

Tổng hợp mã nguồn dự án: SmartBloodDonationAndroid

.gitignore

```
*.iml
.gradle
/local.properties
/.idea/caches
/.idea/libraries
/.idea/modules.xml
/.idea/workspace.xml
/.idea/navEditor.xml
/.idea/assetWizardSettings.xml
.DS_Store
/build
/captures
.externalNativeBuild
.cxx
local.properties
```

README.md

```
# SmartBloodDonation
'''
```

```
SmartBloodDonation/
├── build.gradle.kts           // File build Gradle của project
├── settings.gradle.kts       // Khai báo các module của project
├── gradle/
│
├── app/                      // Module chính, nơi ghép nối các module feature
│   ├── build.gradle.kts
│   └── src/main/
│       ├── java/com/smartblood/donation/ // <- Package name của app
│       │   ├── MainApplication.kt
│       │   ├── MainActivity.kt
│       │   └── di/
│       │       └── AppModule.kt
│       ├── features/         // **THÊM MỚI: Chứa các màn hình của app**
│       │   └── dashboard/
│       │       ├── DashboardScreen.kt // **UI của Dashboard**
│       │       └── DashboardViewModel.kt // **ViewModel của Dashboard**
```

```

└─ navigation/          // Quản lý điều hướng toàn ứng dụng
  └─ AppNavHost.kt
  └─ BottomNavItem.kt  // **THÊM MỚI: Định nghĩa các mục cho Bottom Nav**
    └─ Screen.kt
└─ ui/                  // **THÊM MỚI: Chứa các Composable dùng chung của app**
  └─ MainScreen.kt     // **Màn hình chính chứa Bottom Nav và NavHost con**
└─ res/

└─ core/                // Module lõi chứa code dùng chung
  └─ build.gradle.kts
  └─ src/main/java/com/smartblood/core/
    └─ data/
      └─ local/
        └─ AppDatabase.kt // Lớp trừu tượng của Room DB
      └─ network/
        └─ ApiClient.kt  // Cấu hình Retrofit, OkHttp
        └─ AuthInterceptor.kt
    └─ domain/
      └─ model/
        └─ Result.kt     // Lớp Result wrapper chung (Success, Error)
    └─ ui/
      └─ components/     // Các Composable dùng chung toàn app
        └─ LoadingDialog.kt
        └─ ErrorMessage.kt
        └─ PrimaryButton.kt
      └─ theme/           // Theme, Color, Typography, Shape
        └─ Color.kt
        └─ Shape.kt
        └─ Theme.kt
        └─ Type.kt
    └─ util/             // Các lớp tiện ích, extensions
      └─ Constants.kt
      └─ extensions/
        └─ StringExt.kt

└─ feature_auth/        // Module tính năng: Xác thực
  └─ build.gradle.kts
  └─ src/main/java/com/smartblood/auth/
    └─ data/
      └─ local/          // Dữ liệu cục bộ (ví dụ: lưu session token)
        └─ AuthLocalDataSource.kt
      └─ mapper/         // Ánh xạ giữa DTO -> Domain Model

```

```

|   |   └─ UserMapper.kt
|   └─ remote/
|       └─ AuthApiService.kt // Interface Retrofit/Firebase function
|           └─ dto/           // Data Transfer Objects
|               └─ LoginRequestDto.kt
|                   └─ UserDto.kt
|   └─ repository/
|       └─ AuthRepositoryImpl.kt // Implement interface từ Domain
└─ domain/
    └─ model/           // Model sạch, chỉ chứa logic nghiệp vụ
        └─ User.kt
    └─ repository/
        └─ AuthRepository.kt // Interface (Hợp đồng) cho repository
    └─ usecase/         // Các trường hợp sử dụng cụ thể
        └─ LoginUseCase.kt
        └─ RegisterUseCase.kt
        └─ PerformFaceAuthUseCase.kt
└─ di/                 // DI cho module auth
    └─ AuthModule.kt
└─ ui/
    └─ navigation/     // Điều hướng trong feature
        └─ AuthNavigation.kt
    └─ login/
        └─ LoginScreen.kt
        └─ LoginViewModel.kt
        └─ LoginContract.kt // Định nghĩa State, Event, Effect
    └─ register/
        └─ RegisterScreen.kt
        └─ RegisterViewModel.kt
        └─ RegisterContract.kt
    └─ splash/         // **THÊM MỚI: Màn hình Splash**
        └─ SplashScreen.kt
        └─ SplashViewModel.kt

└─ feature_profile/   // Module tính năng: Hồ sơ
    └─ build.gradle.kts
    └─ src/main/java/com/smartblood/profile/
        └─ data/
            └─ mapper/
                └─ DonationHistoryMapper.kt
            └─ remote/...
            └─ repository/
                └─ ProfileRepositoryImpl.kt

```

```

└─ domain/
  └─ model/
    ├── UserProfile.kt
    └── DonationRecord.kt
  └─ repository/
    └── ProfileRepository.kt
  └─ usecase/
    ├── GetUserProfileUseCase.kt
    ├── GetDonationHistoryUseCase.kt
    └── CalculateNextDonationDateUseCase.kt // **THÊM MỚI**
└─ di/
  └── ProfileModule.kt
└─ ui/
  ├── navigation/
  │   └── ProfileNavigation.kt
  ├── profile/ // **CẬP NHẬT: Cấu trúc lại cho gọn**
  │   ├── ProfileScreen.kt
  │   ├── ProfileViewModel.kt
  │   └── ProfileContract.kt
  ├── edit/ // **CẬP NHẬT: Màn hình chỉnh sửa**
  │   └── EditProfileScreen.kt
  ├── history/ // **CẬP NHẬT: Cấu trúc lại**
  │   ├── DonationHistoryScreen.kt
  │   └── DonationHistoryViewModel.kt
feature_map_booking/
└─ src/main/java/com/smartblood/mapbooking/
  └─ data/
    ├── local/
    │   ├── dao/
    │   │   └── HospitalDao.kt // Interface Room DAO cho Hospital
    │   └── entity/
    │       └── HospitalEntity.kt // Bảng Hospital trong DB cục bộ để cache
    ├── mapper/
    │   ├── HospitalMapper.kt // Chuyển đổi HospitalEntity/Dto -> Hospital
    │   └── AppointmentMapper.kt // Chuyển đổi AppointmentDto -> Appointment
    ├── remote/
    │   ├── MapBookingApiService.kt // Interface Retrofit/Firebase cho API bản đồ
    │   └── dto/
    │       ├── HospitalDto.kt // DTO cho thông tin bệnh viện
    │       ├── AvailableSlotsDto.kt // DTO cho các khung giờ còn trống
    │       └── BookingRequestDto.kt // DTO để gửi yêu cầu đặt lịch
    └─ repository/

```

```

├── MapBookingRepositoryImpl.kt // Triển khai repository, quyết định lấy dữ liệu
    từ local/remote
├── domain/
│   ├── model/
│   │   ├── Hospital.kt // Model sạch của Bệnh viện
│   │   ├── Appointment.kt // Model sạch của Lịch hẹn
│   │   └── TimeSlot.kt // Model sạch của Khung giờ
│   ├── repository/
│   │   └── MapBookingRepository.kt // Interface định nghĩa các hàm cần thiết
│   │       (getHospitals, bookAppointment,...)
│   └── usecase/
│       ├── GetNearbyHospitalsUseCase.kt // Use case lấy danh sách bệnh viện gần đây
│       ├── GetHospitalDetailsUseCase.kt // Use case lấy chi tiết một bệnh viện
│       ├── GetAvailableSlotsUseCase.kt // Use case lấy các khung giờ trống
│       └── BookAppointmentUseCase.kt // Use case thực hiện đặt lịch hẹn
├── di/
│   └── MapBookingModule.kt // Hilt module cung cấp Repository và Use Cases
├── ui/
│   ├── navigation/
│   │   └── MapBookingNavigation.kt // Định nghĩa các route và hàm điều hướng cho
module
│   └── map/
│       ├── components/
│       │   ├── HospitalMarker.kt // Composable cho marker trên bản đồ
│       │   └── FilterBottomSheet.kt // Composable cho bộ lọc
│       ├── MapScreen.kt // Màn hình chính hiển thị bản đồ
│       └── MapViewModel.kt // ViewModel quản lý state bản đồ, danh sách bệnh
viện
│   ├── MapContract.kt // Định nghĩa State, Event, Effect cho MapScreen
│   ├── location_detail/
│   │   ├── LocationDetailScreen.kt // Màn hình hiển thị chi tiết một địa điểm
│   │   └── LocationDetailViewModel.kt // ViewModel lấy dữ liệu chi tiết
│   └── booking/
│       ├── components/
│       │   ├── CalendarView.kt // Composable cho giao diện lịch
│       │   └── TimeSlotGrid.kt // Composable cho lưới chọn giờ
│       ├── BookingScreen.kt // Màn hình đặt lịch
│       └── BookingViewModel.kt // ViewModel xử lý logic chọn ngày/giờ và đặt lịch
feature_emergency/
└── src/main/java/com/smartblood/emergency/

```

```

└─ data/
  └─ mapper/
    └─ BloodRequestMapper.kt    // Chuyển đổi BloodRequestDto -> BloodRequest
  └─ remote/
    └─ EmergencyApiService.kt   // Interface cho các API liên quan đến yêu cầu
khẩn cấp
└─ dto/
  └─ BloodRequestDto.kt        // DTO cho yêu cầu máu
  └─ CreateRequestDto.kt       // DTO để tạo yêu cầu mới
  └─ repository/
    └─ EmergencyRepositoryImpl.kt // Triển khai repository

└─ domain/
  └─ model/
    └─ BloodRequest.kt          // Model sạch cho yêu cầu máu
    └─ RequestStatus.kt        // Enum cho trạng thái yêu cầu (PENDING, ACTIVE,
COMPLETED)
  └─ repository/
    └─ EmergencyRepository.kt   // Interface repository
  └─ usecase/
    └─ CreateEmergencyRequestUseCase.kt // Use case tạo yêu cầu khẩn cấp
    └─ GetMyRequestsUseCase.kt    // Use case lấy danh sách các yêu cầu đã tạo

└─ di/
  └─ EmergencyModule.kt         // Hilt module

└─ ui/
  └─ navigation/
    └─ EmergencyNavigation.kt    // Điều hướng trong module
  └─ create_request/
    └─ CreateRequestScreen.kt     // Màn hình form tạo yêu cầu
    └─ CreateRequestViewModel.kt // ViewModel xử lý validation và gửi form
    └─ CreateRequestContract.kt  // Định nghĩa State, Event, Effect
  └─ manage_requests/
    └─ components/
      └─ RequestListItem.kt      // Composable hiển thị một yêu cầu trong danh sách
    └─ ManageRequestsScreen.kt    // Màn hình danh sách các yêu cầu đã tạo
    └─ ManageRequestsViewModel.kt // ViewModel lấy và quản lý danh sách yêu cầu
feature_chatbot/
└─ src/main/java/com/smartblood/chatbot/
  └─ data/
    └─ local/
      └─ dao/

```

```

├── ┌── ChatMessageDao.kt    // Room DAO để lưu lịch sử chat
│   ├── entity/
│   │   └── ChatMessageEntity.kt // Bảng ChatMessage trong DB
│   ├── mapper/
│   │   └── ChatMessageMapper.kt // Chuyển đổi giữa Entity/Dto và Model
│   ├── remote/
│   │   ├── ChatbotApiService.kt // Interface API để giao tiếp với Dialogflow/Gemini
│   │   └── dto/
│   │       ├── ChatRequestDto.kt // DTO gửi tin nhắn lên server
│   │       └── ChatResponseDto.kt // DTO nhận tin nhắn trả về
│   └── repository/
│       └── ChatbotRepositoryImpl.kt // Triển khai repository, gửi tin nhắn và lưu lịch sử
└── domain/
    ├── model/
    │   ├── ChatMessage.kt // Model sạch cho một tin nhắn
    │   └── SenderType.kt // Enum người gửi (USER, BOT)
    ├── repository/
    │   └── ChatbotRepository.kt // Interface repository
    └── usecase/
        ├── SendMessageUseCase.kt // Use case gửi một tin nhắn
        └── GetChatHistoryUseCase.kt // Use case lấy lịch sử cuộc trò chuyện
└── di/
    └── ChatbotModule.kt // Hilt module
└── ui/
    ├── navigation/
    │   └── ChatbotNavigation.kt // Điều hướng cho màn hình chat
    └── chat/
        ├── components/
        │   ├── ChatBubble.kt // Composable cho bong bóng chat (gửi và nhận)
        │   ├── MessageInputField.kt // Composable cho ô nhập tin nhắn
        │   └── TypingIndicator.kt // Composable cho hiệu ứng "Bot is typing..."
        ├── ChatbotScreen.kt // Màn hình chat chính
        └── ChatbotViewModel.kt // ViewModel quản lý danh sách tin nhắn, trạng thái
đang gõ
    └── ChatbotContract.kt // Định nghĩa State, Event, Effect
...

