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# MedsMinder

## Description

The MedsMinder app allows user to input their prescription data, use the app to track their prescription history, and set reminders for taking their medication. With the help of the reminder system with medication images and description, MedsMinder makes patients' medication scheduling easier. MedsMinder also provides the user drug information such as generic name, description, indications and usage and warnings from openFDA service based on the prescription name.

## Intended User

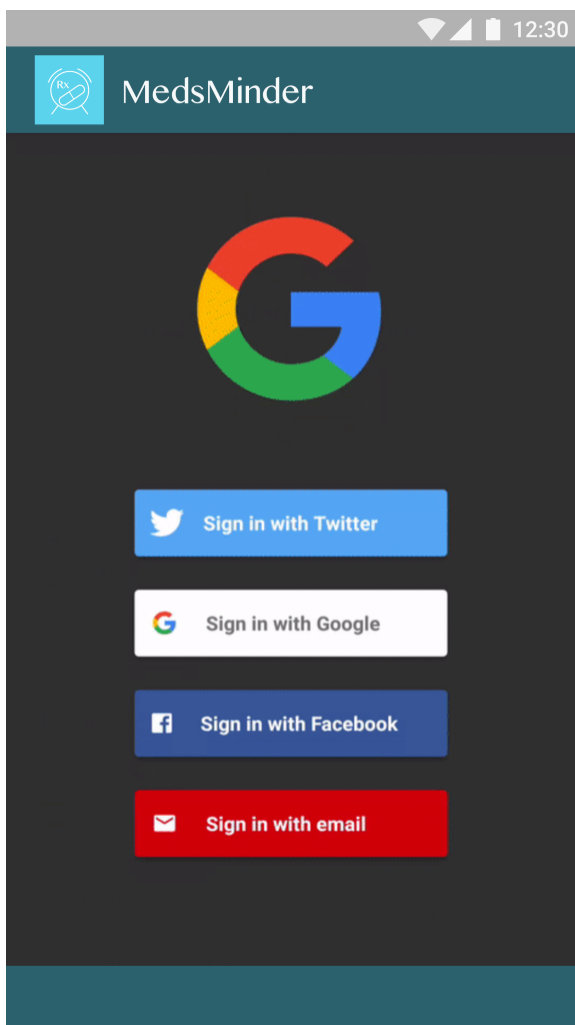
Anyone who has medical prescriptions.

## Features

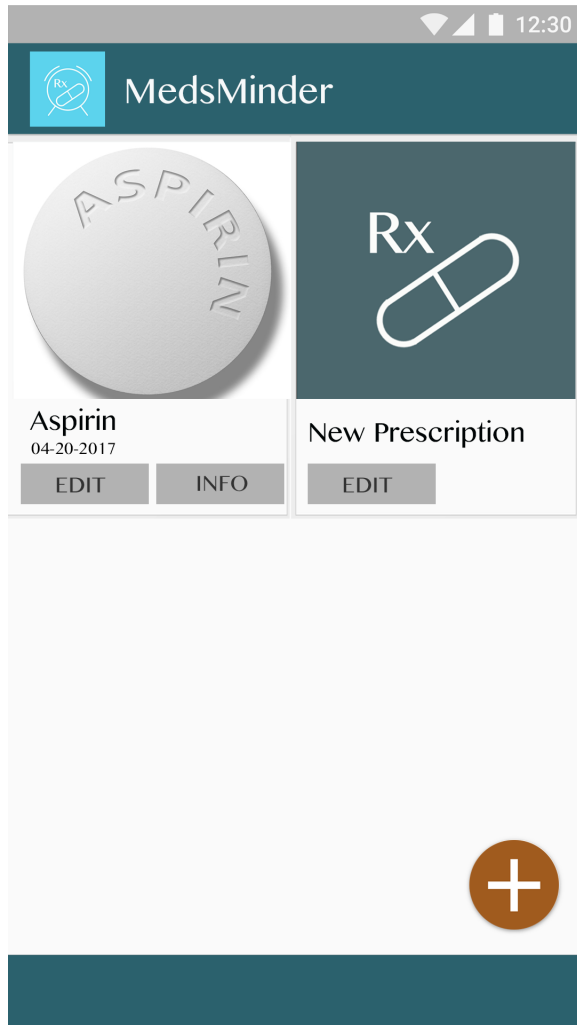
- Allows user to have a login account to keep their information safe
- Saves past prescription data in pictures and text format
- Customized reminder type and frequency
- View drug information such as generic name, description, indications and usage, and warnings from openFDA database
- Widget view for all available history prescriptions

