



AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

SOFTWARE ENGINEERING (SPRING 2023-2024)

Group 2: Section: B

Project Proposal Title:

Tracking Mental Health Through Web and Mobile Check-Ins

Report No.: 4

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System Design Specification

Case Study:

A patient logs into the Mental Health Tracker app with their unique credentials. The system validates the login details and grants access. Upon login, the patient is prompted to complete a self-assessment questionnaire to evaluate their mental health. The completed assessment is stored, and based on the responses, the app suggests a personalized mindfulness exercise for skill development.

The app tracks the patient's progress, and their mood is logged post-exercise. The app's algorithm analyzes the mood log and identifies a pattern that suggests the patient may benefit from professional assistance. It triggers an alert to their assigned counsellor .

The counsellor receives the notification and reviews the patient's recent assessments and mood logs within the app. They decide to schedule a remote counseling session using the app's built-in scheduling tool. After the counseling session, the counsellor updates the patient's treatment plan directly in the app and sets up a follow-up appointment.

Simultaneously, the admin logs into the app to update the mental health resource content, ensuring all articles and materials are up-to-date based on the latest user feedback. They use the admin panel to manage user accounts and adjust security settings to protect patient data.

The notification manager oversees the app's reminder system, ensuring that weekly check-in reminders are correctly configured and sent to all users, including the patient, to promote consistent engagement with the app.

As the patient completes their weekly check-ins and engages with the suggested activities, the app automatically grants them achievement badges. These badges are part of the reward system designed to motivate users and are visible on the patient's profile, celebrating their commitment to their mental health journey.

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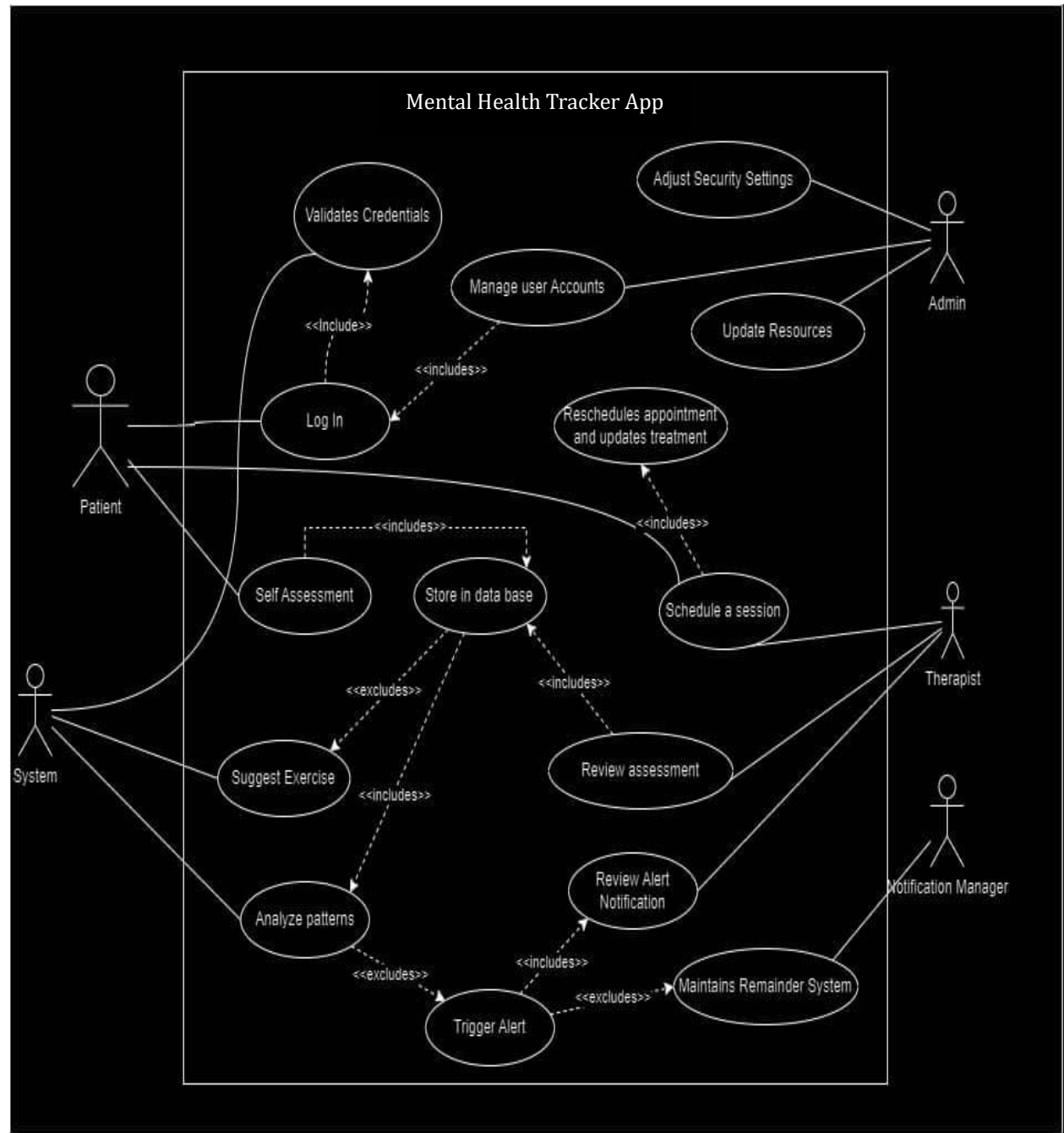
    usecaseDiagram
        actor Patient
        actor Admin
        actor Therapist
        actor NotificationManager as Notification Manager
        actor System

