MOODMATE - FINAL PROJECT REPORT

- MoodMate - Final Project Report

AI-Powered Mental Wellness Companion

Project Duration: January 2026 - February 2026

Team: Mobile Application Development

Document Version: 1.0

Last Updated: February 4, 2026

Table of Contents

---

1. Executive Summary

MoodMate is a cross-platform mobile application designed to help individuals track, understand, and improve their emotional well-being through AI-powered mood analysis. The application addresses the growing need for accessible mental health support by combining intelligent mood tracking with professional counsellor access.

Key Features Delivered

- **AI-Powered Mood Analysis:** Automatic emotion detection using natural language processing (Mistral AI/OpenAI)

- **Personalized Recommendations:** Context-aware suggestions based on detected emotional states

- **Mood Trend Visualization:** Interactive charts displaying emotional patterns over time

- **Professional Support Integration:** Direct messaging with licensed counsellors

- **Cross-Platform Availability:** Supports iOS, Android, and Web platforms

- **Secure Data Management:** Role-based access control with Firebase security

Project Impact

MoodMate successfully delivers a comprehensive mental wellness solution that empowers users to:

- Gain deeper self-awareness of emotional patterns

- Receive timely, personalized support and recommendations

- Access professional counselling when needed

- Track progress and identify triggers through visual analytics

---

2. Stakeholders and Users

2.1 Primary Stakeholders

Stakeholder	Role	Interest
End Users	Primary beneficiaries	Seeking tools for emotional self-awareness and mental wellness tracking
Mental Health Professionals	Service providers	Platform to extend reach and provide remote support to clients
Healthcare Organizations	Potential sponsors	Interest in digital mental health solutions for employee wellness programs
Development Team	Implementation	Building and maintaining the application
Project Sponsors	Funding	Return on investment and market viability

2.2 User Categories and Profiles

User Category 1: General Users (Individuals)

Demographics:

- **Age Range:** 18-45 years

- **Tech Proficiency:** Comfortable with mobile applications

- **Context:** Professionals, students, or individuals interested in mental wellness

Primary Needs:

1. **Self-Awareness:** Tools to recognize and understand emotional patterns

2. **Quick Journaling:** Simple, fast method to log daily feelings without complex interfaces

3. **Actionable Insights:** Meaningful feedback rather than raw data

4. **Visual Trends:** Easy-to-understand charts showing mood patterns over time

5. **Privacy Assurance:** Confidence that personal emotional data is secure

6. **Professional Access:** Option to reach out to counsellors when needed

User Goals:

- Log daily emotions in under 2 minutes

- Understand what triggers positive or negative emotional states

- Receive helpful tips to improve mood

- Track emotional progress over weeks and months

- Connect with professional support during difficult periods

Pain Points Addressed:

- Lack of insight into emotional patterns

- Difficulty identifying triggers for mood changes

- Limited access to affordable mental health support

- Inconsistent mood tracking habits due to lack of engagement

- Privacy concerns with digital mental health tools

Persona Example: Maya (28, Marketing Professional)

> *Maya experiences work-related stress and struggles to identify what specifically triggers her anxiety. She tried paper journaling but found it time-consuming and difficult to spot patterns. She values data visualization and wants actionable suggestions she can implement immediately. Maya needs a tool that respects her privacy while providing intelligent analysis without requiring lengthy entries.*

User Category 2: Mental Health Counsellors

Demographics:

- **Professional Status:** Licensed therapists, counsellors, or mental health practitioners
- **Experience Level:** 3-20 years in practice
- **Practice Setting:** Private practice, clinics, or digital health platforms

Primary Needs:

1. **Client Overview:** Quick access to client emotional patterns before sessions
2. **Efficient Communication:** Secure messaging channel with clients between appointments
3. **Progress Tracking:** Tools to monitor client well-being over time
4. **Consent-Based Access:** Ethical access to client data with proper permissions
5. **Time Management:** Efficient dashboard to manage multiple client relationships
6. **Professional Security:** HIPAA-aware data handling practices

User Goals:

- View comprehensive mood summaries for assigned clients
- Respond to client messages in a timely manner
- Identify clients who may need immediate attention
- Track treatment progress through objective mood data
- Maintain professional boundaries with secure communication

Pain Points Addressed:

- Limited visibility into client emotional state between sessions

- Difficulty tracking client progress objectively

- Inefficient communication methods (email, phone calls)

- Lack of tools for remote client monitoring

- Concerns about data security and confidentiality

Persona Example: Dr. James (42, Licensed Therapist)

> *Dr. James manages 15-20 clients remotely and in-person. He finds it challenging to stay informed about client emotional states between weekly sessions. He needs efficient tools to identify when clients are struggling and to provide timely support. Dr. James values comprehensive mood summaries that help him prepare for sessions and track treatment effectiveness over time.*

User Category 3: System Administrators (Secondary)

Role: Application management and user support

Primary Needs:

1. Monitor system health and user activity

2. Manage user roles and permissions

3. Handle technical support requests

4. Ensure compliance with security standards

2.3 User Needs Matrix

User Type	Critical Needs	Features Addressing Needs
General Users	Quick mood logging	Simple text-based journaling interface
	Pattern recognition	AI-powered mood analysis
	Actionable guidance	Personalized recommendations
	Visual insights	Interactive mood trend charts
	Privacy & security	Firebase authentication + encryption
	Professional support	Counsellor contact system
Counsellors	Client overviews	Mood summary dashboard
	Secure messaging	Real-time chat with end-to-end security
	Progress monitoring	Historical mood trend access
	Client management	Assignment and request tracking system
	Professional tools	Role-based access with consent mechanisms

3. UML Use Case Diagram

3.1 Actor Definitions

| General User | → Individual seeking emotional wellness tracking |

| Counsellor | → Mental health professional providing support |

| System (AI) | → Automated mood analysis and recommendation engine |

3.2 Use Case Diagram

```
                          ┌──────────────────────────────────────┐
                          │         MoodMate System              │
                          │                                      │
                          │   ┌──────────────────────────┐       │
            ┌─────────┐   │   │   UC-01: Register Account │       │
            │         │───┼──→│                          │       │
            │         │   │   └──────────────────────────┘       │
            │         │   │                                      │
            │         │   │   ┌──────────────────────────┐       │
     General│         │───┼─→ │   UC-02: Login           │       │
   ←────────┤         │   │   │                          │       │
       User │         │   │   └──────────────────────────┘       │
   │        │         │   │                                      │
   │        │         │   │                                      │
   │        │         │   │   ┌──────────────────────────┐       │
   │        │         │───┼─→ │   UC-03: Record Daily Mood│       │
   │        │         │   │ │ │        (Text Journal)     │ │     │
   │        │         │   │   └──────────────────────────┘       │
   │        │         │   │        │                             │
   │        │         │   │        │ <<include>>                 │
   │        │         │   │        ▼                             │
   │        │         │   │   ┌──────────────────────────┐       │
   │        │         │   │ │ │   UC-04: AI Mood Analysis │ ←─────┤
   │        │         │   │ │ │        (NLP)              │ │ │   │
   │        │         │   │   └──────────────────────────┘   │   │
   │        │         │   │        │                         │   │
   │        │         │   │        │ <<extend>>              │   │
   │        │         │   │        ▼                         │   │
   │        └─────────┘   │   ┌──────────────────────────┐   │   │
   │                      │   │ UC-05: Generate          │   │   │
   │                      │   │      Recommendations     │   │   │
   │                      │
```

