

Project Report: News Reader App with Weather Tracking

1. Project Overview

The **News Reader App** is a Flutter-based mobile application that allows users to browse the latest news articles and track weather conditions. It integrates **NewsData.io API** for fetching real-time news and **WeatherAPI.com** for weather updates. The app also supports **Firebase Firestore** to save favorite news articles and provides **multi-language support** for a better user experience.

2. Features Implemented

2.1 News Features

- ✓ **Fetch Latest News** – Retrieves news articles from NewsData.io API.
- ✓ **Category Selection** – Users can filter news by category (business, sports, health, etc.).
- ✓ **Country Selection** – Users can choose news from different countries.
- ✓ **Keyword Search** – Allows users to search news based on keywords.
- ✓ **Save News** – Users can bookmark news articles to Firebase Firestore.
- ✓ **Read More Option** – Each news article links to the original source for full reading.

2.2 Weather Features

- ✓ **Real-time Weather Updates** – Retrieves weather conditions for a selected city.
- ✓ **City Selection** – Users can choose a city to check the current weather.
- ✓ **Weather Details** – Displays temperature, humidity, wind speed, and condition icons.

2.3 User Interface & Functionality

- ✓ **Multi-language Support** – Users can switch between English and Spanish.
 - ✓ **Navigation System** – Allows easy switching between news, saved articles, and weather tracking.
 - ✓ **Background Image** – Customizable background image on the home screen.
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3. Technologies & Tools Used

3.1 Programming Languages & Frameworks

- **Flutter** – Cross-platform mobile development framework.
- **Dart** – Programming language used in Flutter.

3.2 APIs & Services

- **NewsData.io API** – Fetching real-time news articles.
- **WeatherAPI.com** – Retrieving weather updates.
- **Firebase Firestore** – Storing saved news articles.

3.3 Libraries & Packages

- **http** – API calls to fetch news and weather data.
- **firebase_core & cloud_firestore** – Firebase integration for storing saved news.
- **provider** – State management.
- **flutter_localizations & intl** – Localization support for multi-language.

4. System Architecture & Implementation

4.1 Folder Structure

```
/newsapp
├── lib/
│   ├── main.dart                # App entry point
│   ├── services/
│   │   ├── api_service.dart    # Fetch news from API
│   │   └── weather_service.dart # Fetch weather updates
│   ├── models/
│   │   └── news_model.dart      # News data structure
│   ├── screens/
│   │   ├── home_screen.dart    # News homepage
│   │   ├── details_screen.dart  # News details page
│   │   ├── saved_news_screen.dart # Saved articles page
│   │   └── weather_screen.dart  # Weather tracking page
│   ├── widgets/
│   │   └── news_tile.dart       # UI component for news item
│   ├── localization/
│   │   ├── app_localizations.dart # Language support system
│   │   ├── en.json              # English translations
│   │   └── es.json              # Spanish translations
│   └── providers/
│       ├── news_provider.dart    # Manages saved news state
│       └── locale_provider.dart  # Handles language switching
└── pubspec.yaml                # Dependencies list
```

5. Future Enhancements

- ◆ **User Authentication** – Allow users to log in and sync saved news across devices.
 - ◆ **Dark Mode Support** – Implement a theme switcher for dark/light modes.
 - ◆ **Push Notifications** – Notify users of breaking news updates.
 - ◆ **Offline Mode** – Cache news articles for offline reading.
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6. Conclusion

The **News Reader App** successfully integrates **news tracking, weather updates, and Firebase storage** into a single application. With its **custom filtering system, real-time weather tracking, and multi-language support**, it provides a **seamless user experience**. Future updates will enhance the app's usability and functionality.

SCREENSHOTS :





