**Affordable Medication Finder**

**Application Structure Overview:**

1. **Welcome Screen**:
   * Display the application name and menu options.
   * Options for registration/login and general access.
2. **Menu Options**:
   * Present a list of features based on the user role (General User or Registered User).
3. **Search Functionality**:
   * Users can search medications or pharmacies by name or location.
   * Display a list of results with details.
4. **Prescription Management**:
   * Registered users can add, view, or delete prescriptions.
   * Set reminders for specific prescriptions.
5. **Refill Reminder System**:
   * Reminders are displayed when the user logs in if the refill date is near.
6. **Favorites**:
   * Registered users can save favorite medications and pharmacies for future access.
7. **Financial Assistance**:
   * General users can view information about discount programs and alternatives.
8. **Exit**:
   * Option to exit the application safely.
   * Online resources for free or low-cost medication.

**Hierarchy of the Project**

**A. User Roles:**

1. **General User**:
   * Search medications.
   * Find nearby pharmacies.
   * View information about financial assistance programs.
2. **Registered User**:
   * Log prescriptions.
   * Track refill dates with reminders.
   * Save favorite medications or pharmacies.
3. **Admin Features (Optional):**
4. Manage pharmacy data.
5. Manage medication data (add, update, delete).

**B. Core Modules:**

1. **User Authentication** (Optional for console-based):
   * Registration: Collect basic details (name, email/username, password).
   * Login: Allow returning users to access personalized features.
2. **Medication Search**:
   * Search medications by name or generic alternatives.
   * Display pricing, pharmacies, and availability.
3. **Pharmacy Locator**:
   * Allow users to search for pharmacies by zip code or city.
   * Include details like distance and pricing.
4. **Prescription Management** (For Registered Users):
   * Log prescriptions: Name, dosage, frequency, and refill date.
   * View prescription history.
   * Update or delete prescriptions.
5. **Refill Reminder System**:
   * Notify users of upcoming refill dates when they log in.
   * Allow users to set or update reminders.
6. **Financial Assistance Resources**:
   * Provide information about discount programs, generic drug options, and patient assistance programs.
7. **Drug Information**:
   * Display details about a drug, including its use, side effects, and precautions.
8. **Favorites List** (For Registered Users):
   * Save favorite medications for quick access.
   * Save favorite pharmacies for convenience.

**C. Data Management:**

1. **Medication Data**:
   * Store details like name, price, generic alternatives, and pharmacy location.
2. **Pharmacy Data**:
   * Store details like pharmacy name, location, pricing, and available drugs.
3. **User Data**:
   * For registered users: Store prescriptions, reminders, and favorites.

**General User Features:**

1. **Search**:
   * Search for medication or pharmacy by name.
2. **Filter and Sort**:
   * Filter results by price, availability, or distance.
   * Sort results by price or proximity.

**Registered User Features:**

1. **Prescription Tracker**:
   * Add, view, update, or delete prescriptions.
2. **Refill Reminder**:
   * Notify about upcoming refills.
3. **Saved Favorites**:
   * Quickly access saved medications or pharmacies.

**Admin Features (Optional):**

* Manage medication data (add, update, delete).
* Manage pharmacy data.

/affordable\_medication\_finder

├── main.dart # Entry point of the application

├── data/ # Contains predefined data and related logic

│ ├── medications.dart # Predefined medication details

│ ├── pharmacies.dart # Predefined pharmacy details

├── general\_user/ # Folder for General User-specific features

│ ├── general\_user\_menu.dart # Displays the General User menu

│ ├── search\_medication.dart # Handles medication and pharmacy searches

│ ├── financial\_assistance.dart # Displays financial assistance details

├── registered\_user/ # Folder for Registered User-specific features

│ ├── registered\_user\_menu.dart # Displays the Registered User menu

│ ├── search\_medication.dart # Handles medication and pharmacy searches

│ ├── financial\_assistance.dart # Displays financial assistance details

│ ├── prescription\_manager.dart # Manage prescriptions (add, view, delete)

│ ├── refill\_reminder.dart # Handles refill reminders

│ ├── favorites.dart # Manage favorite medications and pharmacies

├── utils/ # Utility functions for menus and navigation

│ ├── menu\_helper.dart # Functions to display menus and handle user input

│ ├── navigation.dart # Logic to handle redirection between modules

│ ├── constants.dart # Constants for menu options and messages

**Explanation of Files and Their Purpose**

**1. main.dart**

* The entry point of the application.
* Manages high-level application flow:
  + Displays the welcome screen.
  + Routes the user to General User Menu or Registered User Menu based on their selection.

**2. /data Folder**

* **medications.dart**: Contains predefined medication details like name, price, and availability.
* **pharmacies.dart**: Contains predefined pharmacy details like name, location, and inventory.
* **users.dart**: Manages user data such as registration, login credentials, prescriptions, and saved favorites.

**3. /modules Folder**

* **welcome\_screen.dart**: Handles the welcome screen and options to choose between general user, registered user, or exit.
* **authentication.dart**: Logic for user registration and login.
* **medication\_search.dart**: Implements the medication and pharmacy search functionality.
* **pharmacy\_locator.dart**: Allows users to search for pharmacies by location or proximity.
* **prescription\_manager.dart**: Provides features to add, view, update, and delete prescriptions.
* **reminders.dart**: Logic for managing and displaying refill reminders.
* **financial\_assistance.dart**: Displays information about discount programs and affordable alternatives.
* **favorites.dart**: Manages saving and accessing favorite medications and pharmacies.