## User Interface Mocks

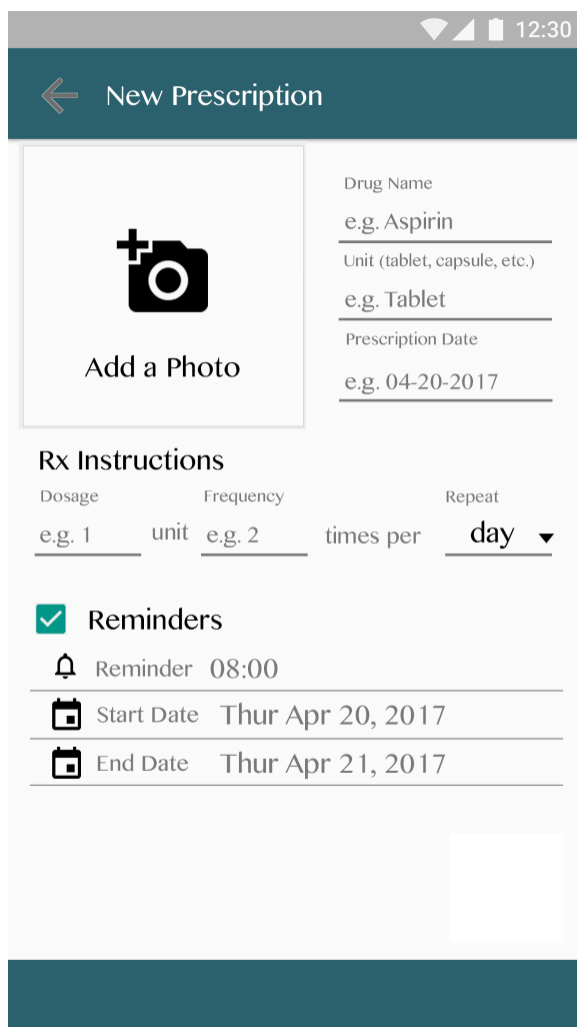
a. **Login Screen.** Screenshot captured from FirebaseUi-Android. Link here: [link](#). App will use FirebaseUi-Android for this login screen for all device family. This is the first screen user see when they open app. This screen allows them to choose/create an account to login with the app.



b. **Prescription Grid Page.** After login, user will be taken to this page. If no prescription data exists yet, a new prescription card will be displayed. Tapping on the new prescription card edit button or the floating action button can take user to the next screen for editing prescription. Tapping on the existing prescription edit button takes user to the editing page for the prescription. The info button on the existing prescription page takes user to the drug information page. The layout will look the same on phone/tablet, landscape/portrait, except for on tablet landscape, change to 3 cards per row.




**c. New Prescription Editing Page.** This page allows user to create a new prescription card by filling in necessary prescription data, including medication image, name, unit, date, and instructions. Reminders can be set for this prescription as well in this screen. Landscape layout looks the same as portrait, just adjust the input field length to fill up space on screen.



The image shows a mobile application screen titled "New Prescription". At the top, there is a status bar with a Wi-Fi icon, signal strength bars, a battery icon, and the time "12:30". Below the status bar is a dark teal header with a back arrow icon and the text "New Prescription". The main content area is light gray and contains several input fields and sections. On the left, there is a box with a camera icon and the text "Add a Photo". To the right of this box are three input fields: "Drug Name" with the example "e.g. Aspirin", "Unit (tablet, capsule, etc.)" with the example "e.g. Tablet", and "Prescription Date" with the example "e.g. 04-20-2017". Below these fields is a section titled "Rx Instructions" which contains three input fields: "Dosage" with the example "e.g. 1", "Frequency" with the example "unit e.g. 2", and "Repeat" with the example "times per day" and a dropdown arrow. Below the "Rx Instructions" section is a section titled "Reminders" with a checked checkbox. Under "Reminders" are three input fields: "Reminder" with the example "08:00", "Start Date" with the example "Thur Apr 20, 2017", and "End Date" with the example "Thur Apr 21, 2017". At the bottom of the screen, there is a dark teal bar.