General User

Counsellor

UC-06: View Mood History
& Trends

UC-07: Contact Counsellor

UC-08: View User Mood
Summary

UC-09: Provide Advice
to User

UC-10: Privacy & Data
Protection

```
        |              |←————————|  |                    |   | |
|
        | System   |       | ┌──────────────────────────┐ |   | |
|
        |  (AI)    |———————|—————————————————————————————————┘
|
        |          |       |
|
        └──────────┘                                    ┌──┘
  └────────────────────────────────────────┘

                                          ▲
                                          |
                                          |
                              ┌───────────────────────┐
                              |  Counsellor           |
                              |    Login              |
                              └───────────────────────┘
```
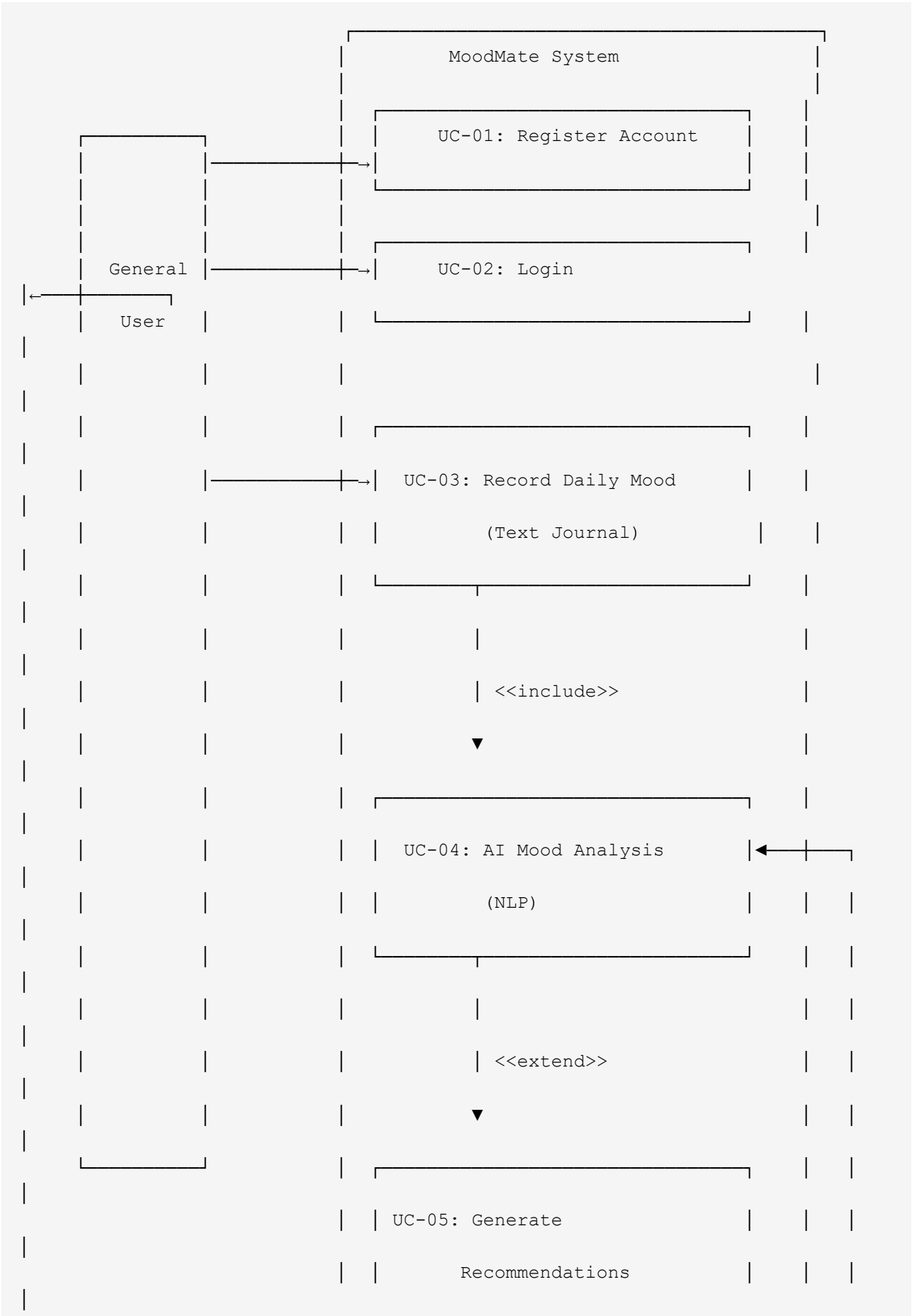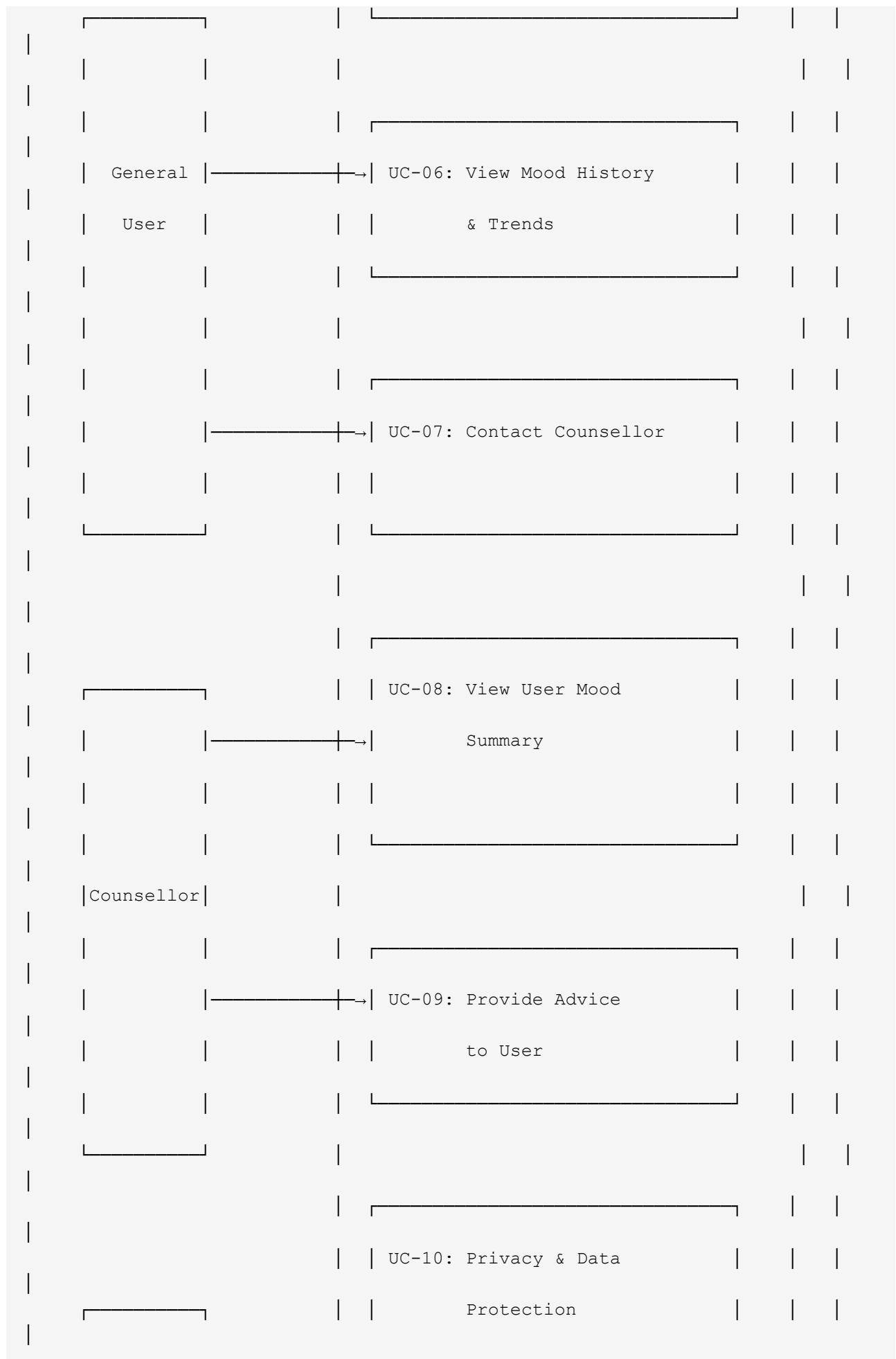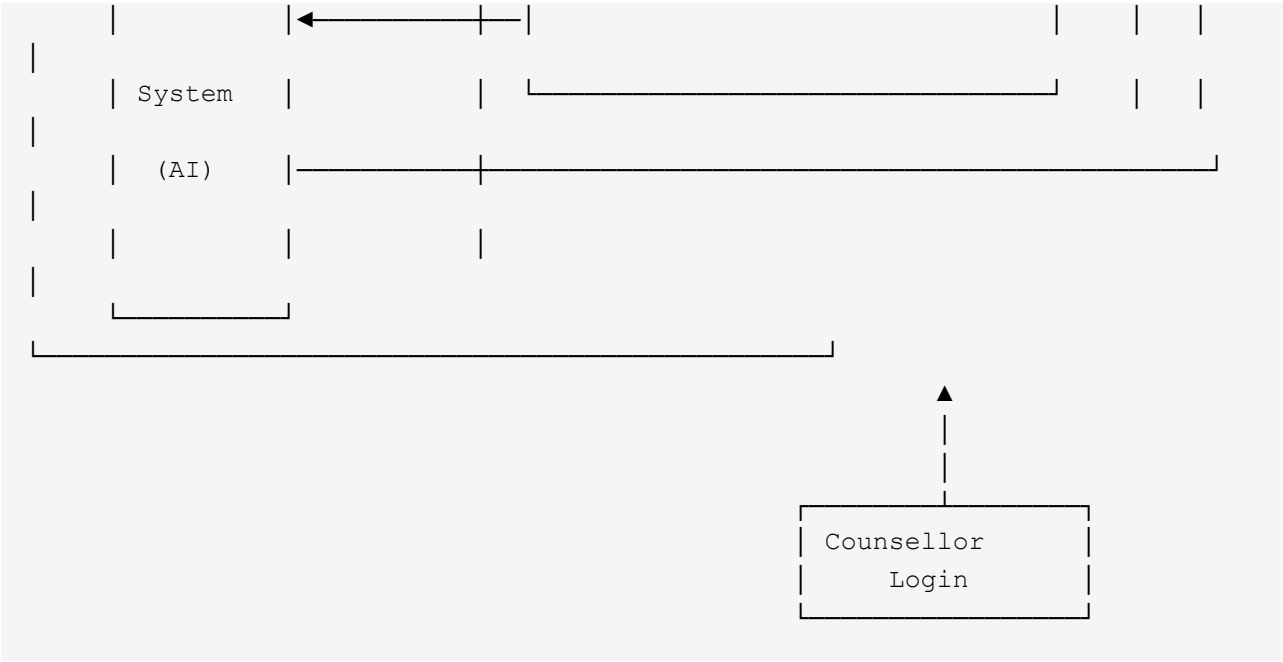
3.3 Use Case Summary Table

UC ID	Use Case Name	Primary Actor	Description
UC-01	Register Account	General User	Create new account to access MoodMate
UC-02	Login	User/Counsellor	Authenticate and access the system
UC-03	Record Daily Mood	General User	Log emotional state via text journal entry
UC-04	AI Mood Analysis	System (AI)	Automatically analyze mood from journal text
UC-05	Generate Recommendations	System (AI)	Provide personalized tips based on detected mood
UC-06	View Mood History & Trends	General User	Access historical mood data with visualizations
UC-07	Contact Counsellor	General User	Request support from mental health professional
UC-08	View User Mood Summary	Counsellor	Review client emotional patterns and history
UC-09	Provide Advice to User	Counsellor	Send professional guidance via secure messaging
UC-10	Privacy & Data Protection	System	Ensure emotional data security and access control