**4. /utils Folder**

* **menu.dart**: Functions for displaying menus and handling user input.
* **navigation.dart**: Contains redirection logic to move between different modules or pages.
* **constants.dart**: Stores constant strings like menu options, error messages, or success messages.
* **validators.dart**: Validates user input (e.g., checks if a username is valid or a prescription refill date is correct).

**5. /test Folder**

* **test\_data.dart**: Provides sample data to test functionalities without needing real user input.
* **test\_functions.dart**: Unit tests for individual modules like search, prescription management, and reminders.

**6. README.md**

* A document that provides:
  + Project overview.
  + Features.
  + Setup and usage instructions.

**7. LICENSE (Optional)**

* Specifies the licensing terms for the project.

This structure ensures the project is modular, easy to navigate, and scalable as you add features or modify functionalities.

**Flowchart and explanation**

**Flowchart**

START

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Welcome Screen

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[General User] [Registered User]

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[Main Menu] [Login / Register]

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[General User Menu] [Registered User Menu]

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Search Medication/Pharmacy Prescription Management

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v Refill Reminder System

Financial Assistance |

| v

v Save Favorites (Med/Pharmacy)

Exit |

| |

v v

[Logout / Exit]

**Detailed Steps for the Flow**

**1. Welcome Screen**

* **What to Show**:
  + "Welcome to Affordable Medication Finder!"
  + Options:
    1. General User
    2. Registered User
    3. Exit
* **Redirect Options**:
  + **General User**: Goes to General User Menu.
  + **Registered User**: Goes to Login/Registration screen.
  + **Exit**: Ends the program.

**2. General User Menu**

* **What to Show**:
  + Options:
    1. Search Medication/Pharmacy
    2. View Financial Assistance
    3. Exit
* **Redirect Options**:
  + **Search Medication/Pharmacy**: Displays search input (e.g., name, location).
  + **View Financial Assistance**: Displays information about discount programs and generic alternatives.
  + **Exit**: Ends the program.

**3. Registered User Flow**

* **Login/Registration Screen**:
  + Prompt for login credentials or option to register.
  + If registered, verify and log in. If new, register the user and redirect to the Registered User Menu.

**4. Registered User Menu**

* **What to Show**:
  + Options:
    1. Search Medication/Pharmacy
    2. Prescription Management
    3. Refill Reminder System
    4. Save Favorites (Med/Pharmacy)
    5. Logout
* **Redirect Options**:
  + **Search Medication/Pharmacy**: Same as the General User flow.
  + **Prescription Management**: Allows adding, viewing, updating, and deleting prescriptions.
  + **Refill Reminder System**: Displays reminders for upcoming refills and allows users to update settings.
  + **Save Favorites**: Lets users save and access favorite medications or pharmacies.
  + **Logout**: Returns to the Welcome Screen.

**5. Search Medication/Pharmacy**

* **What to Show**:
  + Prompt: "Enter medication name or pharmacy location:"
  + Display search results with:
    - Medication name
    - Pharmacy name
    - Price and availability
* **Additional Filters**:
  + Filter by price or distance.
  + Sort by proximity or price.

**6. Prescription Management**

* **What to Show**:
  + Options:
    1. Add Prescription
    2. View Prescription History
    3. Update/Delete Prescription
* **Redirect Options**:
  + **Add Prescription**: Prompts for medication name, dosage, and refill date.
  + **View Prescription History**: Lists logged prescriptions.
  + **Update/Delete Prescription**: Allows modification or removal of prescriptions.

**7. Refill Reminder System**

* **What to Show**:
  + "Upcoming Reminders:"
    - Medication name
    - Refill date
  + Options:
    - Update Reminder
    - Return to Main Menu

**8. Financial Assistance**

* **What to Show**:
  + General information about:
    - Discount programs.
    - Generic medication alternatives.
    - Low-cost pharmacies.

**9. Save Favorites**

* **What to Show**:
  + Options:
    1. Save Medication
    2. Save Pharmacy
    3. View Favorites
* **Redirect Options**:
  + **Save Medication**: Prompts for medication name to save.
  + **Save Pharmacy**: Prompts for pharmacy name to save.
  + **View Favorites**: Lists saved items.

**10. Exit**

* **What to Show**:
  + "Thank you for using Affordable Medication Finder. Stay healthy!"
* **Redirect**:
  + Ends the program.

**Example of Console Output**

**1. Welcome Screen**

Welcome to Affordable Medication Finder!

Please select an option:

1. General User

2. Registered User

3. Exit

**2. General User Menu**

General User Menu:

1. Search Medication/Pharmacy

2. View Financial Assistance

3. Exit

**3. Search Results**

Search Results:

1. Medication: Paracetamol

Price: $5

Available at: Pharmacy A, Pharmacy B

2. Medication: Ibuprofen

Price: $8

Available at: Pharmacy C

**4. Prescription Management**

Prescription Management:

1. Add Prescription

2. View Prescription History

3. Update/Delete Prescription

This breakdown should help you plan the workflow and ensure smooth navigation for users in your console-based Dart project.

**Here is the list of common diseases in the United States:**

**Chronic Diseases**

1. Heart Disease
2. Cancer
3. Chronic Lower Respiratory Diseases (e.g., COPD)
4. Stroke (Cerebrovascular Diseases)
5. Alzheimer’s Disease
6. Diabetes

**Infectious Diseases**

1. Chlamydia
2. Influenza (Flu)
3. Staphylococcus Aureus (Staph) Infections
4. Escherichia Coli (E. Coli) Infections
5. Herpes Simplex Virus (HSV) Infections

**Common Illnesses**

1. Allergies
2. Common Cold and Flu
3. Conjunctivitis ("Pink Eye")
4. Diarrheal Diseases
5. Headaches (including Migraines)
6. Mononucleosis ("Mono")
7. Stomach Aches