        usecase UC1[Validates Credentials]
        usecase UC2[Log In]
        usecase UC3[Manage user Accounts]
        usecase UC4[Adjust Security Settings]
        usecase UC5[Update Resources]
        usecase UC6[Self Assessment]
        usecase UC7[Store in data base]
        usecase UC8[Suggest Exercise]
        usecase UC9[Analyze patterns]
        usecase UC10[Trigger Alert]
        usecase UC11[Review assessment]
        usecase UC12[Reschedules appointment and updates treatment]
        usecase UC13[Schedule a session]
        usecase UC14[Review Alert Notification]
        usecase UC15[Maintains Remainder System]

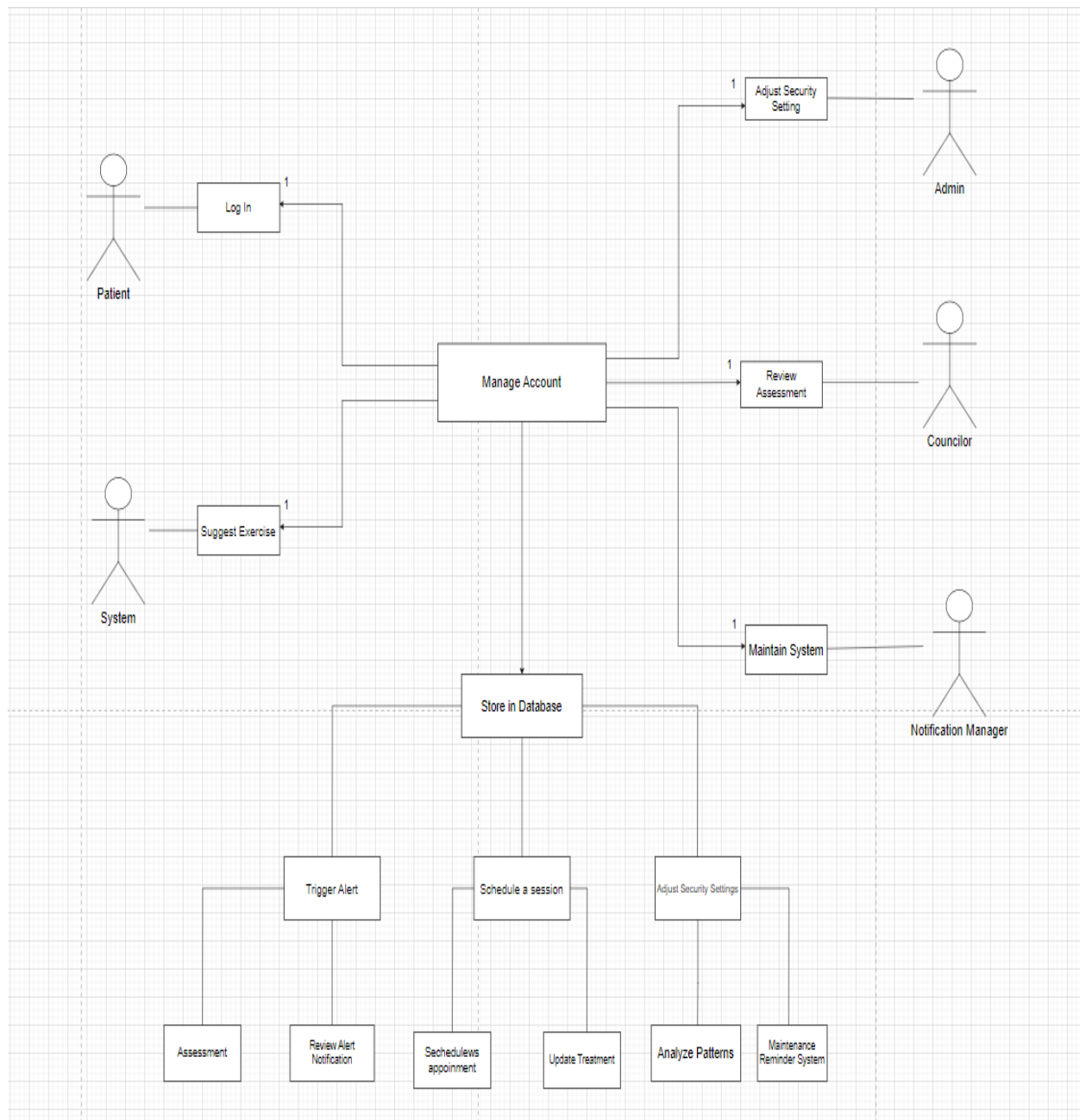
        Patient -- UC2
        Patient -- UC6
        Patient -- UC9
        Patient -- UC10
        Admin -- UC1
        Admin -- UC3
        Admin -- UC4
        Admin -- UC5
        Therapist -- UC7
        Therapist -- UC11
        Therapist -- UC12
        Therapist -- UC13
        Therapist -- UC14
        NotificationManager -- UC15
        System -- UC8

        UC2 -.-> UC1 : <<include>>
        UC3 -.-> UC2 : <<include>>
        UC6 -.-> UC7 : <<include>>
        UC7 -.-> UC12 : <<include>>
        UC7 -.-> UC11 : <<include>>
        UC7 -.-> UC10 : <<include>>
        UC8 -.-> UC7 : <<exclude>>
        UC8 -.-> UC9 : <<include>>
        UC9 -.-> UC10 : <<exclude>>
        UC10 -.-> UC14 : <<include>>
        UC10 -.-> UC15 : <<exclude>>
        UC12 -.-> UC13 : <<include>>
    