```

HƯỚNG DẪN CÀI ĐẶT VÀ CHẠY DỰ ÁN (PROJECT SETUP GUIDE)

Quy trình này sẽ hướng dẫn bạn cách clone, cài đặt và chạy dự án **Smart Blood Donation** trên máy tính của bạn.

Giai đoạn 0: Yêu Cầu Cần Có (Prerequisites)

Trước khi bắt đầu, hãy đảm bảo máy tính của bạn đã cài đặt các công cụ sau:

1. **Git:** Hệ thống quản lý phiên bản. Nếu chưa có, bạn có thể tải tại git-scm.com.
2. **Android Studio:** Môi trường phát triển chính. Khuyến nghị sử dụng phiên bản mới nhất (Iguana 2023.2.1 hoặc mới hơn).
 - * Tải tại: developer.android.com/studio
 - * Trong quá trình cài đặt, hãy đảm bảo bạn đã chọn cài đặt **Android SDK**. Android Studio thường sẽ tự động cài đặt JDK (Java Development Kit) đi kèm, vì vậy bạn không cần cài đặt Java riêng.

Giai đoạn 1: Lấy Mã Nguồn Dự Án (Cloning the Repository)

Bạn cần sao chép (clone) mã nguồn từ GitHub về máy tính của mình.

1. **Lấy URL của Repository**
 - * Truy cập trang repository của dự án trên GitHub.
 - * Nhấn vào nút màu xanh lá **"<> Code"**.
 - * Chọn tab **HTTPS** và sao chép URL. (Ví dụ: `https://github.com/TenNguoiDung/SmartBloodDonation-Android.git`)

2. **Thực hiện Clone:**

Bạn có thể dùng một trong hai cách sau:

- * **Cách A: Dùng Terminal (Command Line)**

```
```bash
Mở Terminal (hoặc Git Bash trên Windows)
Di chuyển đến thư mục bạn muốn lưu dự án (ví dụ: D:\Projects)
cd D:\Projects

Chạy lệnh clone với URL bạn đã sao chép
git clone https://github.com/TenNguoiDung/SmartBloodDonation-Android.git

Di chuyển vào thư mục dự án vừa được tạo
cd SmartBloodDonation-Android
```
```


- * **Cách B: Dùng Android Studio (Khuyến khích)**
- * Mở Android Studio.
- * Trên màn hình chào mừng, chọn **"Get from VCS"** (Lấy từ Hệ thống quản lý phiên bản).
- * Dán URL bạn đã sao chép vào ô **URL**.
- * Chọn thư mục trên máy tính của bạn ở ô **Directory**.
- * Nhấn **"Clone"**. Android Studio sẽ tự động tải dự án về và mở nó ra.

Giai đoạn 2: Lần Mở Đầu Tiên và Đồng Bộ Hóa Gradle (First Open & Sync)

Đây là bước tự động nhưng quan trọng nhất. Hãy kiên nhẫn.

1. **Mở Dự Án:**

- * Nếu bạn dùng cách B, dự án sẽ được mở tự động.
- * Nếu bạn dùng cách A, trong Android Studio, chọn **File -> Open** và trở đến thư mục `'SmartBloodDonation-Android'` bạn vừa clone về.

2. **Chờ Đợi Quá Trình Đồng Bộ Hóa Tự Động:**

- * Ngay khi dự án được mở, Android Studio sẽ bắt đầu một loạt các tác vụ nền. Bạn có thể theo dõi tiến trình ở thanh trạng thái dưới cùng bên phải.
- * **Điều gì đang xảy ra?**
 - * Android Studio đọc file `'gradle/wrapper/gradle-wrapper.properties'` và thấy dự án yêu cầu **Gradle phiên bản 8.6**.
 - * Nó sẽ **tự động tải về Gradle 8.6** (việc này có thể mất vài phút nếu đây là lần đầu bạn dùng phiên bản này).
 - * Sau đó, Gradle sẽ đọc tất cả các file `'build.gradle.kts'`, `'settings.gradle.kts'`, và `'gradle/libs.versions.toml'`.
 - * Nó sẽ **tải về tất cả các thư viện (dependencies)** và **plugins** được định nghĩa trong dự án.
 - * Cuối cùng, nó sẽ lập chỉ mục (indexing) toàn bộ file trong dự án.

LƯU Ý QUAN TRỌNG: **KHÔNG LÀM GÌ CẢ** cho đến khi tất cả các thanh tiến trình ở góc dưới bên phải biến mất và bạn không còn thấy thông báo "Syncing project..." hay "Gradle build running...". Việc can thiệp có thể làm hỏng quá trình cài đặt ban đầu.

Giai đoạn 3: Build và Chạy Ứng Dụng

Sau khi quá trình đồng bộ hoàn tất, bạn đã sẵn sàng để chạy ứng dụng.

1. **Chọn Thiết Bị Chạy:**

- * Ở thanh công cụ trên cùng, bạn sẽ thấy một danh sách thả xuống các thiết bị (thường có chữ 'app' bên cạnh).
- * **Nếu dùng máy thật:** Kết nối điện thoại của bạn với máy tính và bật chế độ **USB**

Debugging" (Gỡ lỗi qua USB) trong Tùy chọn nhà phát triển.

* Nếu dùng máy ảo: Chọn một máy ảo có sẵn. Nếu chưa có, hãy vào **Tools -> Device Manager** để tạo một máy ảo mới (khuyến nghị API 34).

2. Chạy Ứng Dụng:

* Nhấn vào nút **Run 'app'** (biểu tượng hình tam giác màu xanh lá cây) ở thanh công cụ trên cùng.

* Gradle sẽ biên dịch toàn bộ dự án. Lần build đầu tiên có thể mất vài phút.

* Nếu không có lỗi, ứng dụng sẽ được cài đặt và tự động mở trên thiết bị bạn đã chọn.

Giai đoạn 4: Xử Lý Các Vấn Đề Thường Gặp (Troubleshooting)

Nếu bạn gặp lỗi trong quá trình build, hãy thử các bước sau theo thứ tự:

1. Clean and Rebuild Project:

* Vào **Build -> Clean Project**.

* Sau khi hoàn tất, vào **Build -> Rebuild Project**.

2. Invalidate Caches / Restart (Giải pháp hiệu quả nhất):

* Đây là cách giải quyết hầu hết các lỗi "kỳ lạ" của Gradle hoặc Android Studio.

* Vào **File -> Invalidate Caches...**

* Trong hộp thoại hiện ra, tick vào ô đầu tiên và nhấn **"Invalidate and Restart"**.

Android Studio sẽ khởi động lại và dọn dẹp toàn bộ cache.

3. Kiểm Tra Lại SDK Location:

* Vào **File -> Project Structure... -> SDK Location**.

* Đảm bảo đường dẫn Android SDK là chính xác. Nếu không, hãy chọn lại.

build.gradle.kts

// Top-level build file where you can add configuration options common to all sub-projects/modules.

```
plugins {  
    alias(libs.plugins.android.application) apply false  
    alias(libs.plugins.kotlin.android) apply false  
    // alias(libs.plugins.kotlin.compose) apply false  
    alias(libs.plugins.android.library) apply false  
    alias(libs.plugins.hilt) apply false  
    alias(libs.plugins.ksp) apply false  
    alias(libs.plugins.google.services) apply false  
    alias(libs.plugins.firebase.crashlytics) apply false
```

```
alias(libs.plugins.android.secrets.gradle.plugin) apply false
}
```

gradle.properties

```
# Project-wide Gradle settings.
# IDE (e.g. Android Studio) users:
# Gradle settings configured through the IDE *will override*
# any settings specified in this file.
# For more details on how to configure your build environment visit
# http://www.gradle.org/docs/current/userguide/build_environment.html
# Specifies the JVM arguments used for the daemon process.
# The setting is particularly useful for tweaking memory settings.
org.gradle.jvmargs=-Xmx2048m -Dfile.encoding=UTF-8
# When configured, Gradle will run in incubating parallel mode.
# This option should only be used with decoupled projects. For more details, visit
# https://developer.android.com/r/tools/gradle-multi-project-decoupled-projects
# org.gradle.parallel=true
# AndroidX package structure to make it clearer which packages are bundled with the
# Android operating system, and which are packaged with your app's APK
# https://developer.android.com/topic/libraries/support-library/androidx-rn
android.useAndroidX=true
# Kotlin code style for this project: "official" or "obsolete":
kotlin.code.style=official
# Enables namespacing of each library's R class so that its R class includes only the
# resources declared in the library itself and none from the library's dependencies,
# thereby reducing the size of the R class for that library
android.nonTransitiveRClass=true
```

gradlew

```
#!/bin/sh

#
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#
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```

```

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#

#####
#####
#
# Gradle start up script for POSIX generated by Gradle.
#
# Important for running:
#
# (1) You need a POSIX-compliant shell to run this script. If your /bin/sh is
#     noncompliant, but you have some other compliant shell such as ksh or
#     bash, then to run this script, type that shell name before the whole
#     command line, like:
#
#         ksh Gradle
#
# Busybox and similar reduced shells will NOT work, because this script
# requires all of these POSIX shell features:
#     * functions;
#     * expansions «$var», «${var}», «${var:-default}», «${var+SET}»,
#       «${var#prefix}», «${var%suffix}», and «$( cmd )»;
#     * compound commands having a testable exit status, especially «case»;
#     * various built-in commands including «command», «set», and «ulimit».
#
# Important for patching:
#
# (2) This script targets any POSIX shell, so it avoids extensions provided
#     by Bash, Ksh, etc; in particular arrays are avoided.
#
#     The "traditional" practice of packing multiple parameters into a
#     space-separated string is a well documented source of bugs and security
#     problems, so this is (mostly) avoided, by progressively accumulating
#     options in "$@", and eventually passing that to Java.
#
#     Where the inherited environment variables (DEFAULT_JVM_OPTS, JAVA_OPTS,
#     and GRADLE_OPTS) rely on word-splitting, this is performed explicitly;
#     see the in-line comments for details.
#
#     There are tweaks for specific operating systems such as AIX, CygWin,
#     Darwin, MinGW, and NonStop.

```

```

#
# (3) This script is generated from the Groovy template
#   https://github.com/gradle/gradle/blob/HEAD/platforms/jvm/plugins-
application/src/main/resources/org/gradle/api/internal/plugins/unixStartScript.txt
#   within the Gradle project.
#
#   You can find Gradle at https://github.com/gradle/gradle/.
#
#####
#####

# Attempt to set APP_HOME

# Resolve links: $0 may be a link
app_path=$0

# Need this for daisy-chained symlinks.
while
  APP_HOME=${app_path%"${app_path##*/}"} # leaves a trailing /; empty if no leading
path
  [ -h "$app_path" ]
do
  ls=$( ls -ld "$app_path" )
  link=${ls#*' -> '}
  case $link in
    /*) app_path=$link ;; #(
    *)  app_path=$APP_HOME$link ;;
  esac
done

# This is normally unused
# shellcheck disable=SC2034
APP_BASE_NAME=${0##*/}
# Discard cd standard output in case $CDPATH is set
(https://github.com/gradle/gradle/issues/25036)
APP_HOME=${ cd -P "${APP_HOME:-./}" > /dev/null && printf '%s\n' "$PWD" ) || exit

# Use the maximum available, or set MAX_FD != -1 to use that value.
MAX_FD=maximum

warn () {
  echo "$*"
} >&2

```

```

die () {
    echo
    echo "$*"
    echo
    exit 1
} >&2

```

OS specific support (must be 'true' or 'false').