12:30

← New Prescription

 Add a Photo

Drug Name  
e.g. Aspirin


Unit (tablet, capsule, etc.)  
e.g. Tablet


Prescription Date  
e.g. 04-20-2017


**Rx Instructions**

Dosage Frequency Repeat  
e.g. 1 unit e.g. 2 times per day ▼

☒ Reminders

 Reminder 08:00

 Start Date Thur Apr 20, 2017

 End Date Thur Apr 21, 2017

New Prescription

Add a Photo

Drug Name

e.g. Aspirin

---

Unit (tablet, capsule, etc.)

e.g. Tablet

---

Prescription Date

e.g. 04-20-2017

---

**Rx Instructions**

Dosage                      Frequency                      Repeat

e.g. 1                      unit e.g. 2                      times per                      day ▼

☒ Reminders

**d. Existing Prescription Editing Page.** This is an example page of the editing page for an existing prescription. Landscape view same as new prescription view above.

Aspirin Prescription

Drug Name

Aspirin

---

Unit (tablet, capsule, etc.)

Tablet

---

Prescription Date

04-20-2017

---

**Rx Instructions**

Dosage                      Frequency                      Repeat

1                      unit 2                      times per                      day ▼

☒ Reminders

Reminder 08:00

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Reminder 20:00

---

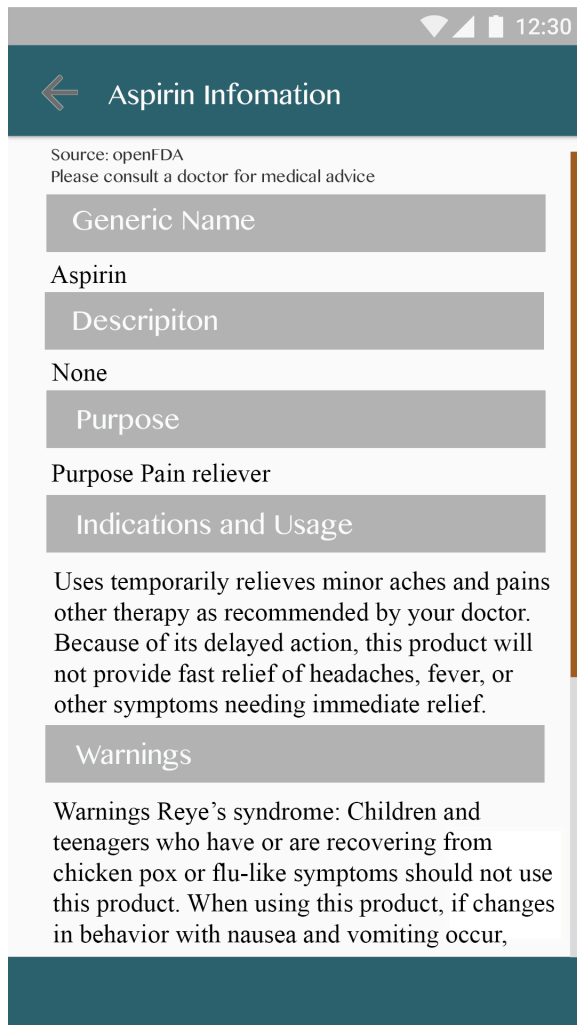
Start Date Thur Apr 20, 2017

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End Date Thur Apr 27, 2017

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**e. Drug Info Page.** This is an example page for an existing prescription. Information is acquired from openFDA web service based on prescription name that user has put in.