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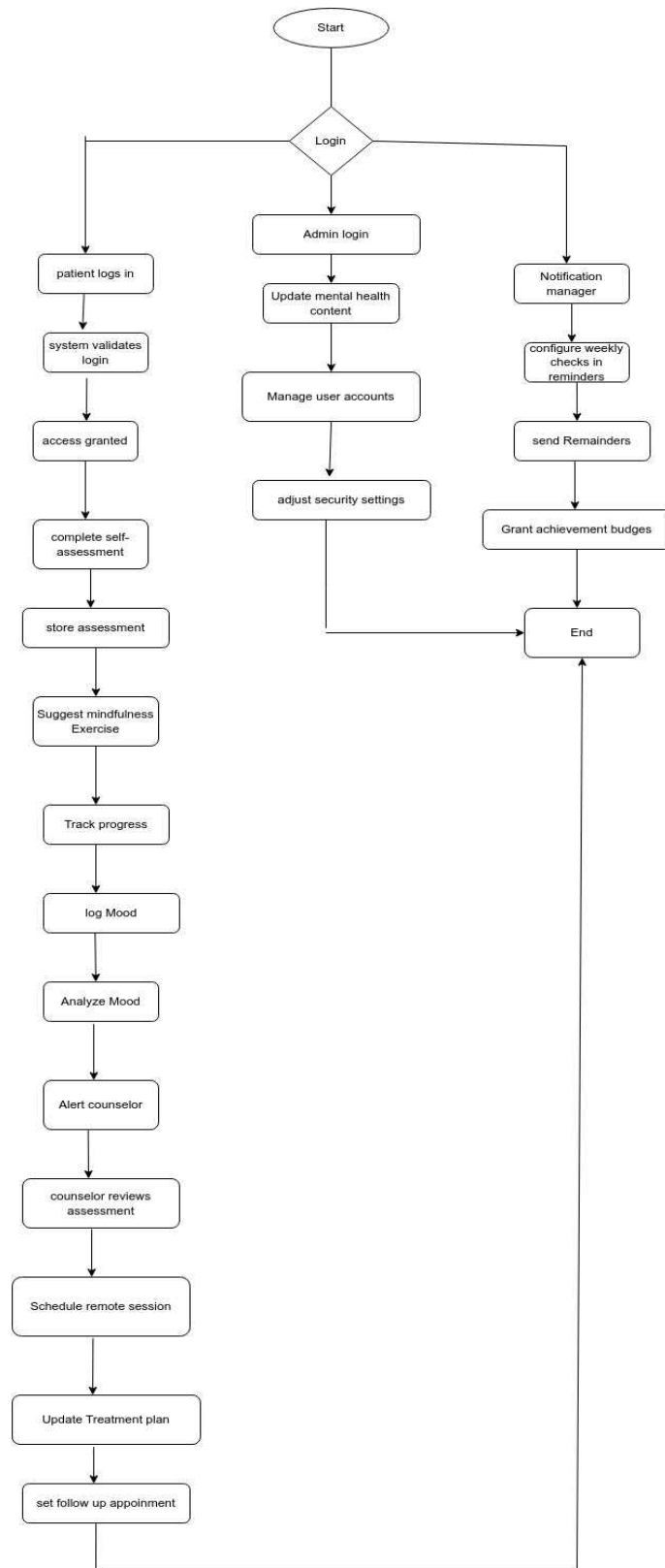
The diagram illustrates the functional requirements of a Mental Health Tracker App. It features five actors: Patient, Admin, Therapist, Notification Manager, and System. The app's use cases are represented by ovals, and their relationships are shown with solid lines (associations) and dashed lines with stereotyping (includes, excludes). Key relationships include: Patient using Log In, Self Assessment, Suggest Exercise, and Trigger Alert; Admin managing user accounts and security; Therapist scheduling sessions and reviewing assessments; and the System suggesting exercises. The diagram also shows complex dependencies such as 'Log In' including 'Validates Credentials', and 'Store in data base' including 'Reschedules appointment and updates treatment', 'Review assessment', and 'Trigger Alert'.