```

cygwin=false
msys=false
darwin=false
nonstop=false
case "$(uname)" in
    CYGWIN*)    cygwin=true ;;
    Darwin*)    darwin=true ;;
    MSYS* | MINGW*) msys=true ;;
    NONSTOP*)   nonstop=true ;;
esac

```

```

CLASSPATH=""

```

Determine the Java command to use to start the JVM.

```

if [ -n "$JAVA_HOME" ] ; then
    if [ -x "$JAVA_HOME/jre/sh/java" ] ; then
        # IBM's JDK on AIX uses strange locations for the executables
        JAVACMD="$JAVA_HOME/jre/sh/java"
    else
        JAVACMD="$JAVA_HOME/bin/java"
    fi
    if [ ! -x "$JAVACMD" ] ; then
        die "ERROR: JAVA_HOME is set to an invalid directory: $JAVA_HOME

```

Please set the JAVA_HOME variable in your environment to match the location of your Java installation."

```

    fi
else
    JAVACMD=java
    if ! command -v java >/dev/null 2>&1
    then
        die "ERROR: JAVA_HOME is not set and no 'java' command could be found in your
PATH.

```

Please set the JAVA_HOME variable in your environment to match the location of your Java installation."

```
fi
fi
```

```
# Increase the maximum file descriptors if we can.
```

```
if ! "$cygwin" && ! "$darwin" && ! "$nonstop" ; then
```

```
  case $MAX_FD in #(
    max*)
```

```
    # In POSIX sh, ulimit -H is undefined. That's why the result is checked to see if it
    worked.
```

```
    # shellcheck disable=SC2039,SC3045
```

```
    MAX_FD=$( ulimit -H -n ) ||
```

```
    warn "Could not query maximum file descriptor limit"
```

```
  esac
```

```
  case $MAX_FD in #(
```

```
    " | soft) ;; #(
```

```
    *)
```

```
    # In POSIX sh, ulimit -n is undefined. That's why the result is checked to see if it worked.
```

```
    # shellcheck disable=SC2039,SC3045
```

```
    ulimit -n "$MAX_FD" ||
```

```
    warn "Could not set maximum file descriptor limit to $MAX_FD"
```

```
  esac
```

```
fi
```

```
# Collect all arguments for the java command, stacking in reverse order:
```

```
# * args from the command line
```

```
# * the main class name
```

```
# * -classpath
```

```
# * -D...appname settings
```

```
# * --module-path (only if needed)
```

```
# * DEFAULT_JVM_OPTS, JAVA_OPTS, and GRADLE_OPTS environment variables.
```

```
# For Cygwin or MSYS, switch paths to Windows format before running java
```

```
if "$cygwin" || "$msys" ; then
```

```
  APP_HOME=$( cygpath --path --mixed "$APP_HOME" )
```

```
  CLASSPATH=$( cygpath --path --mixed "$CLASSPATH" )
```

```
  JAVACMD=$( cygpath --unix "$JAVACMD" )
```

```
# Now convert the arguments - kludge to limit ourselves to /bin/sh
```

```
for arg do
```

```

if
  case $arg in
    -*) false ;;
    /*) t=${arg#/} t=/${t%%/*}      # looks like a POSIX filepath
      [ -e "$t" ] ;;
    *) false ;;
  esac
then
  arg=$( cygpath --path --ignore --mixed "$arg" )
fi
# Roll the args list around exactly as many times as the number of
# args, so each arg winds up back in the position where it started, but
# possibly modified.
#
# NB: a `for` loop captures its iteration list before it begins, so
# changing the positional parameters here affects neither the number of
# iterations, nor the values presented in `arg`.
shift      # remove old arg
set -- "$@" "$arg"  # push replacement arg
done
fi

```

Add default JVM options here. You can also use JAVA_OPTS and GRADLE_OPTS to pass JVM options to this script.

```
DEFAULT_JVM_OPTS="-Xmx64m" "-Xms64m"
```

Collect all arguments for the java command:

* DEFAULT_JVM_OPTS, JAVA_OPTS, and optsEnvironmentVar are not allowed to contain shell fragments,

and any embedded shellness will be escaped.

* For example: A user cannot expect \${Hostname} to be expanded, as it is an environment variable and will be

treated as '\${Hostname}' itself on the command line.

```

set -- \
  "-Dorg.gradle.appname=$APP_BASE_NAME" \
  -classpath "$CLASSPATH" \
  -jar "$APP_HOME/gradle/wrapper/gradle-wrapper.jar" \
  "$@"

```

Stop when "xargs" is not available.

```
if ! command -v xargs >/dev/null 2>&1
```



```

then
    die "xargs is not available"
fi

# Use "xargs" to parse quoted args.
#
# With -n1 it outputs one arg per line, with the quotes and backslashes removed.
#
# In Bash we could simply go:
#
# readarray ARGS < <( xargs -n1 <<<"$var" ) &&
# set -- "${ARGS[@]}" "$@"
#
# but POSIX shell has neither arrays nor command substitution, so instead we
# post-process each arg (as a line of input to sed) to backslash-escape any
# character that might be a shell metacharacter, then use eval to reverse
# that process (while maintaining the separation between arguments), and wrap
# the whole thing up as a single "set" statement.
#
# This will of course break if any of these variables contains a newline or
# an unmatched quote.
#

eval "set -- $(
    printf '%s\n' "$DEFAULT_JVM_OPTS $JAVA_OPTS $GRADLE_OPTS" |
    xargs -n1 |
    sed 's~[^-[:alnum:]+,./:=@_]~\\&~g; ' |
    tr '\n' ' '
)" "$@"

exec "$JAVACMD" "$@"

```

gradlew.bat

```

@rem
@rem Copyright 2015 the original author or authors.
@rem
@rem Licensed under the Apache License, Version 2.0 (the "License");
@rem you may not use this file except in compliance with the License.
@rem You may obtain a copy of the License at
@rem
@rem    https://www.apache.org/licenses/LICENSE-2.0
@rem

```

```

@rem Unless required by applicable law or agreed to in writing, software
@rem distributed under the License is distributed on an "AS IS" BASIS,
@rem WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
@rem See the License for the specific language governing permissions and
@rem limitations under the License.
@rem
@rem SPDX-License-Identifier: Apache-2.0
@rem

@if "%DEBUG%"==" " @echo off
@rem
#####
#####
@rem
@rem Gradle startup script for Windows
@rem
@rem
#####
#####

@rem Set local scope for the variables with windows NT shell
if "%OS%"=="Windows_NT" setlocal

set DIRNAME=%~dp0
if "%DIRNAME%"==" " set DIRNAME=.
@rem This is normally unused
set APP_BASE_NAME=%~n0
set APP_HOME=%DIRNAME%

@rem Resolve any "." and ".." in APP_HOME to make it shorter.
for %%i in ("%APP_HOME%") do set APP_HOME=%%~fi

@rem Add default JVM options here. You can also use JAVA_OPTS and GRADLE_OPTS to
pass JVM options to this script.
set DEFAULT_JVM_OPTS="-Xmx64m" "-Xms64m"

@rem Find java.exe
if defined JAVA_HOME goto findJavaFromJavaHome

set JAVA_EXE=java.exe
%JAVA_EXE% -version >NUL 2>&1
if %ERRORLEVEL% equ 0 goto execute

```

```

echo. 1>&2
echo ERROR: JAVA_HOME is not set and no 'java' command could be found in your PATH.
1>&2
echo. 1>&2
echo Please set the JAVA_HOME variable in your environment to match the 1>&2
echo location of your Java installation. 1>&2

goto fail

:findJavaFromJavaHome
set JAVA_HOME=%JAVA_HOME:"=%
set JAVA_EXE=%JAVA_HOME%/bin/java.exe

if exist "%JAVA_EXE%" goto execute

echo. 1>&2
echo ERROR: JAVA_HOME is set to an invalid directory: %JAVA_HOME% 1>&2
echo. 1>&2
echo Please set the JAVA_HOME variable in your environment to match the 1>&2
echo location of your Java installation. 1>&2

goto fail

:execute
@rem Setup the command line

set CLASSPATH=

@rem Execute Gradle
"%JAVA_EXE%" %DEFAULT_JVM_OPTS% %JAVA_OPTS% %GRADLE_OPTS% "-
Dorg.gradle.appname=%APP_BASE_NAME%" -classpath "%CLASSPATH%" -jar
"%APP_HOME%\gradle\wrapper\gradle-wrapper.jar" %*

:end
@rem End local scope for the variables with windows NT shell
if %ERRORLEVEL% equ 0 goto mainEnd

:fail
rem Set variable GRADLE_EXIT_CONSOLE if you need the _script_ return code instead of
rem the _cmd.exe /c_ return code!
set EXIT_CODE=%ERRORLEVEL%
if %EXIT_CODE% equ 0 set EXIT_CODE=1

```

```
if not ""=="%GRADLE_EXIT_CONSOLE%" exit %EXIT_CODE%
exit /b %EXIT_CODE%
```

```
:mainEnd
if "%OS%"=="Windows_NT" endlocal
```

```
:omega
```

local.properties

```
## This file is automatically generated by Android Studio.
# Do not modify this file -- YOUR CHANGES WILL BE ERASED!
#
# This file should *NOT* be checked into Version Control Systems,
# as it contains information specific to your local configuration.
#
# Location of the SDK. This is only used by Gradle.
# For customization when using a Version Control System, please read the
# header note.
sdk.dir=C:\\Users\\ADMIN\\AppData\\Local\\Android\\Sdk
MAPS_API_KEY=AIzaSyBS6lGj7CsMDE5O9bMEf3I3anmfn34OBlA
CLOUDINARY_CLOUD_NAME=dotq3sk7l
CLOUDINARY_API_KEY=943654194677826
CLOUDINARY_API_SECRET=6G4876Xf-UgHaHD7762Q3JtkOil
```

settings.gradle.kts

```
pluginManagement {
    repositories {
        google {
            content {
                includeGroupByRegex("com\\.\\.android\\.")
                includeGroupByRegex("com\\.\\.google\\.")
                includeGroupByRegex("androidx\\.")
            }
        }
        mavenCentral()
        gradlePluginPortal()
    }
}
dependencyResolutionManagement {
    repositoriesMode.set(RepositoriesMode.FAIL_ON_PROJECT_REPOS)
    repositories {
        google()
        mavenCentral()
    }
}
```