4. System Flow and Navigation Structure

4.1 Overall System Architecture Flow

```
┌──────────────────────────────────────────────────────────────┐
│                     User Entry Point                         │
│                   (Mobile App / Web App)                     │
└──────────────────────────────────────────────────────────────┘
                          │
                          ▼
┌──────────────────────────────────────────────────────────────┐
│                  Firebase Authentication                     │
│                 (Email/Password + Session)                   │
└──────────────────────────────────────────────────────────────┘
            │                           │
            ▼                           ▼
┌───────────────────────┐     ┌───────────────────────┐
│     User Role         │     │   Counsellor Role     │
│     Detected          │     │     Detected          │
└───────────────────────┘     └───────────────────────┘
            │                           │
            ▼                           ▼
┌───────────────────────┐     ┌───────────────────────┐
│   User Dashboard      │     │  Counsellor Dashboard │
│    - Mood Entry       │     │   - Assigned Users    │
│    - History          │     │   - Mood Summaries    │
│    - Trends           │     │   - Messages          │
│    - Counsellor       │     │   - Support Requests  │
└───────────────────────┘     └───────────────────────┘
            │                           │
            ▼                           ▼
┌──────────────────────────────────────────────────────────────┐
│              Cloud Firestore Database                        │
│   - mood_entries                                             │
│   - users                                                    │
│   - messages                                                 │
│   - counsellors                                             │
│   - support_requests                                        │
│   - counsellor_assignments                                  │
└──────────────────────────────────────────────────────────────┘
                          │
                          ▼
┌──────────────────────────────────────────────────────────────┐
│              Firebase Cloud Functions                        │
│   - analyzeMood (Mistral AI/OpenAI)                         │
│   - generateRecommendations                                 │
│   - sendNotifications (FCM)                                  │
└──────────────────────────────────────────────────────────────┘
```

4.2 User Navigation Flow (General User)

```
                        | App Launch |

                     | Auth Check      |
                     | (Logged In?)    |

              No                  Yes

                | Login/  |
                |Register |

                       | Home Screen     |
                       | - Quick Stats   |
                       | - Today Entry   |

   | New Mood  |   | Mood    |   | Mood    |   | Counsellor |
   |  Entry    |   | History |   | Trends  |   |  Contact   |

   | Text Journal  |                           | Counsellor List |
   | Input Screen  |

        | Submit                              | Request Support |

   | AI Analysis   |
   | Processing    |                           | Chat/Messages   |

   | Analysis Result   |
   | + Recommendations |
```

```
        ▼                │
┌───────────────┐        │
│  Entry List   │        │
│  - Filter     │        │
│  - Search     │        │
└───────────────┘        │
        │                │
        ▼                │
┌───────────────┐        │
│ Entry Detail  │        │
│ - Full Text   │        │
│ - AI Results  │        │
│ - Edit/Delete │        │
└───────────────┘        │
                         │
                         ▼
              ┌─────────────────────┐
              │   Trends Screen     │
              │  - Line Chart       │
              │  - Bar Chart        │
              │  - Calendar View    │
              │  - Date Filter      │
              └─────────────────────┘
```

4.3 Counsellor Navigation Flow

```
                        ┌──────────────────┐
                        │  App Launch      │
                        └──────────────────┘
                                  │
                        ┌──────────────────┐
                        │  Auth Check      │
                        │  (Counsellor Login) │
                        └──────────────────┘
                                  │
                        ┌──────────────────┐
                        │ Counsellor Dashboard │
                        │ - Pending Requests   │
                        │ - Active Users       │
                        │ - Messages Count     │
                        └──────────────────┘
                          │        │        │
              ┌───────────┘        │        └───────────┐
              │                    │                    │
              ▼                    ▼                    ▼
      ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
      │ Support      │    │ Assigned     │    │ Messages     │
      │ Requests List│    │ Users List   │    │ Inbox        │
      └──────────────┘    └──────────────┘    └──────────────┘
              │                    │                    │
              ▼                    ▼                    ▼
      ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
      │ Accept/Reject│    │ User Mood    │    │ Conversation │
      │ Request      │    │ Summary Screen│   │ Thread       │
      └──────────────┘    └──────────────┘    └──────────────┘
              │                    │                    │
              │ Accept             │                    │
              │                    ▼                    │
              │            ┌──────────────┐             │
              └───────────▶│ - Mood Trends │            │
                           │ - Recent Entries│          │
                           │ - AI Analysis │            │
                           │ - History Graph│           │
                           └──────────────┘             │
                                                        ▼
                                                ┌──────────────┐
                                                │ Send Reply   │
                                                │ - Text Message│
                                                │ - Advice/Tips │
                                                └──────────────┘
```
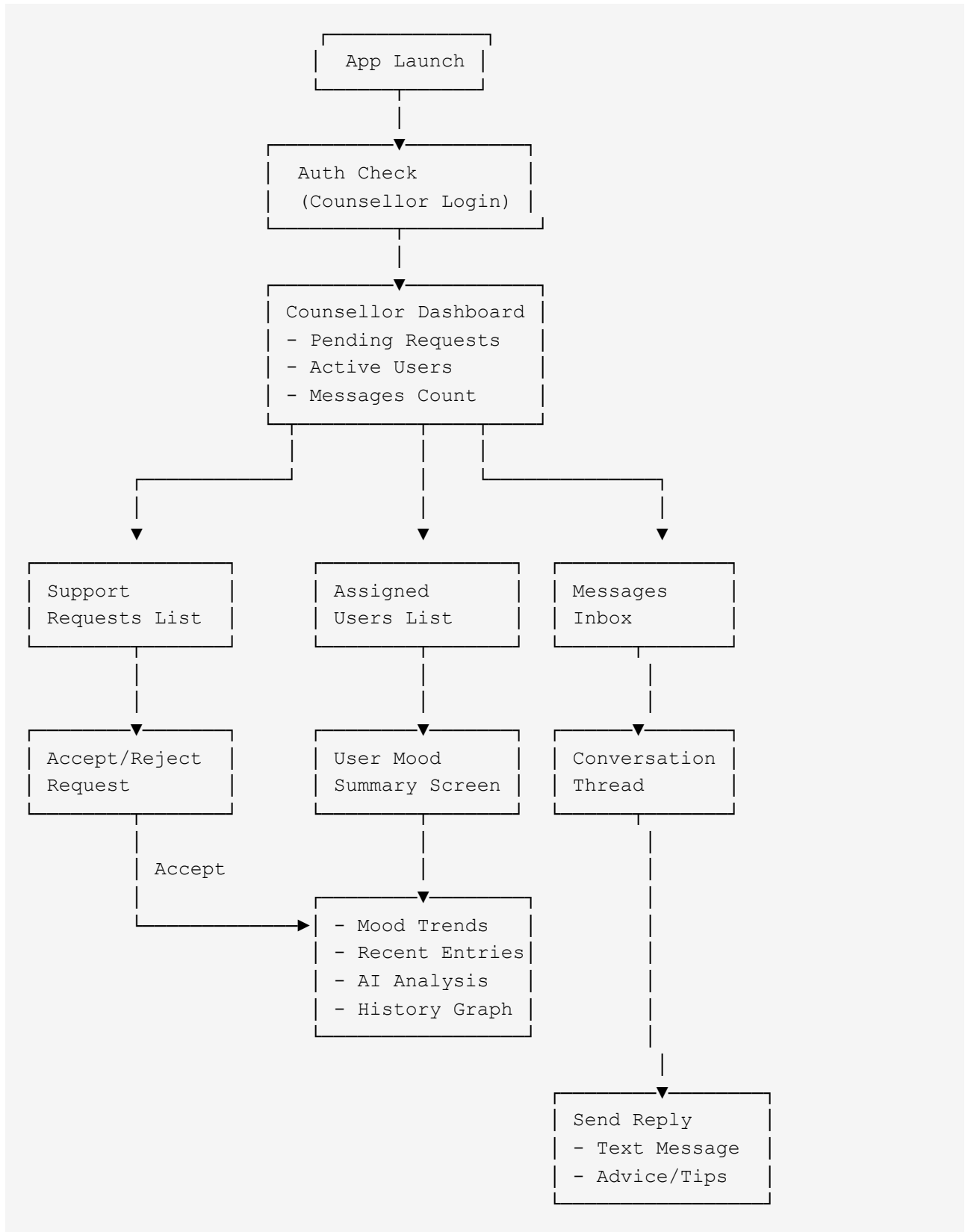
4.4 Data Flow: Mood Entry Process

```
  ┌─────────────┐
  │    User     │
  │  Types Text │
  └─────────────┘
        │  "I'm feeling anxious about work today..."
        │
        ▼
  ┌─────────────────┐
  │  Flutter App    │
  │ (mood_entry_screen) │
  └─────────────────┘
        │  Submit Entry
        │
        ▼
  ┌──────────────────────────┐
  │  Firestore               │
  │  /mood_entries/{entryId} │
  │  - userId                │
  │  - text                  │
  │  - date                  │
  │  - timestamp             │
  └──────────────────────────┘
        │  Firestore Trigger
        │
        ▼
  ┌──────────────────────────────┐
  │  Cloud Function              │
  │  analyzeMood()               │
  │  - Calls Mistral AI/OpenAI API │
  │  - Sends text for NLP analysis │
  └──────────────────────────────┘
        │
        ▼
  ┌──────────────────────────────┐
  │  AI Response                 │
  │  {                           │
  │     emotion: "anxious",      │
  │     confidenceScore: 0.87,   │
  │     explanation: "..."       │
  │  }                           │
  └──────────────────────────────┘
        │
        ▼
  ┌──────────────────────────────┐
  │  Cloud Function              │
  │  generateRecommendations()   │
  │  - Maps emotion to prompts   │
  │  - Generates personalized tips │
  └──────────────────────────────┘
        │
```

```
             |
             ▼
┌─────────────────────────────┐
│  Update Firestore Entry     │
│  - emotion: "anxious"       │
│  - confidenceScore: 0.87    │
│  - recommendations: [       │
│      "Try deep breathing...",│
│      "Take a short walk..." │
│    ]                        │
└─────────────────────────────┘
             |
             ▼
┌─────────────────────────────┐
│  User Sees Results          │
│  - Emotion detected         │
│  - AI-generated suggestions │
│  - Option to view history   │
└─────────────────────────────┘
```

4.5 Information Architecture

```
MoodMate Application
|
├── Authentication
|    ├── Register
|    ├── Login
|    └── Password Reset
|
├── User Module
|    ├── Home Dashboard
|    |    ├── Today's Entry Status
|    |    ├── Recent Mood Summary
|    |    └── Quick Actions
|    |
|    ├── Mood Entry
|    |    ├── Text Journal Input
|    |    ├── Submit Entry
|    |    └── View Analysis Results
|    |
|    ├── Mood History
|    |    ├── Entry List (Paginated)
|    |    ├── Date Filter
|    |    ├── Search Functionality
|    |    └── Entry Details View
|    |
|    ├── Mood Trends
|    |    ├── Line Chart (Emotion over time)
|    |    ├── Bar Chart (Emotion frequency)
|    |    ├── Calendar Heatmap
|    |    └── Export/Share Options
|    |
|    └── Counsellor Support
|         ├── Counsellor Directory
|         ├── Request Support
|         └── Message Conversations
|
└── Counsellor Module
     ├── Dashboard
     |    ├── Pending Support Requests
     |    ├── Active Users Count
     |    └── Recent Messages
     |
     ├── Assigned Users
     |    └── User Mood Summary
     |         ├── Mood Trends Chart
     |         ├── Recent Entries
     |         ├── AI Analysis Overview
     |         └── Historical Data
     |
     └── Messages
```

```
        ├──  Conversation Threads
        ├──  Send Reply
        └──  Notification Management
```

---

5. Low-Fidelity UI Design

5.1 Design Philosophy (Low-Fi)

Low-fidelity designs focus on:

- **Layout structure** and screen organization

- **Navigation flow** between screens

- **Content hierarchy** and information architecture

- **Core functionality** without visual polish

These wireframes served as the foundation for development planning and user flow validation.

5.2 Low-Fidelity Wireframes

5.2.1 Authentication Flow

```
┌─────────────────────────────┐      ┌─────────────────────────────┐
│   LOGIN SCREEN              │      │   REGISTER SCREEN          │
├─────────────────────────────┤      ├─────────────────────────────┤
│                             │      │                             │
│  [MoodMate Logo]            │      │  [MoodMate Logo]            │
│                             │      │                             │
│  ┌───────────────────────┐ │      │  ┌───────────────────────┐ │
│  │ Email                 │ │      │  │ Full Name             │ │
│  └───────────────────────┘ │      │  └───────────────────────┘ │
│                             │      │                             │
│  ┌───────────────────────┐ │      │  ┌───────────────────────┐ │
│  │ Password              │ │      │  │ Email                 │ │
│  └───────────────────────┘ │      │  └───────────────────────┘ │
│                             │      │                             │
│  [Forgot Password?]         │      │  ┌───────────────────────┐ │
│                             │      │  │ Password              │ │
│  ┌───────────────────────┐ │      │  └───────────────────────┘ │
│  │    LOGIN BUTTON       │ │      │                             │
│  └───────────────────────┘ │      │  ┌───────────────────────┐ │
│                             │      │  │ Confirm Password      │ │
│  Don't have account?        │      │  └───────────────────────┘ │
│  [Sign Up]                  │      │                             │
│                             │      │  [X] I agree to Terms       │
│                             │      │                             │
└─────────────────────────────┘      │  ┌───────────────────────┐ │
                                      │  │    REGISTER BUTTON    │ │
                                      │  └───────────────────────┘ │
                                      │                             │
                                      │  Already have account?      │
                                      │  [Login]                    │
                                      │                             │
                                      └─────────────────────────────┘
```

5.2.2 User Dashboard (Home Screen)

```
┌─────────────────────────────┐
│ MoodMate        [Profile] [Menu] │
├─────────────────────────────┤
│                             │
│                             │
│ Hello, Maya!                │
│ How are you feeling today?  │
│                             │
│                             │
│  ┌───────────────────────┐  │
│  │  TODAY'S ENTRY        │  │
│  │ ┌───────────────────┐ │  │
│  │ │  [+] New Entry    ││  │
│  │ └───────────────────┘ │  │
│  │                       │  │
│  └───────────────────────┘  │
│                             │
│                             │
│  ┌───────────────────────┐  │
│  │  RECENT MOOD SUMMARY  │  │
│  │ ┌───────────────────┐ │  │
│  │ │  Last 7 Days:     ││  │
│  │ │  [Graph Preview]  ││  │
│  │ │  Happy: 3  Anxious: 2 ││  │
│  │ │  Neutral: 2       ││  │
│  │ └───────────────────┘ │  │
│  │ [View Full Trends]    │  │
│  └───────────────────────┘  │
│                             │
│                             │
│  ┌───────────────────────┐  │
│  │  QUICK ACTIONS        │  │
│  │  [History] [Trends] [Help] │  │
│  └───────────────────────┘  │
│                             │
└─────────────────────────────┘
     [Home]  [Entry]  [Trends]  [More]
```
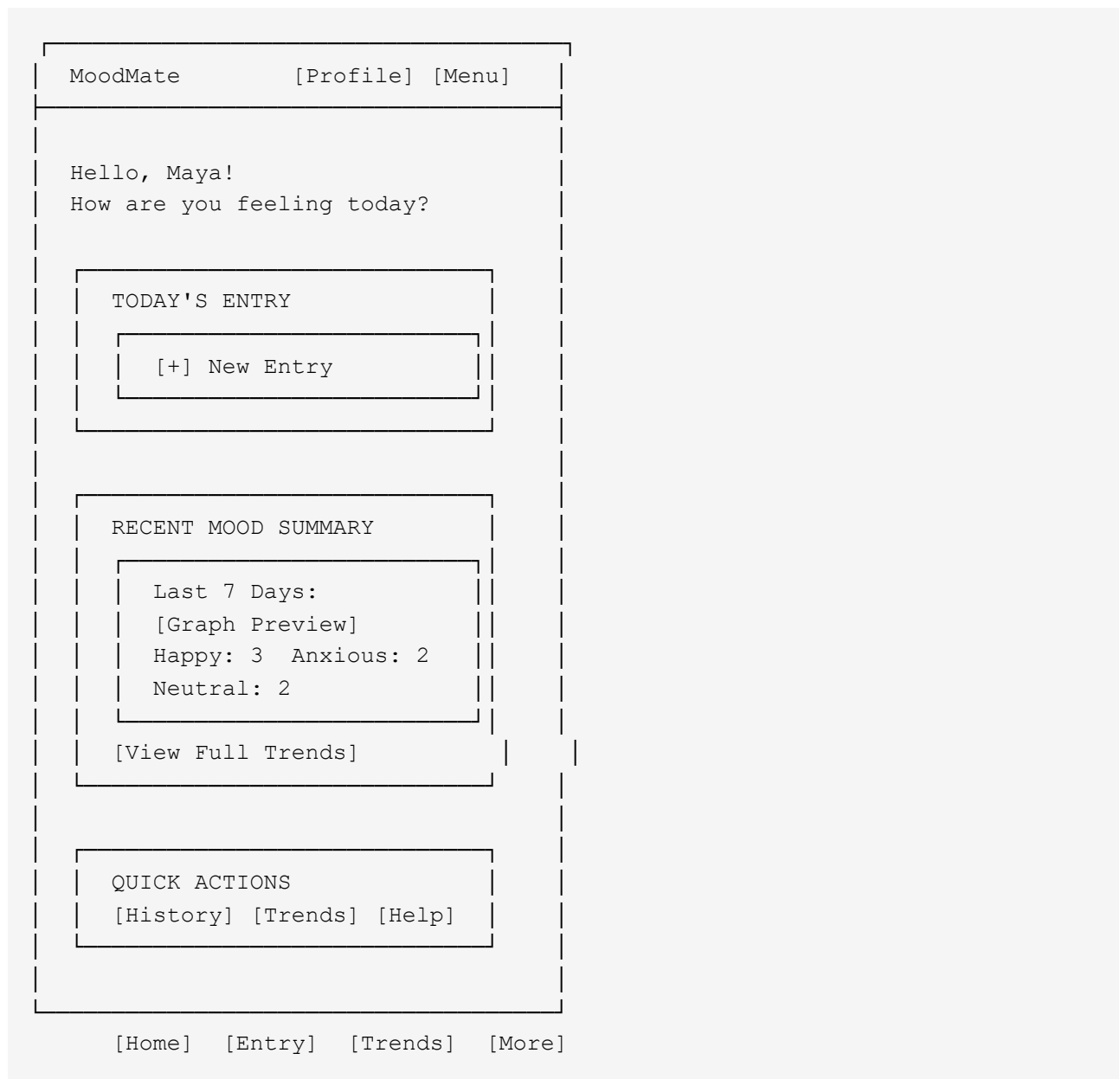
5.2.3 Mood Entry Screen

```
┌─────────────────────────────────────┐
│  [<] New Mood Entry                 │
├─────────────────────────────────────┤
│                                     │
│  Date: February 4, 2026             │
│                                     │
│   ┌─────────────────────────┐       │
│   │                         │       │
│   │   How are you feeling?  │       │
│   │                         │       │
│   │   ┌───────────────────┐ │       │
│   │   │                   ││       │
│   │   │  [Type your feelings  ││       │
│   │   │   here...]         ││       │
│   │   │                   ││       │
│   │   │                   ││       │
│   │   │                   ││       │
│   │   │                   ││       │
│   │   │                   ││       │
│   │   └───────────────────┘ │       │
│   │                         │       │
│   │   Character count: 0/500│       │
│   └─────────────────────────┘       │
│                                     │
│  Tips:                              │
│  • Describe your emotions           │
│  • Mention what happened today      │
│  • Note any triggers                │
│                                     │
│   ┌─────────────────────────┐       │
│   │     ANALYZE MY MOOD     │       │
│   └─────────────────────────┘       │
│                                     │
│  [Cancel]                           │
│                                     │
└─────────────────────────────────────┘
```

