



## **Project ITCS259\_Mobile Application Development**

### **Daily Mood Journal Application**

#### **Submitted by**

|      |           |                 |         |
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**ITCS259\_Mobile Application Development**

## 1. Introduction & Background

- People increasingly want to understand their emotions for better mental health, focus, and productivity. However, many mood-tracking apps require accounts, internet, or have complex interfaces.

This project presents **Daily Mood Journal**, a simple and lightweight application that helps users record their emotions each day through a clean UI and offline-first design.

## 2. Related Works

Popular mood apps like **Daylio**, **Moodflow**, and **Reflectly** offer journaling and emotional tracking. However, they often:

- require logins,
- include ads or paid features,
- store data online,
- or feel overwhelmed for new users.

Our app focuses on **privacy**, **offline usage**, **minimalism**, and **speed of entry**.

## 3. Methodology

### 3.1 System Architecture

- **Frontend:** Flutter
- **State Management:** Provider
- **Database:**
  - Mobile/Desktop → SQLite (sqflite)
  - Web → SharedPreferences (localStorage)
- **Charts:** fl\_chart
- **Notification (Mobile Only):** flutter\_local\_notifications

### 3.2 Tools

- Flutter SDK, Dart, Android Emulator, Chrome DevTools, VS Code/Android Studio.

### 3.3 Application Workflow

1. User opens app
2. Today screen loads today's data
3. User selects mood + adds a quick note
4. Data saved to device
5. User reviews history & statistics
6. Optional daily reminder (Android only)

## 4. Results

### Completed Features

| Feature                      | Done |
|------------------------------|------|
| Add mood & note              | ✓    |
| History list                 | ✓    |
| Search & filter              | ✓    |
| Statistics chart             | ✓    |
| Dark/Light mode              | ✓    |
| Daily notification (Android) | ✓    |
| Offline web support          | ✓    |
| Local storage                | ✓    |

## 5. Limitations

- Notifications unavailable on web
- LocalStorage on web resets if origin (port) changes
- No cloud sync
- SQLite is available only on mobile/desktop

## 6. Conclusion

Daily Mood Journal successfully demonstrates a clean, offline-first emotion-tracking app. It works across platforms, stores data locally, and keeps user experience simple and intuitive.

## 7. Responsibilities

|                |  |
|----------------|--|
| <b>6688121</b> | Documentation writing, Flutter coding, state management, local database logic, integration, debugging across platforms |
| <b>6688193</b> | Ux/UI design, statistics page, video presentation, testing, preparing screenshots and final report                     |

## 8. References

### Flutter & Dart

1. Flutter Documentation:  
<https://docs.flutter.dev>
2. Dart Language Documentation:  
<https://dart.dev/guides>
3. Flutter Material 3 (M3) Guidelines:  
<https://m3.material.io>

### Packages Used in the Project

#### Provider

4. Provider (State Management):  
<https://pub.dev/packages/provider>

#### SQLite (Mobile/Desktop via sqflite)

5. sqflite (SQLite plugin for Flutter):  
<https://pub.dev/packages/sqflite>

6. sqflite Documentation (GitHub):  
<https://github.com/tekartik/sqflite>

#### Web Storage (SharedPreferences Web implementation)

7. shared\_preferences:  
[https://pub.dev/packages/shared\\_preferences](https://pub.dev/packages/shared_preferences)

#### IndexedDB / Web FFI

8. sqflite\_common\_ffi\_web:  
[https://pub.dev/packages/sqflite\\_common\\_ffi\\_web](https://pub.dev/packages/sqflite_common_ffi_web)
9. IndexedDB API (MDN Web Docs):  
[https://developer.mozilla.org/en-US/docs/Web/API/IndexedDB\\_API](https://developer.mozilla.org/en-US/docs/Web/API/IndexedDB_API)

## Charts

- 10. fl\_chart (Bar chart & visualization):  
[https://pub.dev/packages/fl\\_chart](https://pub.dev/packages/fl_chart)
- 11. fl\_chart GitHub Repo:  
[https://github.com/imaNNeo/fl\\_chart](https://github.com/imaNNeo/fl_chart)

## Notifications

- 12. flutter\_local\_notifications:  
[https://pub.dev/packages/flutter\\_local\\_notifications](https://pub.dev/packages/flutter_local_notifications)
- 13. Android Notification Permission (Official Docs):  
<https://developer.android.com/develop/ui/views/notifications/notification-permission>
- 14. Exact Alarms on Android 12+:  
<https://developer.android.com/training/scheduling/alarms>

## Miscellaneous Tools

- 15. Path Provider (finding OS paths)  
[https://pub.dev/packages/path\\_provider](https://pub.dev/packages/path_provider)
- 16. intl (Date formatting)  
<https://pub.dev/packages/intl>

## Flutter Web Deployment

- 17. Flutter Web — Local Storage  
<https://docs.flutter.dev/platform-integration/web/renderers#accessing-browser-apis>
- 18. Browser localStorage (MDN)  
<https://developer.mozilla.org/en-US/docs/Web/API/Window/localStorage>

## Design Guidelines

- 19. Material Design Components  
<https://m3.material.io/components>
- 20. Material Icons  
<https://fonts.google.com/icons>

## General App

- 21. Daylio — Mood Tracker:  
<https://daylio.net>
- 22. Moodflow: <https://moodflow.app>
- 23. Reflectly: <https://reflectly.app>