```
}  
}
```

```
rootProject.name = "SmartBloodDonationAndroid"  
include(":app")  
include(":core")  
include(":feature_auth")  
include(":feature_profile")  
include(":feature_map_booking")  
include(":feature_emergency")  
include(":feature_chatbot")
```

app/.gitignore

```
/build  
# Google Services file  
google-services.json
```

app/build.gradle.kts

```
plugins {  
    alias(libs.plugins.android.secrets.gradle.plugin)  
    alias(libs.plugins.android.application)  
    alias(libs.plugins.kotlin.android)  
    alias(libs.plugins.kotlin.compose.compiler)  
    alias(libs.plugins.ksp)  
    alias(libs.plugins.google.services)  
    alias(libs.plugins.firebase.crashlytics)  
    alias(libs.plugins.hilt)  
    // alias(libs.plugins.maps.secrets)  
}  
  
android {  
    namespace = "com.example.smartblooddonationandroid"  
    compileSdk = 34  
  
    defaultConfig {  
        applicationId = "com.smartblood.donation"  
        minSdk = 24  
        targetSdk = 34  
        versionCode = 1  
        versionName = "1.0"
```

```

        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"
    }

    buildTypes {
        release {
            isMinifyEnabled = false
            proguardFiles(
                getDefaultProguardFile("proguard-android-optimize.txt"),
                "proguard-rules.pro"
            )
        }
    }
    compileOptions {
        sourceCompatibility = JavaVersion.VERSION_11
        targetCompatibility = JavaVersion.VERSION_11
    }
    kotlinOptions {
        jvmTarget = "11"
    }
    buildFeatures {
        compose = true
        // Thêm dòng này để truy cập BuildConfig
        buildConfig = true
    }
    // Thêm khối packagingOptions nếu chưa có
    packagingOptions {
        resources {
            excludes += "/META-INF/{AL2.0,LGPL2.1}"
        }
    }
}

dependencies {
    // Core & UI
    implementation(libs.androidx.core.ktx)
    implementation(libs.androidx.lifecycle.runtime.ktx)
    implementation(libs.androidx.activity.compose)
    implementation(platform(libs.androidx.compose.bom))
    implementation(libs.androidx.compose.ui)
    implementation(libs.androidx.compose.ui.graphics)
    implementation(libs.androidx.compose.ui.tooling.preview)
    implementation(libs.androidx.compose.material3)
}

```

```

// Hilt
implementation(libs.hilt.android)
implementation(libs.androidx.viewbinding)
implementation(libs.transport.backend.cct)
ksp(libs.hilt.compiler)

// Dependencies cho các feature module
implementation(project(":core"))
implementation(project(":feature_auth"))
implementation(project(":feature_profile"))
implementation(project(":feature_map_booking"))
implementation(project(":feature_emergency"))
implementation(project(":feature_chatbot"))

implementation(libs.androidx.navigation.compose)
implementation(libs.androidx.hilt.navigation.compose)

// Test
testImplementation(libs.junit)
androidTestImplementation(libs.androidx.junit)
androidTestImplementation(libs.androidx.espresso.core)
androidTestImplementation(platform(libs.androidx.compose.bom))
androidTestImplementation(libs.androidx.compose.ui.test.junit4)
debugImplementation(libs.androidx.compose.ui.tooling)
debugImplementation(libs.androidx.compose.ui.test.manifest)

//TrackAsia
implementation(libs.trackasia.sdk)
implementation(libs.trackasia.annotation.plugin)

implementation(libs.accompanist.navigation.animation)
implementation("com.cloudinary:cloudinary-android:2.4.0")
}

```

app/google-services.json

```

{
  "project_info": {
    "project_number": "731740765779",
    "project_id": "smart-blood-donation-2911",
    "storage_bucket": "smart-blood-donation-2911.firebaseioapp"
  },
  "client": [

```

```

{
  "client_info": {
    "mobilesdk_app_id": "1:731740765779:android:12b089b55854767d6150a6",
    "android_client_info": {
      "package_name": "com.smartblood.donation"
    }
  },
  "oauth_client": [],
  "api_key": [
    {
      "current_key": "AlzaSyA55BbyQtArvpqUJr2kbOCknqQymZTdMfE"
    }
  ],
  "services": {
    "appinvite_service": {
      "other_platform_oauth_client": []
    }
  }
}
],
"configuration_version": "1"
}

```

app/proguard-rules.pro

```

# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#   public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to

```



```
# hide the original source file name.  
#-renamesourcefileattribute SourceFile
```

app/src/androidTest/java/com/example/smartblooddonationandroid/ExampleInstrumentedTest.kt

```
package com.example.smartblooddonationandroid  
  
import androidx.test.platform.app.InstrumentationRegistry  
import androidx.test.ext.junit.runners.AndroidJUnit4  
  
import org.junit.Test  
import org.junit.runner.RunWith  
  
import org.junit.Assert.*  
  
/**  
 * Instrumented test, which will execute on an Android device.  
 *  
 * See [testing documentation](http://d.android.com/tools/testing).  
 */  
@RunWith(AndroidJUnit4::class)  
class ExampleInstrumentedTest {  
    @Test  
    fun useAppContext() {  
        // Context of the app under test.  
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext  
        assertEquals("com.example.smartblooddonationandroid", appContext.packageName)  
    }  
}
```

app/src/main/AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
    xmlns:tools="http://schemas.android.com/tools">  
  
    <application  
        android:name="com.smartblood.donation.MainApplication"  
        android:enableOnBackInvokedCallback="true"  
        android:allowBackup="true"  
        android:dataExtractionRules="@xml/data_extraction_rules"  
        android:fullBackupContent="@xml/backup_rules"  
        android:icon="@mipmap/ic_launcher"  
        android:label="@string/app_name"
```

```

        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.SmartBloodDonationAndroid">
        <activity
            android:name=".MainActivity"
            android:exported="true"
            android:label="@string/app_name"
            android:theme="@style/Theme.SmartBloodDonationAndroid">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>

```

[app/src/main/assets/local.properties](#)

```

CLOUDINARY_CLOUD_NAME=dotq3sk7l
CLOUDINARY_API_KEY=943654194677826
CLOUDINARY_API_SECRET=6G4876Xf-UgHaHD7762Q3JtkOil

```

[app/src/main/java/com/example/smartblooddonationandroid/MainActivity.kt](#)

```

//D:\SmartBloodDonationAndroid\app\src\main\java\com\example\smartblooddonationandroid\MainActivity.kt

```

```

package com.example.smartblooddonationandroid

```

```

import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.activity.enableEdgeToEdge
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.foundation.layout.padding
import androidx.compose.material3.MaterialTheme
import androidx.compose.material3.Scaffold
import androidx.compose.material3.Surface
import androidx.compose.material3.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Modifier
import androidx.compose.ui.tooling.preview.Preview
import
com.example.smartblooddonationandroid.ui.theme.SmartBloodDonationAndroidTheme
import com.smartblood.donation.navigation.AppNavHost

```

```
import dagger.hilt.android.AndroidEntryPoint
import com.smartblood.core.ui.theme.SmartBloodTheme
```

```
@AndroidEntryPoint
class MainActivity : ComponentActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContent {
            SmartBloodDonationAndroidTheme {
                // A surface container using the 'background' color from the theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colorScheme.background
                ) {
                    AppNavHost()
                }
            }
        }
    }
}
```

```
@Composable
fun Greeting(name: String, modifier: Modifier = Modifier) {
    Text(
        text = "Hello $name!",
        modifier = modifier
    )
}
```

```
@Preview(showBackground = true)
@Composable
fun GreetingPreview() {
    SmartBloodDonationAndroidTheme {
        Greeting("Android")
    }
}
```

[app/src/main/java/com/example/smartblooddonationandroid/MainApplication.kt](#)

```
package com.smartblood.donation
```

```
import android.app.Application
import android.util.Log
```

```
import android.net.Uri // <-- Thêm Uri
import androidx.compose.foundation.layout.*
import androidx.compose.material3.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.text.input.PasswordVisualTransformation
import androidx.compose.ui.unit.dp
import androidx.hilt.navigation.compose.hiltViewModel
import com.cloudinary.android.MediaManager
import com.trackasia.android.TrackAsia // <-- Thêm TrackAsia
import dagger.hilt.android.AndroidEntryPoint
import java.io.InputStream
import java.util.Properties
import java.util.Date // <-- Thêm Date
import java.util.Locale // <-- Thêm Locale
import java.text.SimpleDateFormat // <-- Thêm SimpleDateFormat
import androidx.compose.foundation.lazy.grid.GridCells // <-- Thêm GridCells
import androidx.compose.foundation.lazy.grid.LazyVerticalGrid // <-- Thêm
LazyVerticalGrid
import androidx.compose.foundation.lazy.grid.items // <-- Thêm items
import androidx.compose.foundation.shape.CircleShape // <-- Thêm CircleShape
import androidx.compose.material.icons.Icons // <-- Thêm Icons
import androidx.compose.material.icons.automirrored.filled.ArrowBack // <-- Thêm
ArrowBack
import androidx.compose.material.icons.filled.Phone // <-- Thêm Phone
import androidx.compose.ui.graphics.vector.ImageVector // <-- Thêm ImageVector
import androidx.compose.ui.text.font.FontWeight // <-- Thêm FontWeight
import androidx.compose.ui.unit.sp // <-- Thêm sp
import androidx.compose.ui.viewinterop.AndroidView // <-- Thêm AndroidView
import androidx.lifecycle.Lifecycle // <-- Thêm Lifecycle
import androidx.lifecycle.LifecycleEventObserver // <-- Thêm LifecycleEventObserver
import com.example.feature_map_booking.domain.model.Hospital // <-- Thêm Hospital
import com.google.gson.JsonParser // <-- Thêm JsonParser
import com.trackasia.android.camera.CameraUpdateFactory // <-- Thêm
CameraUpdateFactory
import com.trackasia.android.geometry.LatLng // <-- Thêm LatLng
import com.trackasia.android.location.LocationComponent // <-- Thêm
LocationComponent
import com.trackasia.android.location.LocationComponentActivationOptions // <-- Thêm
LocationComponentActivationOptions
import com.trackasia.android.location.modes.CameraMode // <-- Thêm CameraMode
import com.trackasia.android.location.modes.RenderMode // <-- Thêm RenderMode
```

```

import com.trackasia.android.maps.MapView // <-- Thêm MapView
import com.trackasia.android.maps.Style // <-- Thêm Style
import com.trackasia.android.plugins.annotation.SymbolManager // <-- Thêm
SymbolManager
import com.trackasia.android.plugins.annotation.SymbolOptions // <-- Thêm
SymbolOptions
import dagger.hilt.android.HiltAndroidApp

@HiltAndroidApp
class MainApplication : Application() {
    override fun onCreate() {
        super.onCreate()
        // --- BẮT ĐẦU CÁCH TIẾP CẬN MỚI ---
        // Tạo một đối tượng Properties để chứa các khóa
        val properties = Properties()
        try {
            // Mở file local.properties từ thư mục assets
            val inputStream: InputStream = assets.open("local.properties")
            // Tải dữ liệu từ file vào đối tượng properties
            properties.load(inputStream)
        } catch (e: Exception) {
            // Ghi log lỗi nếu không tìm thấy file
            Log.e("MainApplication", "Could not read local.properties file", e)
        }
        // Lấy các giá trị từ properties
        val cloudName = properties.getProperty("CLOUDINARY_CLOUD_NAME", "")
        val apiKey = properties.getProperty("CLOUDINARY_API_KEY", "")
        val apiSecret = properties.getProperty("CLOUDINARY_API_SECRET", "") // <-- Đảm bảo
        API Secret cũng được lấy
        // Kiểm tra xem các khóa có rỗng không (để debug)
        if (cloudName.isEmpty() || apiKey.isEmpty() /*|| apiSecret.isEmpty()*/) { // <-- Bỏ
        kiểm tra apiSecret nếu bạn chỉ dùng apiKey cho init MediaManager
            Log.e("MainApplication", "Cloudinary credentials are not set in local.properties")
        }
        // Tạo map config và khởi tạo MediaManager
        val config = mapOf(
            "cloud_name" to cloudName,
            "api_key" to apiKey,
            "api_secret" to apiSecret // <-- Thêm apiSecret vào config nếu Cloudinary SDK yêu
            cầu
        )
        MediaManager.init(this, config) // <-- Khởi tạo Cloudinary
    }
}