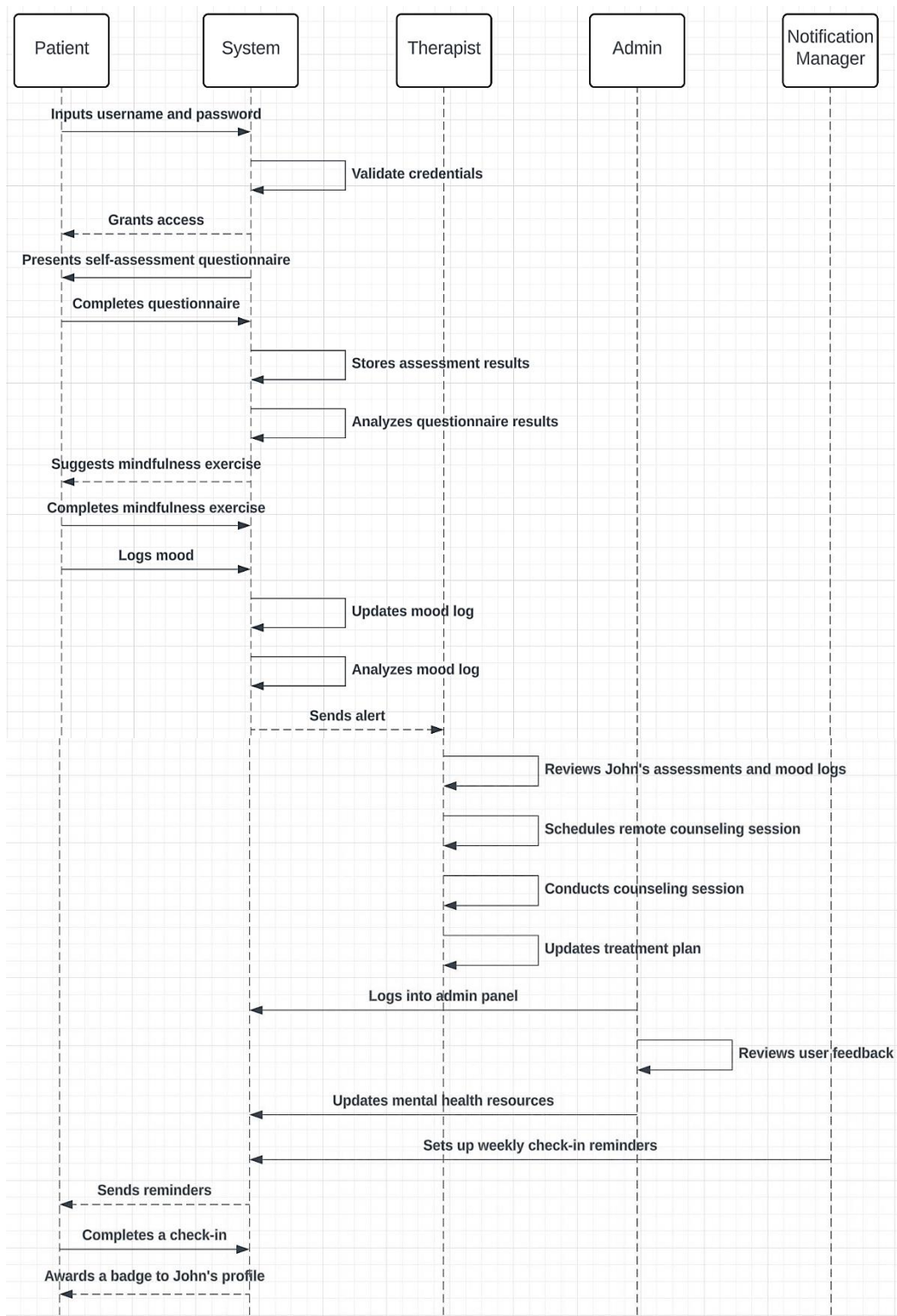
2. Class Diagram:



3. Activity Diagram:



4. Sequence Diagram:



Entity Relationship (ER) diagram:

