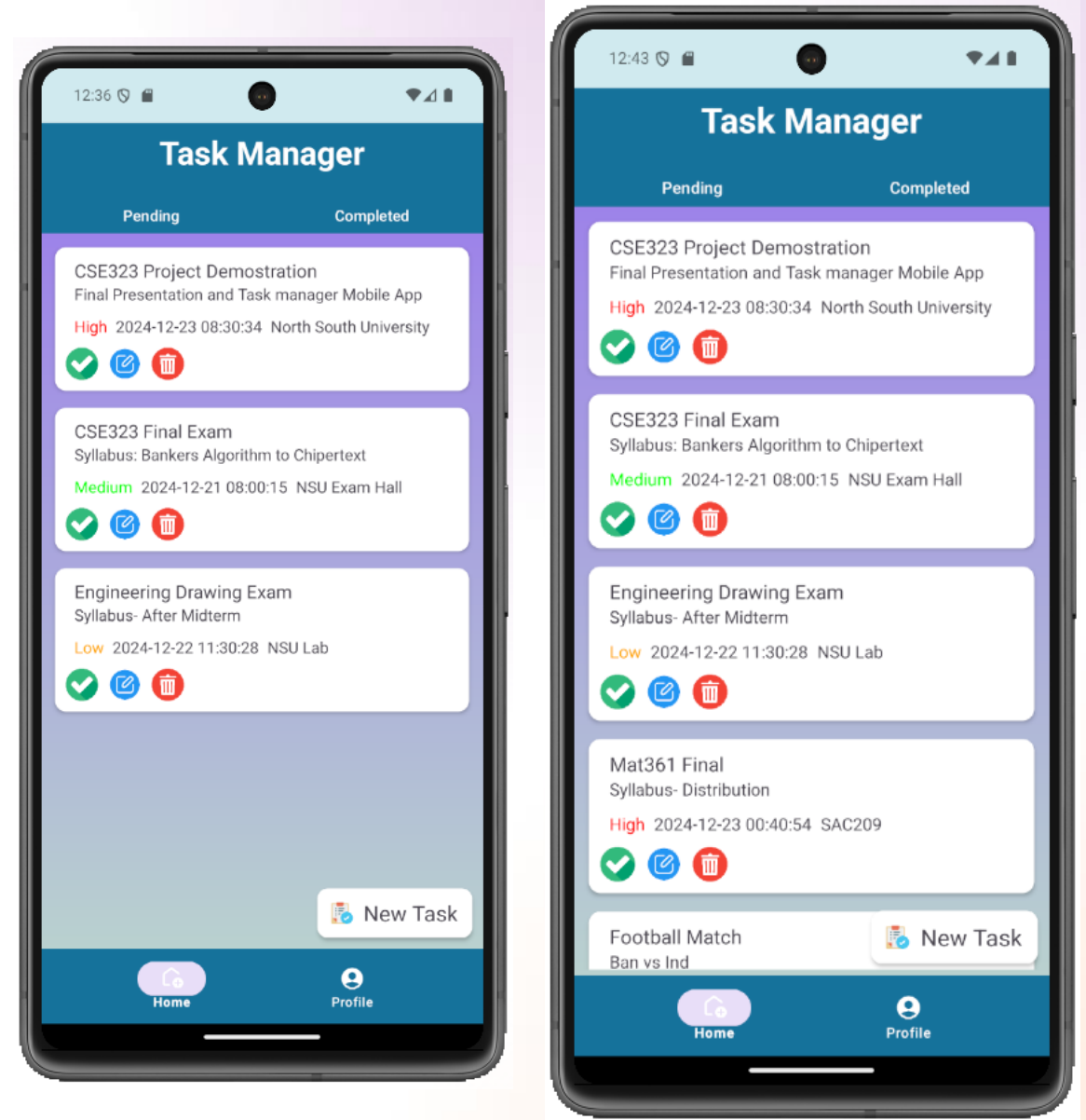


# Task Visualization and Categorization



## List View

Tasks are displayed in a list format, categorized by priority or due dates, providing users with a clear and organized view of their tasks.