```

```
// --- KẾT THÚC CÁCH TIẾP CẬN MỚI ---
```

```
TrackAsia.getInstance(applicationContext)
    }
}
```

[app/src/main/java/com/example/smartblooddonationandroid/features/dashb
oard/DashboardScreen.kt](#)

```
//D:\SmartBloodDonationAndroid\app\src\main\java\com\example\smartblooddonatio  
nandroid\features\dashboard\DashboardScreen.kt  
package com.smartblood.donation.features.dashboard
```

```
import androidx.compose.foundation.layout.*  
import androidx.compose.material3.*  
import androidx.compose.runtime.Composable  
import androidx.compose.runtime.collectAsState  
import androidx.compose.runtime.getValue  
import androidx.compose.ui.Alignment  
import androidx.compose.ui.Modifier  
import androidx.compose.ui.unit.dp  
import androidx.hilt.navigation.compose.hiltViewModel
```

```
@Composable  
fun DashboardScreen(  
    viewModel: DashboardViewModel = hiltViewModel(),  
    onFindDonationCenters: () -> Unit,  
    onViewEmergencyRequests: () -> Unit  
) {  
    val state by viewModel.state.collectAsState()  
  
    if (state.isLoading) {  
        Box(modifier = Modifier.fillMaxSize(), contentAlignment = Alignment.Center) {  
            CircularProgressIndicator()  
        }  
    } else {  
        Column(  
            modifier = Modifier  
                .fillMaxSize()  
                .padding(16.dp),  
            verticalArrangement = Arrangement.spacedBy(16.dp)  
        ) {  
            // Thẻ thông tin cá nhân  
            Card(modifier = Modifier.fillMaxWidth()) {
```

```

        Column(Modifier.padding(16.dp)) {
            Text(text = "Chào mừng, ${state.userName}", style =
MaterialTheme.typography.titleLarge)
            Spacer(Modifier.height(8.dp))
            Text(text = "Nhóm máu: ${state.bloodType}")
            Text(text = state.nextDonationMessage, style =
MaterialTheme.typography.bodyMedium)
        }
    }

    // Các nút Call-to-Action
    Button(onClick = onFindDonationCenters, modifier = Modifier.fillMaxWidth()) {
        Text("Tìm điểm hiến máu gần đây")
    }
    OutlinedButton(onClick = onViewEmergencyRequests, modifier =
Modifier.fillMaxWidth()) {
        Text("Xem yêu cầu khẩn cấp")
    }

    // Danh sách yêu cầu khẩn cấp (tạm thời)
    Text(
        "Yêu cầu khẩn cấp gần đây:",
        style = MaterialTheme.typography.titleMedium
    )
    Box(
        modifier = Modifier
            .fillMaxWidth()
            .weight(1f),
        contentAlignment = Alignment.Center
    ) {
        Text("Chưa có yêu cầu nào.")
    }
}
}
}

```

[app/src/main/java/com/example/smartblooddonationandroid/features/dashboard/DashboardViewModel.kt](#)

```

//D:\SmartBloodDonationAndroid\app\src\main\java\com\example\smartblooddonationandroid\features\dashboard\DashboardViewModel.kt
package com.smartblood.donation.features.dashboard

```

```

import androidx.lifecycle.ViewModel

```

```

import androidx.lifecycle.viewModelScope
import com.example.feature_profile.domain.usecase.GetUserProfileUseCase
import com.smartblood.profile.domain.usecase.CalculateNextDonationDateUseCase
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch
import javax.inject.Inject

// Tạm thời định nghĩa State ở đây cho gọn
data class DashboardState(
    val isLoading: Boolean = true,
    val userName: String = "",
    val bloodType: String = "N/A",
    val nextDonationMessage: String = ""
)

@HiltViewModel
class DashboardViewModel @Inject constructor(
    private val getUserProfileUseCase: GetUserProfileUseCase,
    private val calculateNextDonationDateUseCase: CalculateNextDonationDateUseCase
) : ViewModel() {

    private val _state = MutableStateFlow(DashboardState())
    val state = _state.asStateFlow()

    init {
        loadDashboardData()
    }

    private fun loadDashboardData() {
        viewModelScope.launch {
            _state.update { it.copy(isLoading = true) }
            getUserProfileUseCase().onSuccess { userProfile ->
                _state.update {
                    it.copy(
                        isLoading = false,
                        userName = userProfile.fullName,
                        bloodType = userProfile.bloodType ?: "N/A",
                        nextDonationMessage = calculateNextDonationDateUseCase(userProfile)
                    )
                }
            }
        }
    }
}

```



```

        }.onFailure {
            _state.update { it.copy(isLoading = false, userName = "Không tải được dữ liệu") }
        }
    }
}
}
}

```

app/src/main/java/com/example/smartblooddonationandroid/navigation/AppNavHost.kt

```

//app/src/main/java/com/smartblood/donation/navigation/AppNavHost.kt
package com.smartblood.donation.navigation

```

```

import androidx.compose.runtime.Composable
import androidx.navigation.compose.NavHost
import androidx.navigation.compose.composable
import androidx.navigation.compose.rememberNavController
import com.smartblood.auth.navigation.authGraph
import com.example.feature_auth.ui.splash.SplashScreen
import com.smartblood.donation.ui.MainScreen

```

```

@Composable
fun AppNavHost() {
    val navController = rememberNavController()
    NavHost(
        navController = navController,
        startDestination = Screen.SPLASH
    ) {
        composable(Screen.SPLASH) {
            SplashScreen(
                navigateToLogin = {
                    // Điều hướng đến đồ thị xác thực
                    navController.navigate(Graph.AUTHENTICATION) {
                        // Xóa SplashScreen khỏi back stack
                        popUpTo(Screen.SPLASH) { inclusive = true }
                    }
                },
                navigateToDashboard = {
                    // Điều hướng đến đồ thị chính
                    navController.navigate(Graph.MAIN) {
                        // Xóa SplashScreen khỏi back stack
                        popUpTo(Screen.SPLASH) { inclusive = true }
                    }
                }
            )
        }
    }
}

```

```

    )
}

// --- ĐÂY LÀ NƠI KẾT NỐI ---
authGraph(navController)

composable(Graph.MAIN) {
    MainScreen()
}
}
}
}

```

[app/src/main/java/com/example/smartblooddonationandroid/navigation/BottomNavItem.kt](#)

```

//D:\SmartBloodDonationAndroid\app\src\main\java\com\example\smartblooddonationandroid\navigation\BottomNavItem.kt
package com.smartblood.donation.navigation

import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.filled.Home
import androidx.compose.material.icons.filled.LocationOn
import androidx.compose.material.icons.filled.Person
import androidx.compose.ui.graphics.vector.ImageVector

sealed class BottomNavItem(val route: String, val title: String, val icon: ImageVector) {
    object Dashboard : BottomNavItem("dashboard", "Trang chủ", Icons.Default.Home)
    object Map : BottomNavItem("map", "Bản đồ", Icons.Default.LocationOn)
    object Profile : BottomNavItem("profile", "Hồ sơ", Icons.Default.Person)
    // Thêm các mục khác sau này: Map, Emergency...
}

```

[app/src/main/java/com/example/smartblooddonationandroid/navigation/Screen.kt](#)

```

//app/src/main/java/com/smartblood/donation/navigation/Screen.kt
package com.smartblood.donation.navigation

import com.smartblood.auth.navigation.AUTH_GRAPH_ROUTE

// Định nghĩa các "địa chỉ" cho các màn hình
object Screen {
    const val SPLASH = "splash"
    const val DASHBOARD = "dashboard"
}

```

```

const val EDIT_PROFILE = "edit_profile"
const val DONATION_HISTORY = "donation_history"
// Thêm các màn hình khác ở đây...
}

object Graph {
    const val ROOT = "root_graph"
    const val AUTHENTICATION = AUTH_GRAPH_ROUTE // Sử dụng lại route đã định nghĩa ở
feature_auth
    const val MAIN = "main_graph_route"
}

```

[app/src/main/java/com/example/smartblooddonationandroid/ui/theme/Color.kt](#)

```
package com.example.smartblooddonationandroid.ui.theme
```

```
import androidx.compose.ui.graphics.Color
```

```

val Purple80 = Color(0xFFD0BCFF)
val PurpleGrey80 = Color(0xFFCCC2DC)
val Pink80 = Color(0xFFE8B8C8)

```

```

val Purple40 = Color(0xFF6650a4)
val PurpleGrey40 = Color(0xFF625b71)
val Pink40 = Color(0xFF7D5260)

```

[app/src/main/java/com/example/smartblooddonationandroid/ui/theme/MainScreen.kt](#)

```

//
D:\SmartBloodDonationAndroid\app\src\main\java\com\smartblood\donation\ui\MainScreen.kt
package com.smartblood.donation.ui

```

```

// THÊM CÁC IMPORT MỚI TỪ THƯ VIỆN ACCOMPANIST
import androidx.compose.animation.ExperimentalAnimationApi
import androidx.compose.foundation.layout.PaddingValues
import com.google.accompanist.navigation.animation.AnimatedNavHost
import com.google.accompanist.navigation.animation.composable
import com.google.accompanist.navigation.animation.rememberAnimatedNavController
// -----

```

```

import androidx.compose.foundation.layout.padding
import androidx.compose.material3.*
import androidx.compose.runtime.Composable
import androidx.compose.runtime.getValue
import androidx.compose.ui.Modifier
import androidx.navigation.NavDestination.Companion.hierarchy
import androidx.navigation.NavGraph.Companion.findStartDestination
import androidx.navigation.NavHostController
import androidx.navigation.NavType
import androidx.navigation.compose.currentBackStackEntryAsState
import androidx.navigation.navArgument
import com.example.feature_map_booking.domain.ui.booking.BookingScreen
import com.example.feature_map_booking.domain.ui.location_detail.LocationDetailScreen
import com.example.feature_map_booking.domain.ui.map.MapScreen
import com.example.feature_profile.ui.DonationHistoryScreen
import com.example.feature_profile.ui.EditProfileScreen
import com.example.feature_profile.ui.ProfileScreen

```

```

// Sửa các import cũ (nếu có) để trỏ đến các package đúng
import com.smartblood.donation.features.dashboard.DashboardScreen
import com.smartblood.donation.navigation.BottomNavItem
import com.smartblood.donation.navigation.Screen

```

```

// THÊM ANNOTATION NÀY

```

```

@OptIn(ExperimentalAnimationApi::class)

```

```

@Composable

```

```

fun MainScreen() {

```

```

    // SỬA TỪ rememberNavController() THÀNH rememberAnimatedNavController()

```

```

    val navController = rememberAnimatedNavController()

```

```

    val navItems = listOf(
        BottomNavItem.Dashboard,
        BottomNavItem.Map,
        BottomNavItem.Profile,
    )

```

```

    Scaffold(
        bottomBar = {
            NavigationBar {
                val navBackStackEntry by navController.currentBackStackEntryAsState()
                val currentDestination = navBackStackEntry?.destination
            }
        }
    )