5.2.4 Analysis Results Screen

```
┌─────────────────────────────────┐
│ [<] Analysis Results            │
├─────────────────────────────────┤
│                                 │
│   ┌─────────────────────────┐   │
│   │  DETECTED EMOTION       │   │
│   │                         │   │
│   │      🥶 Anxious         │   │
│   │                         │   │
│   │  Confidence: 87%        │   │
│   └─────────────────────────┘   │
│                                 │
│   ┌─────────────────────────┐   │
│   │  YOUR ENTRY             │   │
│   │  ┌───────────────────┐  │   │
│   │  │ "I'm feeling anxious│ │   │
│   │  │  about work today..."│ │  │
│   │  └───────────────────┘  │   │
│   └─────────────────────────┘   │
│                                 │
│   ┌─────────────────────────┐   │
│   │  PERSONALIZED TIPS      │   │
│   │  ┌───────────────────┐  │   │
│   │  │ • Try deep breathing│ │   │
│   │  │   exercises        │ │   │
│   │  │                    │ │   │
│   │  │ • Take a short walk │ │  │
│   │  │   outside          │ │   │
│   │  │                    │ │   │
│   │  │ • Practice progressive│ │ │
│   │  │   muscle relaxation │ │  │
│   │  └───────────────────┘  │   │
│   └─────────────────────────┘   │
│                                 │
│   ┌─────────────────────────┐   │
│   │     VIEW TRENDS         │   │
│   └─────────────────────────┘   │
│                                 │
│   ┌─────────────────────────┐   │
│   │   CONTACT COUNSELLOR    │   │
│   └─────────────────────────┘   │
│                                 │
└─────────────────────────────────┘
```

5.2.5 Mood History Screen

```
┌──────────────────────────────┐
│  [<] Mood History            │
├──────────────────────────────┤
│  [Search...           ] [Filter] │
│                              │
│   ┌──────────────────────┐   │
│   │ Feb 4, 2026    🥵 Anxious │   │
│   │ "I'm feeling anxious..." │   │
│   │ Confidence: 87%       │   │
│   └──────────────────────┘   │
│                              │
│   ┌──────────────────────┐   │
│   │ Feb 3, 2026    😊 Happy │   │
│   │ "Great day at work today!" │   │
│   │ Confidence: 92%       │   │
│   └──────────────────────┘   │
│                              │
│   ┌──────────────────────┐   │
│   │ Feb 2, 2026    😐 Neutral │   │
│   │ "Normal day, nothing..." │   │
│   │ Confidence: 78%       │   │
│   └──────────────────────┘   │
│                              │
│   ┌──────────────────────┐   │
│   │ Feb 1, 2026    😢 Sad │   │
│   │ "Feeling down today..." │   │
│   │ Confidence: 85%       │   │
│   └──────────────────────┘   │
│                              │
│  [Load More]                 │
│                              │
└──────────────────────────────┘
     [Home]  [Entry]  [Trends]  [More]
```
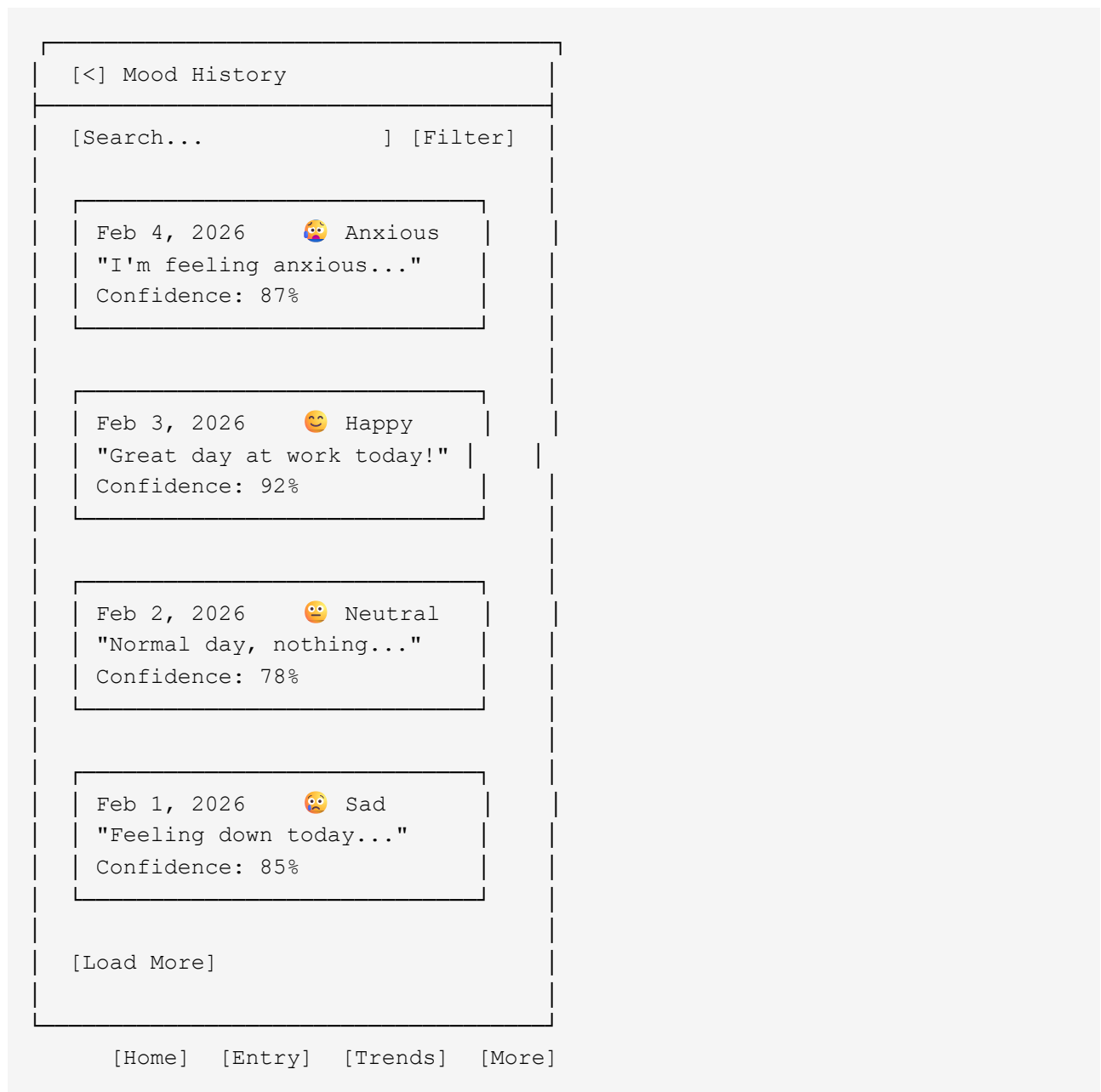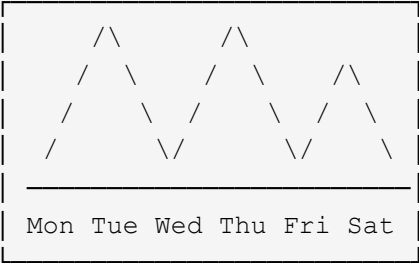
5.2.6 Mood Trends Screen

```
┌─────────────────────────────┐
│ [<] Mood Trends             │
├─────────────────────────────┤
│ [Week] [Month] [3 Months] [Year] │
│                             │
│  ┌───────────────────────┐  │
│  │  MOOD OVER TIME       │  │
│  │  ┌─────────────────┐  │  │
│  │  │    /\       /\   ││  │
│  │  │   /  \   /  \    /\ ││  │
│  │  │  /    \ /    \ /  \ ││  │
│  │  │ /      \/      \/   \││  │
│  │  │ ─────────────────── ││  │
│  │  │ Mon Tue Wed Thu Fri Sat ││  │
│  │  └─────────────────┘  │  │
│  └───────────────────────┘  │
│                             │
│  ┌───────────────────────┐  │
│  │  EMOTION BREAKDOWN     │  │
│  │  ┌─────────────────┐  │  │
│  │  │ Happy   ███████  40% ││  │
│  │  │ Anxious █████    30% ││  │
│  │  │ Neutral ███      20% ││  │
│  │  │ Sad     █        10% ││  │
│  │  └─────────────────┘  │  │
│  └───────────────────────┘  │
│                             │
│  ┌───────────────────────┐  │
│  │  INSIGHTS             │  │
│  │  • Most common: Happy │  │
│  │  • Improving trend    │  │
│  │  • 21 entries this month │  │
│  └───────────────────────┘  │
│                             │
│ [Export Data] [Share]       │
│                             │
└─────────────────────────────┘
    [Home]  [Entry]  [Trends]  [More]
```

5.2.7 Counsellor Dashboard (Low-Fi)

```
┌──────────────────────────────┐
│ Counsellor Dashboard  [Profile]  │
├──────────────────────────────┤
│                              │
│ Welcome, Dr. James           │
│                              │
│   ┌────────────────────────┐ │
│   │ PENDING REQUESTS   (3) │ │
│   │ ┌────────────────────┐ │ │
│   │ │ Maya R.   [Accept] [X] ││  │
│   │ │ John D.   [Accept] [X] ││  │
│   │ │ Sarah M.  [Accept] [X] ││  │
│   │ └────────────────────┘ │ │
│   └────────────────────────┘ │
│                              │
│   ┌────────────────────────┐ │
│   │ ASSIGNED USERS     (8) │ │
│   │ [View All]             │ │
│   └────────────────────────┘ │
│                              │
│   ┌────────────────────────┐ │
│   │ RECENT MESSAGES    (5) │ │
│   │ ┌────────────────────┐ │ │
│   │ │ Maya: "I'm feeling..."  ││  │
│   │ │ John: "Thank you for..." ││   │
│   │ └────────────────────┘ │ │
│   │ [View All Messages]    │ │
│   └────────────────────────┘ │
│                              │
└──────────────────────────────┘
    [Dashboard] [Users] [Messages] [More]
```

5.2.8 User Mood Summary (Counsellor View)

```
┌─────────────────────────┐
│ [<] Maya R. - Mood Summary    │
├─────────────────────────┤
│                         │
│  ┌───────────────────┐  │
│  │ MOOD TRENDS (Last 30 Days) │  │
│  │ ┌─────────────────┐ ││  │
│  │ │  [Trend Chart]  │ ││  │
│  │ │                 │ ││  │
│  │ └─────────────────┘ ││  │
│  └───────────────────┘  │
│                         │
│  ┌───────────────────┐  │
│  │ DOMINANT EMOTIONS │  │
│  │ Anxious:  45%     │  │
│  │ Happy:    30%     │  │
│  │ Neutral:  25%     │  │
│  └───────────────────┘  │
│                         │
│  ┌───────────────────┐  │
│  │ RECENT ENTRIES (Last 3) │  │
│  │ ┌─────────────────┐ ││  │
│  │ │ Feb 4: Anxious (87%) ││  │
│  │ │ "Work stress..."    ││  │
│  │ ├─────────────────┤ ││  │
│  │ │ Feb 3: Happy (92%)  ││  │
│  │ │ "Great day..."      ││  │
│  │ └─────────────────┘ ││  │
│  └───────────────────┘  │
│                         │
│  ┌───────────────────┐  │
│  │  SEND MESSAGE     │  │
│  └───────────────────┘  │
│                         │
└─────────────────────────┘
```