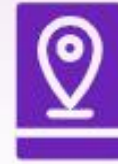


# Notifications and Reminders



## Due Date Notifications

Alerts are sent for tasks nearing their deadlines using Firebase Cloud Messaging, ensuring users are reminded in a timely manner to complete their tasks.



## Location-Based Reminders

Notifications trigger when users approach task locations via geofencing, enhancing user productivity by providing contextually relevant reminders.



# APK Build and Testing



## Build Automation

Utilized Gradle for effective dependency management and streamlined APK building processes, ensuring consistency and efficiency.



## Testing

Performed comprehensive testing, including functional, performance, and security tests using both Android Studio's emulator and a variety of physical devices to ensure robustness.

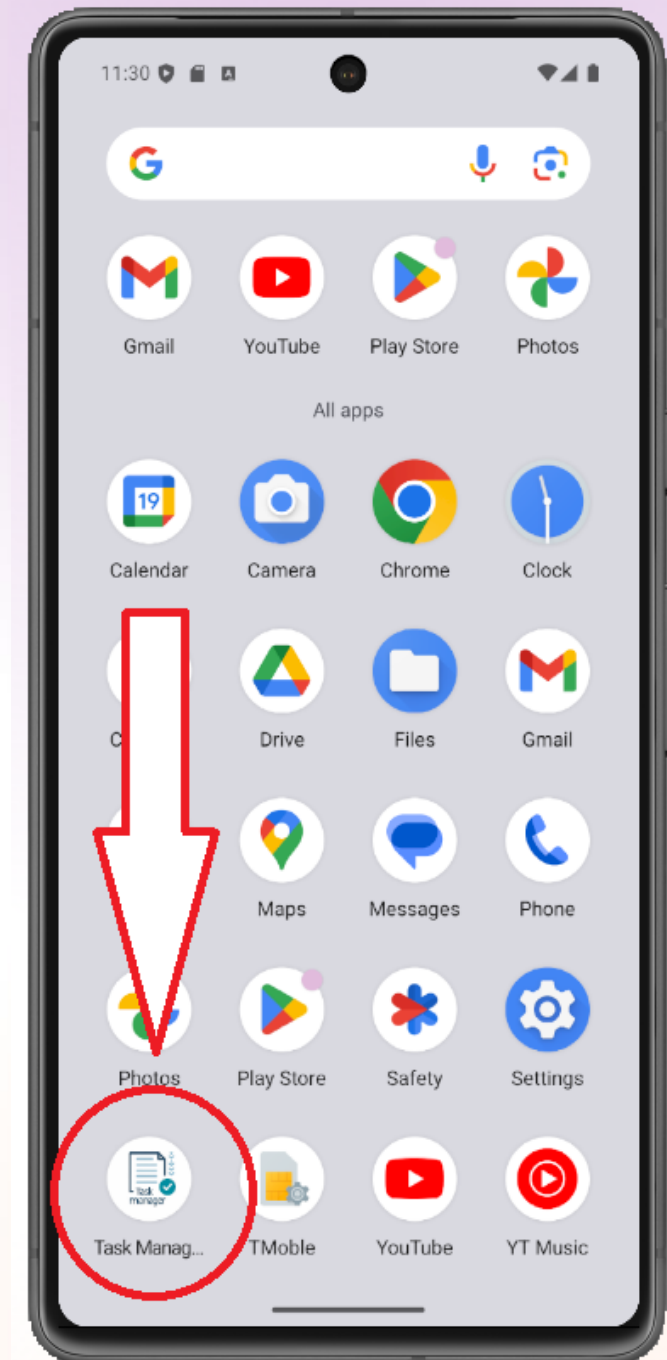


## APK Deployment

Successfully generated the final APK, named Task-Manager.APK, ready for distribution, ensuring it meets all necessary quality standards.



Task\_Manager.APK



# Results of the Task Manager Mobile App



## 1 Secure Login and Registration

Users can safely register and access their accounts, ensuring their data is protected.



## 2 Comprehensive Task Management

The app supports the creation, editing, deletion, and completion of tasks, providing users with full control over their task lists.



## 3 Real-Time Updates

Tasks are synchronized across devices using Firebase, allowing users to access their tasks from any location seamlessly.



## 4 Effective Notifications

The app provides timely alerts for due dates and location-based tasks, helping users stay on track with their responsibilities.