```

```

        navItems.forEach { screen ->
            NavigationBarItem(
                icon = { Icon(screen.icon, contentDescription = screen.title) },
                label = { Text(screen.title) },
                selected = currentDestination?.hierarchy?.any { it.route == screen.route } ==
true,
                onClick = {
                    navController.navigate(screen.route) {
                        popUpTo(navController.graph.findStartDestination().id) {
                            saveState = true
                        }
                        launchSingleTop = true
                        restoreState = true
                    }
                }
            )
        }
    }
}
) { innerPadding ->
    AppNavigation(
        navController = navController,
        paddingValues = innerPadding
    )
}
}
@OptIn(ExperimentalAnimationApi::class)
@Composable
fun AppNavigation(
    navController: NavHostController,
    paddingValues: PaddingValues // Hàm này nhận `paddingValues`
) {
    AnimatedNavHost(
        navController = navController,
        startDestination = BottomNavItem.Dashboard.route,
        modifier = Modifier.padding(paddingValues) // Và sử dụng nó ở đây
    ) {
        composable(route = BottomNavItem.Dashboard.route) {
            DashboardScreen(
                onFindDonationCenters = { navController.navigate(BottomNavItem.Map.route) },
                onViewEmergencyRequests = { /* TODO */ }
            )
        }
    }
}

```

```

composable(route = BottomNavItem.Map.route) {
    MapScreen(
        onNavigateToLocationDetail = { hospitalId ->
            navController.navigate("location_detail/$hospitalId")
        }
    )
}

composable(
    route = "location_detail/{hospitalId}",
    arguments = listOf(navArgument("hospitalId") { type = NavType.StringType })
) {
    LocationDetailScreen(
        onNavigateToBooking = { hospitalId, hospitalName ->
            navController.navigate("booking/$hospitalId/$hospitalName")
        },
        onNavigateBack = { navController.popBackStack() }
    )
}

composable(
    route = "booking/{hospitalId}/{hospitalName}",
    arguments = listOf(
        navArgument("hospitalId") { type = NavType.StringType },
        navArgument("hospitalName") { type = NavType.StringType }
    )
) {
    BookingScreen(
        onBookingSuccess = { navController.popBackStack(BottomNavItem.Map.route,
inclusive = false) },
        onNavigateBack = { navController.popBackStack() }
    )
}

composable(BottomNavItem.Profile.route) {
    ProfileScreen(
        onNavigateToEditProfile = { navController.navigate(Screen.EDIT_PROFILE) },
        onNavigateToDonationHistory = {
navController.navigate(Screen.DONATION_HISTORY) }
    )
}

```

```

        composable(Screen.EDIT_PROFILE) {
            EditProfileScreen(onNavigateBack = { navController.popBackStack() })
        }

        composable(Screen.DONATION_HISTORY) {
            DonationHistoryScreen(onNavigateBack = { navController.popBackStack() })
        }
    }
}

```

[app/src/main/java/com/example/smartblooddonationandroid/ui/theme/Theme.kt](#)

```
package com.example.smartblooddonationandroid.ui.theme
```

```

import android.app.Activity
import android.os.Build
import androidx.compose.foundation.isSystemInDarkTheme
import androidx.compose.material3.MaterialTheme
import androidx.compose.material3.darkColorScheme
import androidx.compose.material3.dynamicDarkColorScheme
import androidx.compose.material3.dynamicLightColorScheme
import androidx.compose.material3.lightColorScheme
import androidx.compose.runtime.Composable
import androidx.compose.ui.platform.LocalContext

```

```

private val DarkColorScheme = darkColorScheme(
    primary = Purple80,
    secondary = PurpleGrey80,
    tertiary = Pink80
)

```

```

private val LightColorScheme = lightColorScheme(
    primary = Purple40,
    secondary = PurpleGrey40,
    tertiary = Pink40
)

```

```

/* Other default colors to override
background = Color(0xFFFFFBFE),
surface = Color(0xFFFFFBFE),
onPrimary = Color.White,
onSecondary = Color.White,
onTertiary = Color.White,
onBackground = Color(0xFF1C1B1F),

```

```

        onSurface = Color(0xFF1C1B1F),
        */
    )

@Composable
fun SmartBloodDonationAndroidTheme(
    darkTheme: Boolean = isSystemInDarkTheme(),
    // Dynamic color is available on Android 12+
    dynamicColor: Boolean = true,
    content: @Composable () -> Unit
) {
    val colorScheme = when {
        dynamicColor && Build.VERSION.SDK_INT >= Build.VERSION_CODES.S -> {
            val context = LocalContext.current
            if (darkTheme) dynamicDarkColorScheme(context) else
            dynamicLightColorScheme(context)
        }

        darkTheme -> DarkColorScheme
        else -> LightColorScheme
    }

    MaterialTheme(
        colorScheme = colorScheme,
        typography = Typography,
        content = content
    )
}

```

[app/src/main/java/com/example/smartblooddonationandroid/ui/theme/Type](#)
[.kt](#)

```
package com.example.smartblooddonationandroid.ui.theme
```

```

import androidx.compose.material3.Typography
import androidx.compose.ui.text.TextStyle
import androidx.compose.ui.text.font.FontFamily
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.sp

```

```

// Set of Material typography styles to start with
val Typography = Typography(
    bodyLarge = TextStyle(
        fontFamily = FontFamily.Default,

```



```

        fontWeight = FontWeight.Normal,
        fontSize = 16.sp,
        lineHeight = 24.sp,
        letterSpacing = 0.5.sp
    )
    /* Other default text styles to override
    titleLarge = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.Normal,
        fontSize = 22.sp,
        lineHeight = 28.sp,
        letterSpacing = 0.sp
    ),
    labelSmall = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.Medium,
        fontSize = 11.sp,
        lineHeight = 16.sp,
        letterSpacing = 0.5.sp
    )
    */
}

```

[app/src/main/res/drawable/ic_launcher_background.xml](#)

```

<?xml version="1.0" encoding="utf-8"?>
<vector xmlns:android="http://schemas.android.com/apk/res/android"
    android:width="108dp"
    android:height="108dp"
    android:viewportWidth="108"
    android:viewportHeight="108">
    <path
        android:fillColor="#3DDC84"
        android:pathData="M0,0h108v108h-108z" />
    <path
        android:fillColor="#00000000"
        android:pathData="M9,0L9,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,0L19,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />

```

```
<path
  android:fillColor="#00000000"
  android:pathData="M29,0L29,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M39,0L39,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M49,0L49,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M59,0L59,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M69,0L69,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M79,0L79,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M89,0L89,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M99,0L99,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,9L108,9"
```

```
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,19L108,19"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,29L108,29"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,39L108,39"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,49L108,49"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,59L108,59"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,69L108,69"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,79L108,79"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M0,89L108,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
```

```
        android:fillColor="#00000000"
        android:pathData="M0,99L108,99"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M19,29L89,29"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M19,39L89,39"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M19,49L89,49"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M19,59L89,59"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M19,69L89,69"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M19,79L89,79"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M29,19L29,89"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M39,19L39,89"
    android:strokeWidth="0.8"
```

```

        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M49,19L49,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M59,19L59,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M69,19L69,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M79,19L79,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
</vector>

```

[app/src/main/res/drawable/ic_launcher_foreground.xml](#)

```

<vector xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:aapt="http://schemas.android.com/aapt"
    android:width="108dp"
    android:height="108dp"
    android:viewportWidth="108"
    android:viewportHeight="108">
    <path android:pathData="M31,63.928c0,0 6.4,-11 12.1,-13.1c7.2,-2.6 26,-1.4 26,-1.4l38.1,38.1L107,108.928l-32,-1L31,63.928z">
        <aapt:attr name="android:fillColor">
            <gradient
                android:endX="85.84757"
                android:endY="92.4963"
                android:startX="42.9492"
                android:startY="49.59793"
                android:type="linear">
                <item
                    android:color="#44000000"
                    android:offset="0.0" />
            </gradient>
        </aapt:attr>
    </path>
</vector>

```

```

        <item
            android:color="#00000000"
            android:offset="1.0" />
    </gradient>
</aapt:attr>
</path>
<path
    android:fillColor="#FFFFFF"
    android:fillType="nonZero"
    android:pathData="M65.3,45.828l3.8,-6.6c0.2,-0.4 0.1,-0.9 -0.3,-1.1c-0.4,-0.2 -0.9,-0.1 -
1.1,0.3l-3.9,6.7c-6.3,-2.8 -13.4,-2.8 -19.7,0l-3.9,-6.7c-0.2,-0.4 -0.7,-0.5 -1.1,-0.3C38.8,38.328
38.7,38.828 38.9,39.228l3.8,6.6C36.2,49.428 31.7,56.028 31,63.928h46C76.3,56.028
71.8,49.428 65.3,45.828zM43.4,57.328c-0.8,0 -1.5,-0.5 -1.8,-1.2c-0.3,-0.7 -0.1,-1.5 0.4,-
2.1c0.5,-0.5 1.4,-0.7 2.1,-0.4c0.7,0.3 1.2,1 1.2,1.8C45.3,56.528 44.5,57.328
43.4,57.328L43.4,57.328zM64.6,57.328c-0.8,0 -1.5,-0.5 -1.8,-1.2s-0.1,-1.5 0.4,-2.1c0.5,-0.5
1.4,-0.7 2.1,-0.4c0.7,0.3 1.2,1 1.2,1.8C66.5,56.528 65.6,57.328 64.6,57.328L64.6,57.328z"
    android:strokeWidth="1"
    android:strokeColor="#00000000" />
</vector>

```

[app/src/main/res/mipmap-anydpi-v26/ic_launcher.xml](#)

```

<?xml version="1.0" encoding="utf-8"?>
<adaptive-icon xmlns:android="http://schemas.android.com/apk/res/android">
    <background android:drawable="@drawable/ic_launcher_background" />
    <foreground android:drawable="@drawable/ic_launcher_foreground" />
    <monochrome android:drawable="@drawable/ic_launcher_foreground" />
</adaptive-icon>

```

[app/src/main/res/mipmap-anydpi-v26/ic_launcher_round.xml](#)

```

<?xml version="1.0" encoding="utf-8"?>
<adaptive-icon xmlns:android="http://schemas.android.com/apk/res/android">
    <background android:drawable="@drawable/ic_launcher_background" />
    <foreground android:drawable="@drawable/ic_launcher_foreground" />
    <monochrome android:drawable="@drawable/ic_launcher_foreground" />
</adaptive-icon>

```

[app/src/main/res/values/colors.xml](#)

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>

```

```

    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
</resources>

```

app/src/main/res/values/strings.xml

```

<resources>
    <string name="app_name">SmartBloodDonationAndroid</string>
</resources>

```

app/src/main/res/values/themes.xml

```

<?xml version="1.0" encoding="utf-8"?>
<resources>

    <style name="Theme.SmartBloodDonationAndroid"
parent="android:Theme.Material.Light.NoActionBar" />
</resources>

```

app/src/main/res/xml/backup_rules.xml

```

<?xml version="1.0" encoding="utf-8"?><!--
Sample backup rules file; uncomment and customize as necessary.
See https://developer.android.com/guide/topics/data/autobackup
for details.
Note: This file is ignored for devices older than API 31
See https://developer.android.com/about/versions/12/backup-restore
-->
<full-backup-content>
    <!--
    <include domain="sharedpref" path="." />
    <exclude domain="sharedpref" path="device.xml" />
    -->
</full-backup-content>

```

app/src/main/res/xml/data_extraction_rules.xml