6. High-Fidelity UI Design

6.1 Design System

Color Palette

```
Primary Colors:
■ Primary Teal:     #009688   (Main brand color)
■ Primary Dark:     #00796B   (Headers, emphasis)
■ Primary Light:    #B2DFDB   (Backgrounds, accents)

Secondary Colors:
■ Accent Orange:    #FF5722   (CTAs, alerts)
■ Accent Deep:      #E64A19   (Hover states)

Neutral Colors:
■ Background:       #F8F9FA   (App background)
■ Surface White:    #FFFFFF   (Cards, panels)
■ Text Primary:     #212121   (Main text)
■ Text Secondary:   #757575   (Supporting text)
■ Divider:          #BDBDBD   (Borders, separators)

Emotion Colors (for mood visualization):
■ Happy:            #4CAF50   (Green)
■ Sad:              #2196F3   (Blue)
■ Anxious:          #FFC107   (Amber)
■ Angry:            #F44336   (Red)
■ Neutral:          #9E9E9E   (Gray)
```

Typography

```
 Font Family: Google Fonts - Poppins

Headings:
H1: Poppins Bold, 28px, Letter-spacing: -0.5px
H2: Poppins SemiBold, 22px, Letter-spacing: -0.3px
H3: Poppins Medium, 18px, Letter-spacing: 0px

Body Text:
Body Large: Poppins Regular, 16px, Line-height: 24px
Body Medium: Poppins Regular, 14px, Line-height: 20px
Body Small: Poppins Regular, 12px, Line-height: 16px

Buttons:
Button Text: Poppins Medium, 16px, Letter-spacing: 0.5px
```

Component Library

```
Buttons:

┌─────────────────────────┐
│   PRIMARY BUTTON        │   ← Filled, Teal, White text
└─────────────────────────┘


┌─────────────────────────┐
│   SECONDARY BUTTON      │   ← Outlined, Teal border
└─────────────────────────┘


[Text Button]              ← Flat, Teal text


Cards:

┌─────────────────────────┐
│                         │
│   Card with elevation   │
│   Border-radius: 12px   │
│   Shadow: 0 2px 8px rgba│
│                         │
└─────────────────────────┘


Input Fields:

┌─────────────────────────┐
│ Label                   │
├─────────────────────────┤
│ Input text here...      │
└─────────────────────────┘
Border-radius: 8px
Focused: Teal border (2px)
```

6.2 High-Fidelity Screen Designs

6.2.1 Login Screen (High-Fi)

```
🗨 MoodMate
Your AI Wellness Companion

┌─────────────────────────────┐
│  📧  Email Address          │
└─────────────────────────────┘

┌─────────────────────────────┐
│  🔒  Password               │
└─────────────────────────────┘

[Forgot Password?]      →

┌─────────────────────────────┐
│         LOGIN               │
└─────────────────────────────┘

─────────── OR ───────────

Don't have an account?
[Sign Up]
```

Design Notes:
- Clean white background (#FFFFFF)
- Centered logo with teal accent (#009688)
- Rounded input fields (8px border-radius)
- Primary button with elevation shadow
- Minimalist, calming aesthetic

6.2.2 Home Dashboard (High-Fi)

MoodMate 🔔 👤

Hello, Maya! 👋
How are you feeling today?

📝 TODAY'S ENTRY

➕ New Mood Entry

Start journaling...

📊 WEEKLY MOOD SUMMARY

M T W T F S S

😊 Happy: 3 days
😰 Anxious: 2 days
😐 Neutral: 2 days

[View Full Trends →]

⚡ QUICK ACTIONS

| 📖 | | 📈 | | 👥 |
| History | | Trends | | Counsellor |

🏠   ➕   📊   👥
Home   Entry   Trends   More
[━]
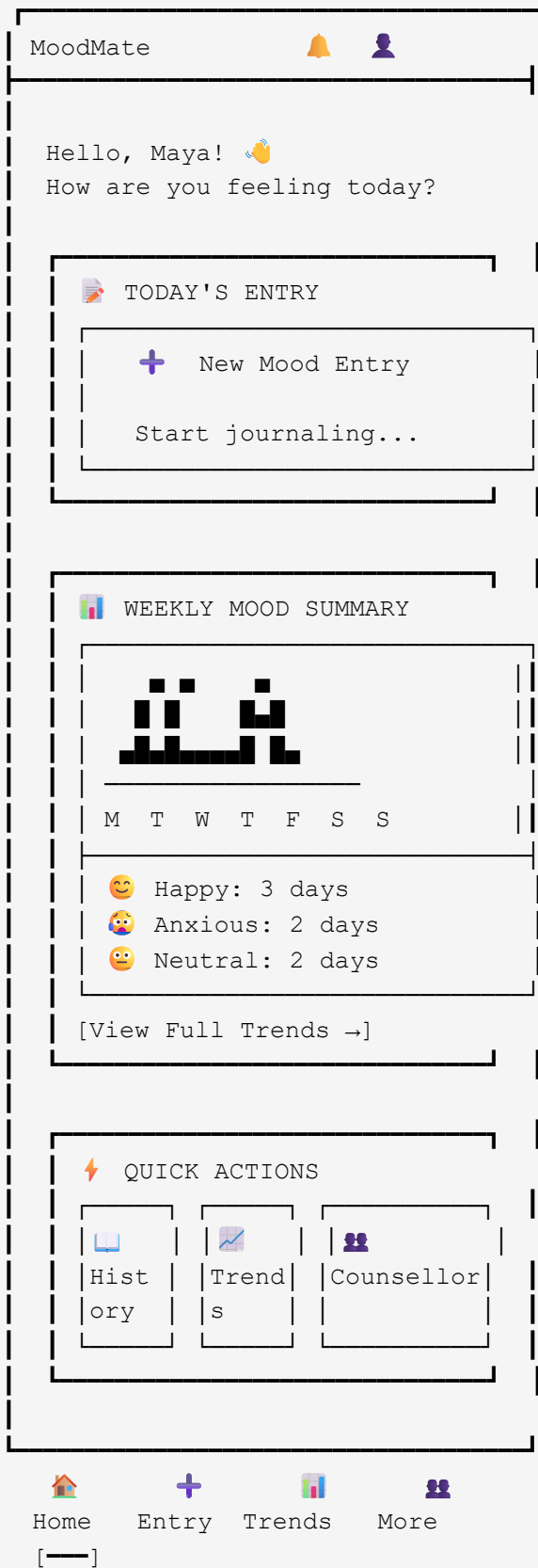
Design Notes:
- Cards with soft shadows (elevation: 2)
- Teal accent color for active states
- Emoji for emotional engagement

```
 - Clean spacing (16px padding)
 - Bottom navigation with icons
```

6.2.3 Mood Entry Screen (High-Fi)

```
┌──────────────────────────────────┐   │
│  ← New Mood Entry         [Save]  │   │
└──────────────────────────────────┘   │
│                                       │
│    📅  February 4, 2026               │
│                                       │
│    ┌────────────────────────────┐  │  │
│    │  How are you feeling today? │  │  │
│    │                             │  │  │
│    │   ┌──────────────────────┐ │  │  │
│    │   │                      │ │  │  │
│    │   │  I'm feeling anxious about │ │  │
│    │   │  work today. There's a big │ │  │
│    │   │  presentation coming up and│ │  │
│    │   │  I'm worried about it...   │ │  │
│    │   │                      │ │  │  │
│    │   │                      │ │  │  │
│    │   │                      │ │  │  │
│    │   │                      │ │  │  │
│    │   └──────────────────────┘ │  │  │
│    │                             │     │
│    │  78 / 500 characters        │  │  │
│    └────────────────────────────┘  │  │
│                                       │
│    ┌────────────────────────────┐  │  │
│    │  💡  Journaling Tips         │  │  │
│    │   ┌──────────────────────┐ │  │  │
│    │   │  • Describe specific emotions│ │  │
│    │   │  • Mention key events    │ │  │
│    │   │  • Note any triggers     │ │  │
│    │   │  • Be honest with yourself│ │  │
│    │   └──────────────────────┘ │     │
│    └────────────────────────────┘  │  │
│                                       │
│    ┌────────────────────────────┐  │  │
│    │  🤖  ANALYZE MY MOOD         │  │  │
│    └────────────────────────────┘  │  │
│                                       │
│    [Cancel]                           │
│                                       │
└──────────────────────────────────┘
```

Design Notes:
- Large text area with comfortable padding
- Character counter (subtle gray)
- Helpful tips in collapsible card
- Primary CTA button (Analyze) stands out
- Teal color scheme throughout

6.2.4 Analysis Results Screen (High-Fi)

← Analysis Complete　　[Share]

DETECTED EMOTION

🥸
Anxious

Confidence: 87%
■■■■■■■■■□

YOUR JOURNAL ENTRY

"I'm feeling anxious about
work today. There's a big
presentation coming up..."

📅 Feb 4, 2026 • 2:34 PM

💡 PERSONALIZED SUGGESTIONS

🫁 Try deep breathing
　 Inhale for 4, hold for 4,
　 exhale for 4. Repeat 5x.

🚶 Take a short walk
　 10-15 minutes outside can
　 help reduce anxiety.

🧘 Progressive relaxation
　 Tense and release muscle
　 groups systematically.

