Name:

   Muhammad Masood Hussain.

Reg no:

   SP23-BSE-119
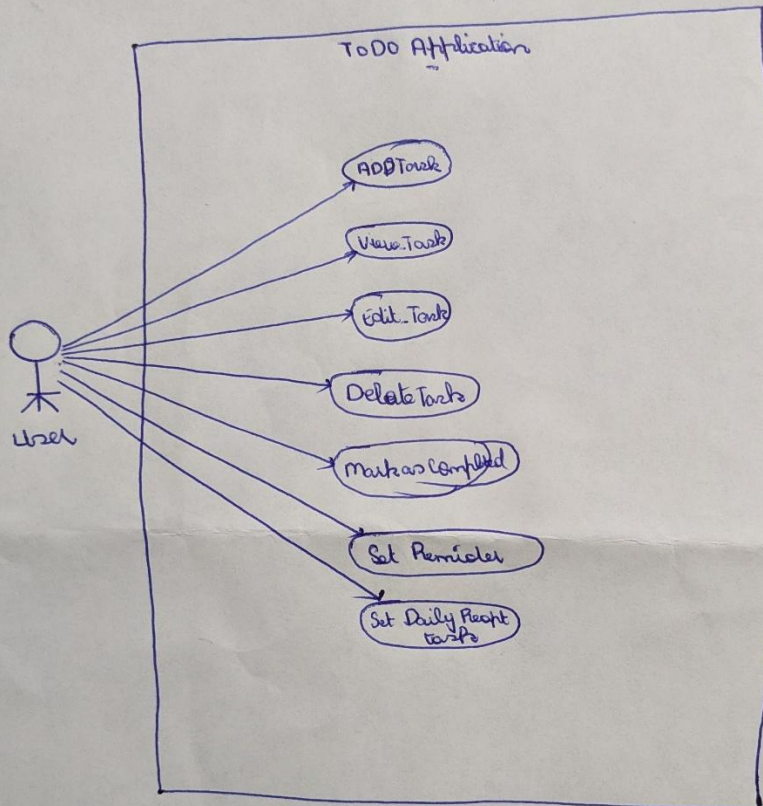
Section :

   BSE-5A.

Contents

MID LAB

CASE STUDY:

TODO Application A very simple mobile app that lets you add action items for the day along with schedule and reminder options (ringing, notification, SMS or email). You can also add daily repeating action items one time, and it remains for infinite days. for example, Prayers, Zikr etc.

USECASE DIAGRAM:

Name:- Muhammad Masood Hussain
Section :- BSE 5A
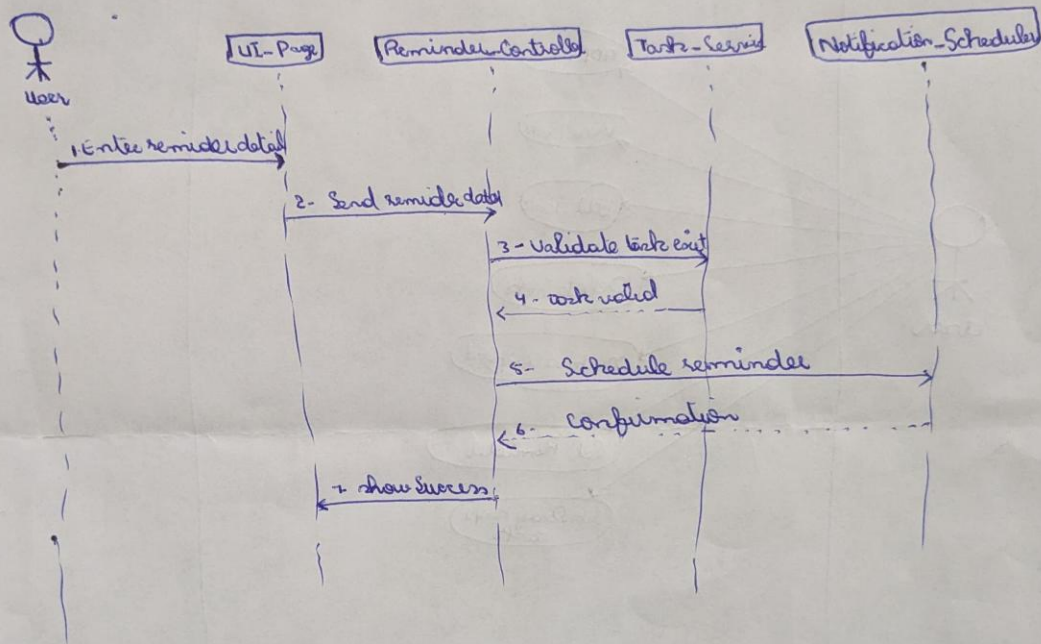Roll No:- SP23-BSE-119

TODO Application

ADD Task

View Task

Edit Task

Delete Task

Mark as Completed

Set Reminder

Set Daily Recept tasks

User

Communication diagram

Scenario: Set Reminder
1. Get task info
2. Save the reminder settings
3. Schedule the notification.

Participants: User, UI-Page, Reminder-Controller, Task-Service, Notification-Scheduler

1. Enter reminder detail (User → UI-Page)
2. Send reminder data (UI-Page → Reminder-Controller)
3. Validate task exist (Reminder-Controller → Task-Service)
4. Task valid (Task-Service → Reminder-Controller)
5. Schedule reminder (Reminder-Controller → Notification-Scheduler)
6. Confirmation (Notification-Scheduler → Reminder-Controller)
7. Show success (Reminder-Controller → UI-Page)

Name of principles/pattern

MVC (Model-View-Controller) Pattern

- Separates the application into **Model (data/services)**, **View (UI)**, and **Controller (logic/flow)**.

- Makes the app more **modular, testable, and maintainable**.

SOLID Principles

- Especially:

  - **Single Responsibility Principle**: Each class/component should handle only one responsibility (e.g., task manager, reminder scheduler).

  - **Open/Closed Principle**: Easy to extend the app (e.g., add new reminder types) without modifying existing code.

  - **Dependency Inversion Principle**: Allows better decoupling using interfaces between modules like UI and backend.

DRY Principle (Don't Repeat Yourself)

- Ensures reusable logic for tasks, reminders, and notifications, reducing redundancy in code.

Scenario: Set Reminder

1- Get task info
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