```

<?xml version="1.0" encoding="utf-8"?><!--
Sample data extraction rules file; uncomment and customize as necessary.
See https://developer.android.com/about/versions/12/backup-restore#xml-changes
for details.
-->
<data-extraction-rules>
    <cloud-backup>
        <!-- TODO: Use <include> and <exclude> to control what is backed up.
        <include .../>
        <exclude .../>
        -->
    </cloud-backup>

```

```

</cloud-backup>
<!--
<device-transfer>
  <include .../>
  <exclude .../>
</device-transfer>
-->
</data-extraction-rules>

```

app/src/test/java/com/example/smartblooddonationandroid/ExampleUnitTes t.kt

```
package com.example.smartblooddonationandroid
```

```
import org.junit.Test
```

```
import org.junit.Assert.*
```

```

/**
 * Example local unit test, which will execute on the development machine (host).
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
    }
}

```

core/.gitignore

```
/build
```

core/build.gradle.kts

```
// D:\SmartBloodDonationAndroid\core\build.gradle.kts
```

```

plugins {
    // Sử dụng plugin cho thư viện Android
    alias(libs.plugins.android.library)
    // Plugin cho Kotlin
    alias(libs.plugins.kotlin.android)
    // Plugin cho KSP (để Hilt và Room hoạt động)
    alias(libs.plugins.ksp)
    alias(libs.plugins.kotlin.compose.compiler)
}

```



```

    alias(libs.plugins.android.secrets.gradle.plugin)
}

android {
    namespace = "com.smartblood.core" // Đổi thành namespace của dự án
    compileSdk = 34

    defaultConfig {
        minSdk = 24
        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"
        consumerProguardFiles("consumer-rules.pro")
    }

    buildTypes {
        release {
            isMinifyEnabled = false
            proguardFiles(
                getDefaultProguardFile("proguard-android-optimize.txt"),
                "proguard-rules.pro"
            )
        }
    }

    compileOptions {
        sourceCompatibility = JavaVersion.VERSION_1_8 // Sử dụng 1.8 là đủ và phổ biến
        targetCompatibility = JavaVersion.VERSION_1_8
    }

    kotlinOptions {
        jvmTarget = "1.8"
    }

    // Bật tính năng Jetpack Compose
    buildFeatures {
        compose = true
        buildConfig = true
    }
}

dependencies {
    // Sử dụng bí danh từ libs.versions.toml để nhất quán

```

```
// Core Android KTX
implementation(libs.androidx.core.ktx)

// Jetpack Compose
implementation(platform(libs.androidx.compose.bom)) // BoM quản lý phiên bản
implementation(libs.androidx.compose.ui)
implementation(libs.androidx.compose.ui.graphics)
implementation(libs.androidx.compose.ui.tooling.preview)
implementation(libs.androidx.compose.material3)

// Dependency Injection - Hilt
implementation(libs.hilt.android)
ksp(libs.hilt.compiler)

// Local Database - Room
implementation(libs.androidx.room.runtime)
implementation(libs.androidx.room.ktx)
ksp(libs.androidx.room.compiler)

// Remote - Firebase
implementation(platform(libs.firebase.bom)) // BoM quản lý phiên bản
implementation(libs.firebase.auth.ktx)
implementation(libs.firebase.firestore.ktx)
implementation(libs.firebase.storage.ktx)
implementation(libs.firebase.messaging.ktx)
implementation(libs.firebase.crashlytics.ktx)
implementation(libs.play.services.auth) // Google Sign-In

// Asynchronous - Coroutines
implementation(libs.kotlinx.coroutines.core)
implementation(libs.kotlinx.coroutines.android)

// Networking (Để dành cho tương lai)
implementation(libs.retrofit)
implementation(libs.converter.gson)
implementation(libs.logging.interceptor)

// Testing
testImplementation(libs.junit)
androidTestImplementation(libs.androidx.junit)
androidTestImplementation(libs.androidx.espresso.core)
androidTestImplementation(platform(libs.androidx.compose.bom))
debugImplementation(libs.androidx.compose.ui.tooling)
```

```
implementation("com.cloudinary:cloudinary-android:2.4.0")

}
```

core/consumer-rules.pro

[File rỗng]

core/proguard-rules.pro

```
# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#   public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to
# hide the original source file name.
#-renamesourcefileattribute SourceFile
```

core/src/androidTest/java/com/example/core/ExampleInstrumentedTest.kt

```
package com.example.core
```

```
import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4
```

```
import org.junit.Test
import org.junit.runner.RunWith
```

```
import org.junit.Assert.*
```

```
/**
```

```
 * Instrumented test, which will execute on an Android device.
```

```

*
* See [testing documentation](http://d.android.com/tools/testing).
*/
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.core.test", appContext.packageName)
    }
}

```

core/src/main/AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

</manifest>

```

core/src/main/java/com/smartblood/core/data/local/AppDatabase.kt

```

//// core/src/main/java/com/smartblood/core/data/local/AppDatabase.kt
//
//package com.smartblood.core.data.local
//
//import androidx.room.Database
//import androidx.room.RoomDatabase
//
// TODO: Thêm các class Entity của bạn vào mảng entities = [...]
// Ví dụ: @Database(entities = [UserEntity::class], version = 1, exportSchema = false)
// @Database(entities = [], version = 1, exportSchema = false)
// abstract class AppDatabase : RoomDatabase() {
//     // TODO: Khai báo các abstract fun cho các DAO của bạn
//     // Ví dụ: abstract fun userDao(): UserDao
//
//     companion object {
//         const val DATABASE_NAME = "smartblood_db"
//     }
// }

```

core/src/main/java/com/smartblood/core/data/remote/ApiClient.kt

```

// core/src/main/java/com/smartblood/core/data/remote/ApiClient.kt

// (Để trống file này nếu bạn quyết định chỉ dùng Firebase SDK trực tiếp.

```

// Nhưng việc tạo module Hilt cho nó vẫn là một ý hay để chuẩn bị cho tương lai.)
// Chúng ta sẽ định nghĩa nó trong Hilt module bên dưới.

[core/src/main/java/com/smartblood/core/di/DatabaseModule.kt](#)

// core/src/main/java/com/smartblood/core/di/DatabaseModule.kt

```
package com.smartblood.core.di
```

```
import android.content.Context
import androidx.room.Room
//import com.smartblood.core.data.local.AppDatabase
import dagger.Module
import dagger.Provides
import dagger.hilt.InstallIn
import dagger.hilt.android.qualifiers.ApplicationContext
import dagger.hilt.components.SingletonComponent
import javax.inject.Singleton
```

```
@Module
```

```
@InstallIn(SingletonComponent::class)
```

```
object DatabaseModule {
```

```
    // @Provides
```

```
    // @Singleton
```

```
    // fun provideAppDatabase(@ApplicationContext context: Context): AppDatabase {
```

```
        // return Room.databaseBuilder{
```

```
            // context,
```

```
            // AppDatabase::class.java,
```

```
            // AppDatabase.DATABASE_NAME
```

```
        // }.fallbackToDestructiveMigration().build()
```

```
        // }
```

```
    // TODO: Cung cấp các DAO ở đây
```

```
    // Ví dụ:
```

```
    // @Provides
```

```
    // @Singleton
```

```
    // fun provideUserDao(appDatabase: AppDatabase): UserDao {
```

```
        // return appDatabase.userDao()
```

```
    // }
```

```
}
```

[core/src/main/java/com/smartblood/core/di/FirebaseModule.kt](#)

// core/src/main/java/com/smartblood/core/di/FirebaseModule.kt

```

package com.smartblood.core.di

import com.google.firebase.auth.FirebaseAuth
import com.google.firebase.auth.ktx.auth
import com.google.firebase.firestore.FirebaseFirestore
import com.google.firebase.firestore.ktx.firestore
import com.google.firebase.ktx.Firebase
import com.google.firebase.storage.FirebaseStorage
import com.google.firebase.storage.ktx.storage
import dagger.Module
import dagger.Provides
import dagger.hilt.InstallIn
import dagger.hilt.components.SingletonComponent
import javax.inject.Singleton

@Module
@InstallIn(SingletonComponent::class)
object FirebaseModule {

    @Provides
    @Singleton
    fun provideFirebaseAuth(): FirebaseAuth = Firebase.auth

    @Provides
    @Singleton
    fun provideFirebaseFirestore(): FirebaseFirestore = Firebase.firestore

    @Provides
    @Singleton
    fun provideFirebaseStorage(): FirebaseStorage = Firebase.storage

}

```

[core/src/main/java/com/smartblood/core/di/NetworkModule.kt](#)

// core/src/main/java/com/smartblood/core/di/NetworkModule.kt

```

package com.smartblood.core.di

import com.google.gson.GsonBuilder
import dagger.Module
import dagger.Provides
import dagger.hilt.InstallIn
import dagger.hilt.components.SingletonComponent

```

```

import okhttp3.OkHttpClient
import okhttp3.logging.HttpLoggingInterceptor
import retrofit2.Retrofit
import retrofit2.converter.gson.GsonConverterFactory
import java.util.concurrent.TimeUnit
import javax.inject.Singleton

```

```
@Module
```

```
@InstallIn(SingletonComponent::class)
```

```
object NetworkModule {
```

```
    private const val BASE_URL = "https://your.future.api.com/"
```

```
    @Provides
```

```
    @Singleton
```

```
    fun provideOkHttpClient(): OkHttpClient {
        return OkHttpClient.Builder()
            .addInterceptor(HttpLoggingInterceptor().apply {
                // Chỉ log khi ở chế độ debug
                level = HttpLoggingInterceptor.Level.BODY
            })
            .connectTimeout(30, TimeUnit.SECONDS)
            .readTimeout(30, TimeUnit.SECONDS)
            .build()
    }

```

```
    @Provides
```

```
    @Singleton
```

```
    fun provideRetrofit(okHttpClient: OkHttpClient): Retrofit {
        return Retrofit.Builder()
            .baseUrl(BASE_URL)
            .client(okHttpClient)
            .addConverterFactory(GsonConverterFactory.create(GsonBuilder().create()))
            .build()
    }
}

```

[core/src/main/java/com/smartblood/core/storage/data/repository/StorageRepositoryImpl.kt](#)

```
package com.smartblood.core.storage.data.repository
```

```
import android.net.Uri
```

```
import android.util.Log
```

```

import com.cloudinary.android.MediaManager
import com.cloudinary.android.callback.ErrorInfo
import com.cloudinary.android.callback.UploadCallback // <-- SỬ DỤNG UploadCallback
import com.smartblood.core.storage.domain.repository.StorageRepository
import kotlinx.coroutines.suspendCancellableCoroutine
import javax.inject.Inject
import kotlin.Result
import kotlin.coroutines.resume

```

```

class StorageRepositoryImpl @Inject constructor() : StorageRepository {

```

```

    override suspend fun uploadImage(uri: Uri, path: String): Result<String> {
        return suspendCancellableCoroutine { continuation ->
            // Sử dụng path làm public_id để có thể ghi đè ảnh đại diện cũ
            // Cloudinary không khuyến khích dùng '/' trong public_id
            val publicId = path

```

```

            MediaManager.get().upload(uri)
                .option("public_id", publicId)
                .option("overwrite", true) // Ghi đè file cũ nếu có cùng public_id
                .callback(object : UploadCallback { // <-- SỬ DỤNG UploadCallback
                    override fun onStart(requestId: String) {
                        Log.d("CloudinaryUpload", "Upload started: $requestId")
                    }

```

```

                override fun onProgress(requestId: String, bytes: Long, totalBytes: Long) {
                    // Optional: Handle progress
                }