The screenshot shows a mobile application interface for "Aspirin Information". At the top, there is a status bar with a Wi-Fi icon, signal strength bars, a battery icon, and the time "12:30". Below this is a dark teal header with a back arrow icon and the text "Aspirin Infomation". The main content area is white and contains the following sections:


- Source:** openFDA  
**Please consult a doctor for medical advice**
- Generic Name:** Aspirin
- Descripiton:** None
- Purpose:** Purpose Pain reliever
- Indications and Usage:** Uses temporarily relieves minor aches and pains other therapy as recommended by your doctor. Because of its delayed action, this product will not provide fast relief of headaches, fever, or other symptoms needing immediate relief.
- Warnings:** Warnings Reye's syndrome: Children and teenagers who have or are recovering from chicken pox or flu-like symptoms should not use this product. When using this product, if changes in behavior with nausea and vomiting occur,


**f. Notification.** This is an example notification for the reminder

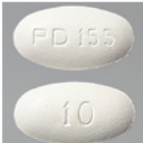


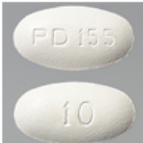
The screenshot shows a notification from "MedsMinder". It features a blue pill icon with "Rx" on the left. The text reads: "Time to take 1 tablet of Aspirin" and "Reminder at 8 am, Thur Apr 20, 2017". On the right side, there is a 3D rendering of a white, round aspirin tablet with "ASPIRIN" embossed on it.

**g. Widget.** This is an example widget view for the reminder. In the widget view, all the prescriptions user has created are listed.

 **MedsMinder**

**Aspirin**  
1 tablet 2 times per day  
Apr. 20, 2017 to Apr. 27, 2017

**Lipitor**  
1 tablet 1 times per day  
Mar. 20, 2017 to Apr. 20, 2017

**Lipitor**  
1 tablet 1 times per day  
Feb. 20, 2017 to Mar. 20, 2017

## Key Considerations

### How will your app handle data persistence?

A new local database will be created with ContentProvider for prescription information. Images will be saved into local file system.

### Describe any corner cases in the UX.

1. When the user input prescription cannot be found in the openFDA database, the drug info page will only display a blank page with message “ The information cannot be found.”
2. When the user is offline, openFDA web service cannot be connected, the drug info page will only display a blank page with message “ No internet connection. Please check internet connection and try later.”
3. When the user has not created any prescription, the widget will only have a blank list item with a message “ No prescription created yet.”

### Describe any libraries you'll be using and share your reasoning for including them.

1. Firebase Authentication: provide a way to associate user data with user id and also a way to protect user data. Moreover, this provides potential for future app expansion such as cloud database integration.
2. FirebaseUI-Android: login UI for firebase authentication. Log in UI is quite standard. Use this library to bring user a familiar user experience. At the same time reduce repetitive development.
3. Picasso image: manage image loading and sizing from local file system
4. Firebase Analytics: provide a way to observe market response such as which groups of users are more interested in using such app.

### Describe how you will implement Google Play Services.

1. App will use the firebase authentication to provide user a way to login to app.
2. App will use firebase analytics: provide a way to observe market response.

## Next Steps: Required Tasks



This is the section where you can take the main features of your app (declared above) and decompose them into tangible technical tasks that you can complete incrementally until you have a finished app.

### **Task 1: Project Setup**

Create Project and import all necessary libraries

### **Task 2: Data Implementation**

1. Design database structure and build database contract
2. Create ContentProvider for database

### **Task 3: Implement web service**

1. implement AsyncTaskLoader for HTTP request to api.fda.gov
2. implement JSON response parser

### **Task 4: Create UI Activities**

1. Build MainActivity with GridView and FloatingActionButton
2. Build PrescriptionDetailActivity
3. Build DrugInfoActivity
3. Use CursorLoader to populate data to MainActivity and PrescriptionDetailActivity
4. Use the HTTP request AsyncTaskLoader to populate DrugInfoActivity

### **Task 5: Create Reminder Notification**

1. Build Notification view
2. Setup alarms with AlarmManager to show notification

### **Task 6: Integrate Firebase Analytics**