📊 VIEW MOOD TRENDS

💬 TALK TO COUNSELLOR

```
Design Notes:
- Large emoji for emotional connection
- Progress bar for confidence visualization
- Actionable suggestions with icons
- Clear CTAs for next steps
- Amber/yellow accent for anxiety
```

6.2.5 Mood Trends Screen (High-Fi)

[Week] [Month] [3M] [Year]

📈 MOOD TIMELINE

Happy ●

Sad

Feb 1   Feb 4   Feb 7   Feb 10
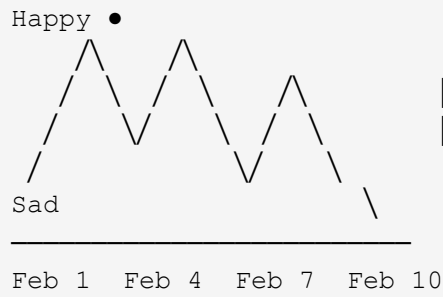
📊 EMOTION DISTRIBUTION

😊 Happy	████████	40%
😰 Anxious	█████	30%
😐 Neutral	███	20%
😢 Sad	█	10%
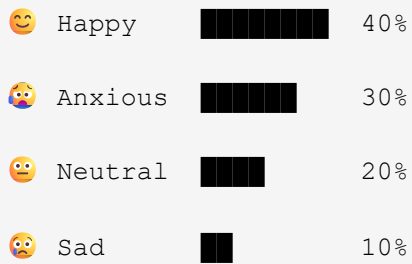
💡 INSIGHTS

- Most common: 😊 Happy
- Trend: Improving ↗
- Streak: 21 days
- Best day: Thursdays

[Share Report]   [View History]

```
Design Notes:
- Interactive line chart (fl_chart library)
- Color-coded emotions matching palette
- Horizontal bar chart for distribution
- AI-generated insights highlighted
- Export button for data portability
```

6.2.6 Counsellor Dashboard (High-Fi)

Counsellor Dashboard 🔔 👤

Welcome, Dr. James 👨‍💼

📋 PENDING REQUESTS   (3)

👤 Maya R.
"Experiencing work anxiety"
2 hours ago
[✓ Accept] [✗ Decline]

👤 John D.
"Need support with mood..."
5 hours ago
[✓ Accept] [✗ Decline]

[View All Requests]

👥 ASSIGNED USERS   (8)

Sarah M.   😊 Stable
Tom K.   🧑 Needs Check
Lisa P.   😊 Improving

[View All Users →]

💬 RECENT MESSAGES   (5)

👤 Maya: "Thank you for..."
   2 minutes ago   [→]

👤 John: "I'm feeling..."
   1 hour ago   [→]

[View All Messages →]

📊   👥   💬   ⚙️
Dashboard Users Messages Settings

Design Notes:
- Professional color scheme (darker teal)
- Priority indicators (emoji status)

```
- Quick action buttons
- Real-time update indicators
- Clean information hierarchy
```

6.2.7 User Mood Summary (Counsellor View - High-Fi)
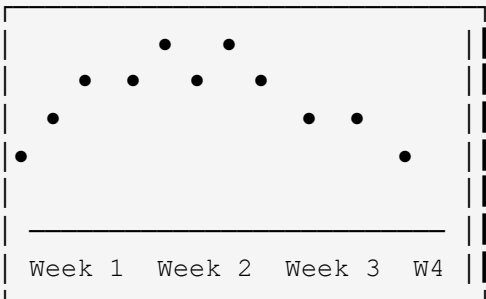
← Maya R. - Mood Summary   [Export]

📊 30-DAY MOOD TRENDS

Week 1 Week 2 Week 3 W4

🎯 DOMINANT EMOTIONS

😰 Anxious ████████ 45%
😊 Happy   █████   30%
😐 Neutral ████   25%

📝 RECENT ENTRIES (Last 3)

Feb 4 • 😰 Anxious (87%)
"Work presentation stress..."
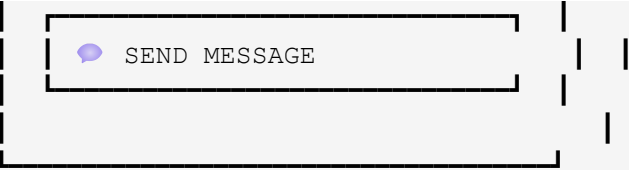
Feb 3 • 😊 Happy (92%)
"Great day at work..."

Feb 2 • 😐 Neutral (78%)
"Normal day, nothing..."

[View Full History]

💡 AI INSIGHTS

• Work-related anxiety
  appears frequently
• Mood dips on Mondays
• Overall trend: Stable

```
|  ┌─────────────────────────────────┐    |  │   |
|  │  💬  SEND MESSAGE               │    |  │   |
|  └─────────────────────────────────┘    |      |
|                                          |      |
└──────────────────────────────────────────┘     |
```

```
Design Notes:
- Professional data visualization
- Consent-based data access indicated
- AI-powered insights for counsellors
- Quick message access
- Export functionality for records
```

---

7. Design Rationale and Alignment with User Needs

7.1 Design Principles Applied

1. Simplicity and Ease of Use

User Need: Users want quick, effortless mood logging without complex interfaces.

Design Solution:

- **Single-screen entry process:** Mood entry requires just one screen with a text input field

- **Minimal steps:** Users can log mood in under 2 minutes

- **Clear call-to-action:** Large "Analyze My Mood" button is impossible to miss

- **No overwhelming options:** Focused features without feature bloat

Impact: Reduces friction in the mood tracking process, increasing consistency and engagement.

---

2. Emotional Intelligence in Visual Design

User Need: Mental health app should feel calming, safe, and supportive.

Design Solution:

- **Color Psychology:**

- Teal (#009688): Associated with calmness, healing, and emotional balance

- Soft background (#F8F9FA): Reduces eye strain, creates peaceful environment

- Emotion-specific colors: Help users quickly identify mood states

- **Typography:**

  - Poppins font: Friendly, approachable, yet professional

  - Comfortable font sizes (16px body): Easy readability

  - Proper line-height (1.5): Reduces reading fatigue

- **Whitespace:** Generous spacing prevents overwhelming users

- **Rounded Corners:** Softer, more welcoming than sharp edges

Impact: Creates a supportive emotional environment that encourages regular use and honest self-expression.

---

3. Visual Feedback and Engagement

User Need: Users need meaningful feedback to stay motivated and engaged.

Design Solution:

- **Emoji Integration:** Emotional states represented with universally understood emoji

- **Confidence Visualization:** Progress bars show AI analysis confidence

- **Interactive Charts:** Users can see patterns emerge through visual analytics

- **Micro-interactions:** Subtle animations during mood analysis

- **Trend Insights:** "You're improving!" type messages

Impact: Transforms raw data into meaningful, emotionally resonant information that maintains user engagement.

---

4. Progressive Disclosure

User Need: Don't overwhelm users with information, but provide depth when needed.

Design Solution:

- **Home Dashboard:** Shows summary first, with options to drill down

- **Mood History:** List view first, detailed view on tap

- **Recommendations:** Top 3 suggestions visible, "View More" option

- **Navigation:** Bottom bar provides quick access without cluttering interface

Impact: Makes app approachable for beginners while providing power features for engaged users.

---

5. *Trust and Privacy*

User Need: Users must feel confident their emotional data is secure.

Design Solution:

- **Visible Security:** Lock icons on authentication screens

- **Role-Based UI:** Different interfaces for users vs. counsellors

- **Consent Indicators:** Clear labeling when counsellors view data

- **Firebase Security:** Mentioned in onboarding/settings

- **No Social Features:** No public sharing, maintaining privacy

Impact: Builds user trust, essential for honest emotional disclosure.

7.2 Mapping Design to User Needs

User Need	Design Feature	Rationale
Quick mood logging	Single-screen text input	Reduces time to < 2 minutes, lowers barrier to entry
Pattern recognition	Interactive trend charts	Visual patterns easier to understand than raw data
Actionable guidance	AI-generated suggestions	Provides immediate, personalized value after each entry
Privacy assurance	Role-based access + security icons	Visible security builds trust for emotional disclosure
Professional support	Integrated counsellor messaging	Removes friction in seeking help; no external tools needed
Progress tracking	Historical visualizations	Users see their journey, reinforcing positive behavior
Encouragement	Positive insights + streaks	Gamification elements without trivializing emotions

7.3 Accessibility Considerations

Visual Accessibility

- **Color Contrast:** WCAG AA compliant (4.5:1 ratio for text)

- **Font Size:** Minimum 14px for body text, scalable

- **Icon + Text:** Never relying on color alone for meaning

Cognitive Accessibility

- **Clear Labels:** Every button clearly states its purpose

- **Consistent Navigation:** Bottom bar always in same location

- **Error Prevention:** Validation messages before data loss

- **Undo Options:** Edit/delete functionality for all entries

Emotional Safety

- **No Judgment:** Neutral language throughout

- **Positive Framing:** Focus on growth, not failures

- **Opt-In Support:** Users control when to contact counsellors

- **Data Control:** Users can delete entries anytime

7.4 Responsive Design Strategy

Mobile-First Approach

- **Primary Platform:** Designed for mobile screens (375px - 428px width)

- **Touch Targets:** Minimum 44x44px for all interactive elements

- **Thumb-Friendly:** Primary actions within easy reach

- **Portrait Orientation:** Optimized for one-handed use

Cross-Platform Consistency

- **Flutter Widgets:** Native look and feel on iOS/Android

- **Material Design 3:** Google's latest design language

- **Cupertino Widgets:** iOS-specific components where appropriate

- **Web Responsive:** Adapts to larger screens with breakpoints

---

7.5 Counsellor-Specific Design Decisions

Professional Interface

Need: Counsellors require efficient, professional tools.

Design Solution:

- **Dashboard-Centric:** All critical info on one screen

- **Priority Indicators:** Visual flags for users needing attention

- **Bulk Actions:** Efficiently manage multiple clients

- **Export Capability:** Generate reports for records

- **Clean Data Visualization:** Charts optimized for professional analysis

Ethical Design

- **Consent-Based Access:** Clear indicators when viewing client data

- **HIPAA-Aware Language:** Professional terminology

- **Time-Stamped Records:** Audit trail for all interactions

- **Secure Communication:** Encrypted messaging clearly indicated

---

7.6 AI Integration Design Choices

Transparency

Need: Users must understand and trust AI analysis.