## 5 User-Friendly Interface

An intuitive navigation system is provided, featuring list, calendar, and map-based task views for easy access and management.



## 6 Scalable and Reliable

The Firebase backend ensures high performance and scalability, accommodating more users and tasks without compromising speed.



# Conclusion

The Task Manager Mobile App addresses common task management challenges by combining essential features like real-time updates, geolocation reminders, and secure authentication. Its intuitive design and robust backend make it a valuable tool for improving productivity.

# Future Work Overview

## Offline Mode

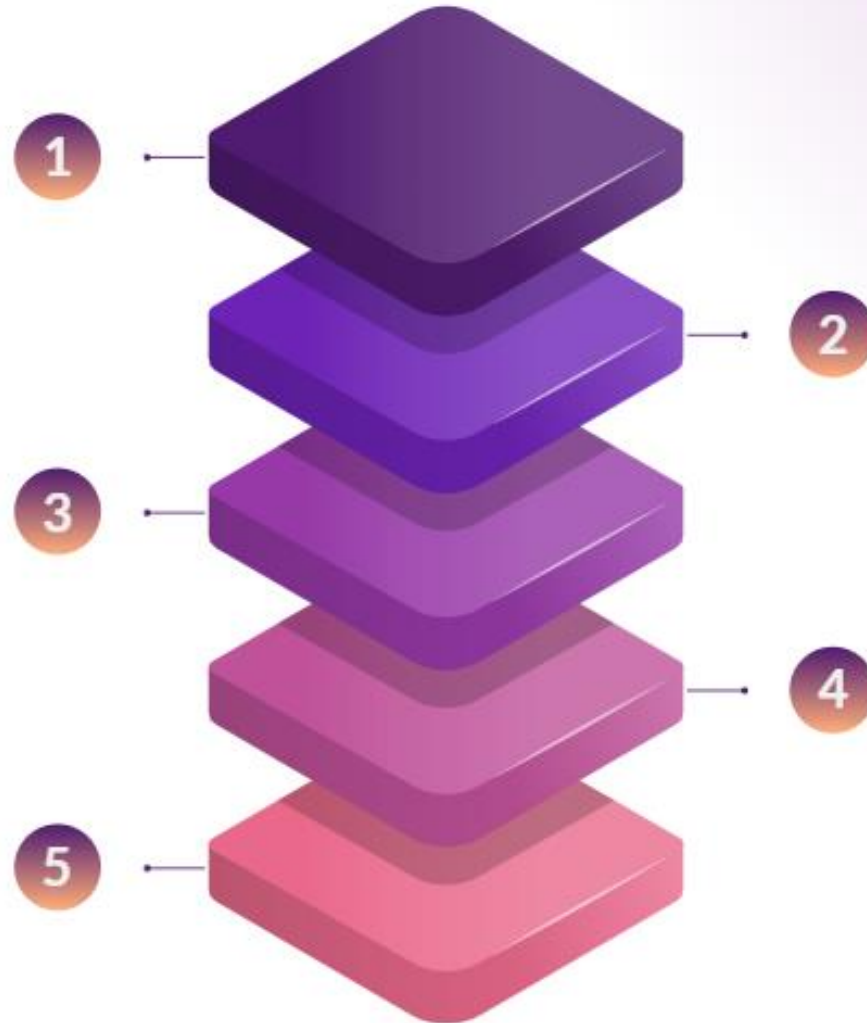
Allow users to manage tasks without an internet connection, with data syncing automatically upon reconnection, ensuring seamless productivity.

## AI-Powered Features

Integrate smart task prioritization that analyzes user behavior and provides personalized productivity insights for improved task management.

## App Store Deployment

Publish the application on the Google Play Store for global distribution and ensure users receive automatic updates



## Cross-Platform Expansion

Develop iOS and web versions of the application to enhance accessibility and user experience

## Collaboration Tools

Introduce features such as task-sharing and group notifications to facilitate teamwork and enhance

The image features a central white circle containing the text "Thank You!". The background consists of several overlapping, semi-transparent circles in shades of purple, pink, and orange. Two small, solid purple dots are positioned on the outer edge of the central circle, one in the top-left and one in the bottom-right.

**Thank You!**