**Project Report on COVID-19 Tracker App**

**Roll No : 22sw155**

**Roll No : 22-21sw086**

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**‎1. Introduction**

‎The COVID-19 pandemic highlighted the need for real-time health data and awareness tools. The COVID-19 Tracker App is designed to provide users with up-to-date information about coronavirus cases, recoveries, and deaths across different regions. It also offers local storage-based data access for offline use, ensuring reliability even without an internet connection.

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‎**2. Objective**

‎The main objectives of this project are:

To track and display live COVID-19 statistics globally and regionally.

‎To create a user-friendly mobile application with an intuitive interface.

‎To enable offline data access using local storage.

‎To increase public awareness by sharing safety guidelines and vaccination updates.

‎**3. Scope of the Project**

**‎**The COVID-19 Tracker App provides users with real-time COVID data such as:

‎Total confirmed cases

‎Active cases

‎Recoveries

‎Deaths

‎Country-wise and regional statistics

‎It also includes health tips, precautionary measures, and emergency contact information for public health support.

‎**4. System Design**

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‎a. Architecture

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‎1. Frontend (Flutter) – Displays COVID statistics, charts, and user interface elements.

‎2. Backend (API Integration) – Fetches live data from the COVID API.

‎3. Local Storage (SQLite) – Stores the most recent data for offline access.

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b. Modules

‎Dashboard Module: Displays global and local COVID-19 data.

‎Country Statistics Module: Allows users to select and view country-specific data.

‎Prevention Tips Module: Provides safety guidelines and health measures.

‎Local Storage Module: Saves data for offline viewing.

‎**5. Implementation**

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‎The app uses RESTful API calls to fetch live COVID-19 data and updates the UI dynamically. The most recent data is cached in local storage using SQLite or SharedPreferences. When offline, the app displays previously stored information to ensure continuous usability.

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‎**6. Features**

‎ Real-time global and regional COVID-19 updates

‎ Graphs showing daily and cumulative trends

‎ Offline data access through local storage

‎ Vaccination statistics and health alerts

‎ Safety tips and precautionary measures

‎ Simple and responsive user interface

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**7. Advantages**

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Provides reliable, real-time COVID-19 information.

‎Works in offline mode.

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‎Lightweight and efficient mobile app.

‎Easy to use for all age groups.

Encourages public health awareness and safety.

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**8. Limitations**

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‎Depends on the availability of public APIs.

‎Requires internet connection for data updates.

‎API rate limits may affect frequent updates.

**9. Future Enhancements**

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‎Add notifications for new updates and safety alerts.

‎Integrate vaccination center locators.

‎Implement AI-based health risk prediction.

‎Include voice-based interaction and multilingual support.

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**10. Conclusion**

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‎The COVID-19 Tracker App is an essential tool for monitoring the pandemic and spreading awareness. It combines real-time data analysis with user-friendly visualization, helping users stay informed and take timely preventive measures. With continuous improvements, it can evolve into a comprehensive public health tracking system.

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**11. References**

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‎World Health Organization (WHO)

‎COVID-19 API Documentation

Flutter Documentation – https://flutter.dev

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