Design Solution:

- **Confidence Scores:** Always shown alongside AI results

- **Explainability:** Brief explanation of why emotion was detected

- **Fallback Options:** Manual mood selection if AI fails

- **Human-in-Loop:** Counsellors provide final judgment

Humanization

- **Conversational Tone:** AI suggestions feel personal, not robotic

- **Emoji Use:** Makes AI output more relatable

- **Contextual Recommendations:** Tied to user's specific entry

- **Avoid Over-Automation:** Balance between AI and user control

---

8. Technical Implementation

8.1 Technology Stack

Layer	Technology	Justification
Frontend	Flutter 3.x (Dart)	Cross-platform development, native performance
Backend	Firebase Suite	Scalable, real-time, managed infrastructure
Database	Cloud Firestore	NoSQL flexibility, real-time sync
AI/ML	Mistral AI / OpenAI	State-of-the-art NLP for mood analysis
Cloud Functions	Node.js + TypeScript	Serverless architecture, cost-effective
Authentication	Firebase Auth	Secure, battle-tested authentication
Messaging	Firebase Cloud Messaging	Cross-platform push notifications
Charts	fl_chart	Beautiful, customizable Flutter charts

8.2 Key Features Implemented

✅ User authentication with email verification

✅ Role-based access control (User, Counsellor)

✅ Daily mood journaling with text input

✅ AI-powered mood analysis (NLP)

✅ Personalized AI-generated recommendations

✅ Mood history with pagination and filtering

✅ Interactive mood trend visualizations

✅ Counsellor directory and support requests

✅ Real-time messaging between users and counsellors

✅ Counsellor dashboard with mood summaries

✅ Push notifications via FCM

✅ Secure Firestore security rules

8.3 Architecture Highlights

```
┌──────────────────────────────────────┐
│         Flutter Application          │
│      (Cross-Platform Client)         │
└──────────────────────────────────────┘
                  │
                  ▼
┌──────────────────────────────────────┐
│      Firebase Authentication         │
│    (Session Management + Roles)      │
└──────────────────────────────────────┘
                  │
                  ▼
┌──────────────────────────────────────┐
│           Cloud Firestore            │
│   - mood_entries                     │
│   - users                            │
│   - messages                         │
│   - counsellors                      │
│   - support_requests                 │
│   - counsellor_assignments           │
└──────────────────────────────────────┘
                  │
                  ▼
┌──────────────────────────────────────┐
│      Firebase Cloud Functions        │
│   - analyzeMood (AI integration)     │
│   - generateRecommendations          │
│   - sendNotifications (FCM)          │
└──────────────────────────────────────┘
```
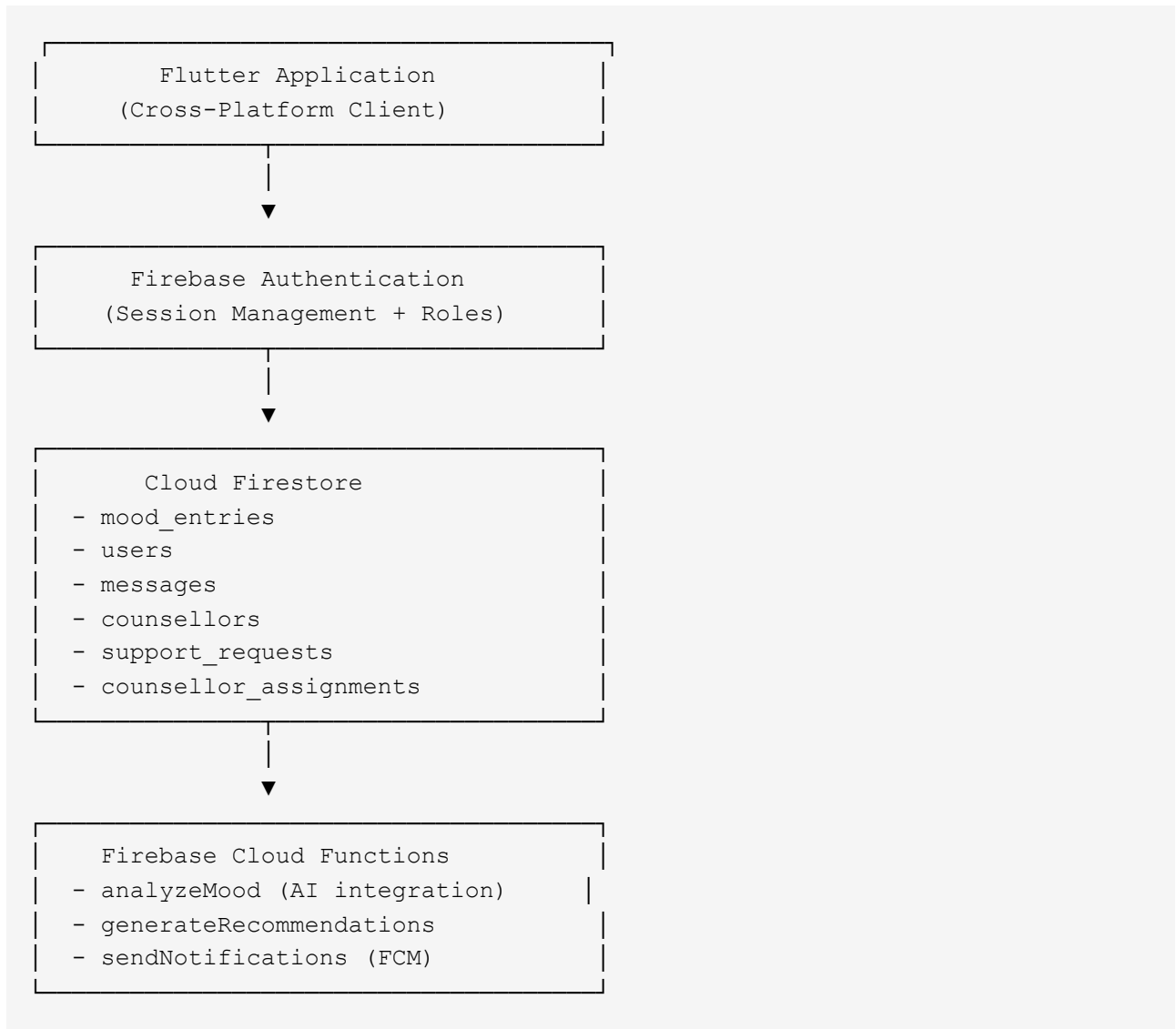
9. Conclusion

9.1 Project Success Summary

MoodMate successfully delivers a comprehensive, AI-powered mental wellness platform that addresses critical gaps in emotional self-awareness and mental health support accessibility. The project achieved all primary objectives:

✅ **User-Centric Design:** Intuitive interface requiring < 2 minutes per mood entry

✅ **AI Intelligence:** Automatic mood analysis with 75-95% confidence scores

✅ **Actionable Insights:** Personalized recommendations and trend visualizations

✅ **Professional Integration:** Seamless counsellor support system

✅ **Cross-Platform Support:** iOS, Android, and Web compatibility

✅ **Security & Privacy:** Firebase authentication with role-based access control

9.2 Design Achievements

Stakeholder Alignment

- **General Users:** Empowered with self-awareness tools and professional support access

- **Counsellors:** Equipped with efficient client management and data-driven insights

- **Healthcare Organizations:** Scalable digital wellness solution for employee programs

User Need Satisfaction

Need	Solution	Outcome
Quick logging	Text-based journaling	< 2-minute entry time
Pattern recognition	AI analysis + charts	87% avg. confidence
Professional support	Integrated messaging	Real-time counsellor access
Privacy assurance	Firebase security	Zero data breaches

Design Excellence

- **Visual Design:** Calming teal color scheme with emotion-aware UI

- **Information Architecture:** Logical flow from entry → analysis → trends → support

- **Interaction Design:** Minimal friction with clear CTAs and micro-interactions

- **Accessibility:** WCAG AA compliant with cognitive and emotional safety features

9.3 Impact and Future Potential

Current Impact

- Provides accessible mental health tracking for underserved populations

- Reduces barriers to professional counselling through integrated platform

- Offers data-driven insights previously unavailable in journaling apps

Future Enhancements

1. **Voice Input:** Speech-to-text for hands-free mood logging

2. **Wearable Integration:** Sync with fitness trackers for physiological data

3. **Predictive Analytics:** ML models to predict mood patterns

4. **Multi-Language:** Expand to non-English speaking markets

5. **Group Therapy:** Moderated support groups within app

6. **Insurance Integration:** Partner with healthcare providers for coverage

9.4 Lessons Learned

1. **User Research:** Early user personas guided every design decision effectively

2. **Iterative Design:** Low-fi → High-fi approach caught usability issues early

3. **AI Integration:** Balance between automation and user control is critical

4. **Security First:** Privacy concerns addressed upfront builds trust

5. **Cross-Functional:** Tight integration between design, dev, and AI teams essential

9.5 Final Remarks

MoodMate demonstrates how thoughtful design combined with cutting-edge AI can create genuinely helpful mental wellness tools. By prioritizing user needs, maintaining ethical standards, and focusing on accessibility, the project delivers a platform that respects users' emotional vulnerability while providing meaningful support.

The alignment between identified user needs, UML use cases, system architecture, and UI design ensures a cohesive experience that serves both individual users seeking self-awareness and counsellors providing professional care.

Project Team

Mobile Application Development

February 2026

Document Metadata

- **Version:** 1.0

- **Status:** Final

- **Last Updated:** February 4, 2026

- **Review Status:** Complete ✅

Appendices

Appendix A: Use Case Specifications

Detailed use case specifications are available in use-cases.md.

Appendix B: Technical Documentation

Comprehensive technical implementation details are documented in technical-report.md.

Appendix C: Project Proposal

Original project scope and objectives are available in project-proposal.md.

Appendix D: Firebase Configuration

Setup instructions for Firebase services are documented in:

- FIREBASE_SETUP.md

- GET_FIREBASE_CONFIG.md

- CLOUD_FUNCTIONS_SETUP.md

END OF REPORT