```

```

                override fun onSuccess(requestId: String, resultData: Map<*, *>?) {
                    val secureUrl = resultData?.get("secure_url") as? String
                    if (secureUrl != null) {
                        Log.d("CloudinaryUpload", "Upload success: $secureUrl")
                        continuation.resume(Result.success(secureUrl))
                    } else {
                        Log.e("CloudinaryUpload", "Upload error: URL is null")
                        continuation.resume(Result.failure(Exception("Upload successful but URL
not found"))))
                    }
                }

```

```

                override fun onError(requestId: String, error: ErrorInfo?) {
                    val errorMessage = error?.description ?: "Unknown upload error"

```



```

        Log.e("CloudinaryUpload", "Upload error: $errorMessage")
        continuation.resume(Result.failure(Exception(errorMessage)))
    }

    override fun onReschedule(requestId: String, error: ErrorInfo?) {
        // Not typically used
    }
    }).dispatch() // <-- SỬ DỤNG dispatch()
}
}
}

```

[core/src/main/java/com/smartblood/core/storage/di/StorageModule.kt](#)

```
package com.smartblood.core.storage.di
```

```
// storage/di/StorageModule.kt
```

```

import com.smartblood.core.storage.data.repository.StorageRepositoryImpl
import com.smartblood.core.storage.domain.repository.StorageRepository
import dagger.Binds
import dagger.Module
import dagger.hilt.InstallIn
import dagger.hilt.components.SingletonComponent
import javax.inject.Singleton

```

```

@Module
@InstallIn(SingletonComponent::class)
abstract class StorageModule {
    @Binds
    @Singleton
    abstract fun bindStorageRepository(impl: StorageRepositoryImpl): StorageRepository
}

```

[core/src/main/java/com/smartblood/core/storage/domain/repository/StorageRepository.kt](#)

```
package com.smartblood.core.storage.domain.repository
```

```

import android.net.Uri
import kotlin.Result

```

```

interface StorageRepository {
    suspend fun uploadImage(uri: Uri, path: String): Result<String>
}

```

core/src/main/java/com/smartblood/core/storage/domain/usecase/UploadImageUseCase.kt

```
package com.smartblood.core.storage.domain.usecase
```

```
import android.net.Uri
import com.smartblood.core.storage.domain.repository.StorageRepository
import javax.inject.Inject
```

```
class UploadImageUseCase @Inject constructor(
    private val repository: StorageRepository
) {
    suspend operator fun invoke(uri: Uri, path: String) = repository.uploadImage(uri, path)
}
```

core/src/main/java/com/smartblood/core/ui/components/LoadingDialog.kt

```
// core/src/main/java/com/smartblood/core/ui/components/LoadingDialog.kt
```

```
package com.smartblood.core.ui.components
```

```
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.Box
import androidx.compose.foundation.layout.padding
import androidx.compose.foundation.layout.size
import androidx.compose.material3.CircularProgressIndicator
import androidx.compose.material3.MaterialTheme
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.unit.dp
import androidx.compose.ui.window.Dialog
import androidx.compose.ui.window.DialogProperties
```

```
@Composable
```

```
fun LoadingDialog(isLoading: Boolean) {
    if (isLoading) {
        Dialog(
            onDismissRequest = { /* Không cho phép dismiss */ },
            properties = DialogProperties(dismissOnBackPress = false, dismissOnClickOutside =
false)
        ) {
            Box(
                modifier = Modifier
                    .size(100.dp)
            )
        }
    }
}
```

```

        .background(
            color = MaterialTheme.colorScheme.surface,
            shape = MaterialTheme.shapes.large
        ),
        contentAlignment = Alignment.Center
    ){
        CircularProgressIndicator()
    }
}
}
}

```

[core/src/main/java/com/smartblood/core/ui/components/PrimaryButton.kt](#)

// core/src/main/java/com/smartblood/core/ui/components/PrimaryButton.kt

```
package com.smartblood.core.ui.components
```

```

import androidx.compose.foundation.layout.fillMaxWidth
import androidx.compose.foundation.layout.height
import androidx.compose.material3.Button
import androidx.compose.material3.MaterialTheme
import androidx.compose.material3.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Modifier
import androidx.compose.ui.unit.dp

```

```

@Composable
fun PrimaryButton(
    text: String,
    onClick: () -> Unit,
    modifier: Modifier = Modifier,
    enabled: Boolean = true
){
    Button(
        onClick = onClick,
        modifier = modifier
            .fillMaxWidth()
            .height(50.dp),
        shape = MaterialTheme.shapes.medium,
        enabled = enabled
    ){
        Text(
            text = text,

```

```

        style = MaterialTheme.typography.labelLarge
    )
}
}

```

[core/src/main/java/com/smartblood/core/ui/theme/Color.kt](#)

```
// core/src/main/java/com/smartblood/core/ui/theme/Color.kt
```

```
package com.smartblood.core.ui.theme
```

```
import androidx.compose.ui.graphics.Color
```

```
// Bảng màu chính theo chủ đề
```

```
val PrimaryRed = Color(0xFFD32F2F) // Màu đỏ máu, mạnh mẽ, kêu gọi hành động
```

```
val PrimaryRedLight = Color(0xFFFF6659)
```

```
val PrimaryRedDark = Color(0xFF9A0007)
```

```
val AccentBlue = Color(0xFF1976D2) // Màu xanh y tế, tin cậy, an toàn
```

```
val AccentBlueLight = Color(0xFF63A4FF)
```

```
val AccentBlueDark = Color(0xFF004BA0)
```

```
// Bảng màu phụ trợ
```

```
val TextPrimary = Color(0xFF212121) // Màu chữ chính trên nền sáng
```

```
val TextSecondary = Color(0xFF757575) // Màu chữ phụ, chú thích
```

```
val White = Color(0xFFFFFFFF)
```

```
val LightGray = Color(0xFFF5F5F5) // Màu nền nhẹ nhàng
```

```
val SuccessGreen = Color(0xFF388E3C) // Màu cho thông báo thành công
```

```
val ErrorRed = Color(0xFFD32F2F) // Màu cho thông báo lỗi
```

[core/src/main/java/com/smartblood/core/ui/theme/Shape.kt](#)

```
// core/src/main/java/com/smartblood/core/ui/theme/Shape.kt
```

```
package com.smartblood.core.ui.theme
```

```
import androidx.compose.foundation.shape.RoundedCornerShape
```

```
import androidx.compose.material3.Shapes
```

```
import androidx.compose.ui.unit.dp
```

```
val AppShapes = Shapes(
```

```
    small = RoundedCornerShape(4.dp), // Dùng cho các component nhỏ như chip, tag
```

```
    medium = RoundedCornerShape(8.dp), // Dùng cho Card, Button, Input Field
```

```
    large = RoundedCornerShape(16.dp) // Dùng cho Dialog, Bottom Sheet
```

```
)
```

[core/src/main/java/com/smartblood/core/ui/theme/Theme.kt](#)

// core/src/main/java/com/smartblood/core/ui/theme/Theme.kt

```
package com.smartblood.core.ui.theme
```

```
import android.app.Activity
import androidx.compose.foundation.isSystemInDarkTheme
import androidx.compose.material3.MaterialTheme
import androidx.compose.material3.lightColorScheme
import androidx.compose.runtime.Composable
import androidx.compose.runtime.SideEffect
import androidx.compose.ui.graphics.toArgb
import androidx.compose.ui.platform.LocalView
import androidx.core.view.WindowCompat
```

// Đồ án này tập trung vào light theme để đơn giản hóa, nhưng cấu trúc đã sẵn sàng cho dark theme

```
private val LightColorScheme = lightColorScheme(
    primary = PrimaryRed,
    secondary = AccentBlue,
    tertiary = AccentBlueDark,
    background = White,
    surface = White,
    onPrimary = White,
    onSecondary = White,
    onTertiary = White,
    onBackground = TextPrimary,
    onSurface = TextPrimary,
    error = ErrorRed
)
```

```
@Composable
```

```
fun SmartBloodTheme(
    darkTheme: Boolean = isSystemInDarkTheme(),
    content: @Composable () -> Unit
) {
    val colorScheme = LightColorScheme // Hiện tại chỉ dùng LightColorScheme
    val view = LocalView.current
    if (!view.isInEditMode) {
        SideEffect {
            val window = (view.context as Activity).window
            window.statusBarColor = colorScheme.primary.toArgb()
            WindowCompat.getInsetsController(window, view).isAppearanceLightStatusBars =

```

```
darkTheme
```

```
    }  
}
```

```
MaterialTheme(  
    colorScheme = colorScheme,  
    typography = AppTypography,  
    shapes = AppShapes,  
    content = content  
)  
}
```

```
core/src/main/java/com/smartblood/core/ui/theme/Type.kt
```

```
// core/src/main/java/com/smartblood/core/ui/theme/Type.kt
```

```
package com.smartblood.core.ui.theme
```

```
import androidx.compose.material3.Typography  
import androidx.compose.ui.text.TextStyle  
import androidx.compose.ui.text.font.FontFamily  
import androidx.compose.ui.text.font.FontWeight  
import androidx.compose.ui.unit.sp
```

```
// (Bạn có thể thêm các font chữ custom vào đây nếu muốn)
```

```
val AppTypography = Typography(  
    displayLarge = TextStyle(  
        fontFamily = FontFamily.Default,  
        fontWeight = FontWeight.Bold,  
        fontSize = 30.sp,  
        lineHeight = 36.sp,  
        letterSpacing = 0.sp  
    ),  
    headlineMedium = TextStyle(  
        fontFamily = FontFamily.Default,  
        fontWeight = FontWeight.SemiBold,  
        fontSize = 24.sp,  
        lineHeight = 28.sp,  
        letterSpacing = 0.sp  
    ),  
    bodyLarge = TextStyle(  
        fontFamily = FontFamily.Default,  
        fontWeight = FontWeight.Normal,
```

```

        fontSize = 16.sp,
        lineHeight = 24.sp,
        letterSpacing = 0.5.sp
    ),
    bodyMedium = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.Normal,
        fontSize = 14.sp,
        lineHeight = 20.sp,
        letterSpacing = 0.25.sp
    ),
    labelLarge = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.Medium,
        fontSize = 14.sp,
        lineHeight = 20.sp,
        letterSpacing = 0.1.sp
    )
}

```

core/src/test/java/com/example/core/ExampleUnitTest.kt

```
package com.example.core
```

```
import org.junit.Test
```

```
import org.junit.Assert.*
```

```

/**
 * Example local unit test, which will execute on the development machine (host).
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
    }
}

```

feature_auth/.gitignore

```
/build
```

feature_auth/build.gradle.kts

```
plugins {  
    alias(libs.plugins.android.library)  
    alias(libs.plugins.kotlin.android)  
    alias(libs.plugins.kotlin.compose.compiler)  
    alias(libs.plugins.ksp)  
    // alias(libs.plugins.google.services)  
    // alias(libs.plugins.firebase.crashlytics)  
  
}  
  
android {  
    namespace = "com.example.feature_auth"  
    compileSdk = 34  
  
    defaultConfig {  
        minSdk = 24  
  
        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"  
        consumerProguardFiles("consumer-rules.pro")  
    }  
  
    buildTypes {  
  
        release {  
            isMinifyEnabled = false  
            proguardFiles(  
                getDefaultProguardFile("proguard-android-optimize.txt"),  
                "proguard-rules.pro"  
            )  
        }  
    }  
    compileOptions {  
        sourceCompatibility = JavaVersion.VERSION_11  
        targetCompatibility = JavaVersion.VERSION_11  
    }  
    kotlinOptions {  
        jvmTarget = "11"  
    }  
}  
  
dependencies {  
    implementation(project(":core"))
```



```
// Core Android KTX
implementation(libs.androidx.core.ktx)

// Jetpack Compose
implementation(platform(libs.androidx.compose.bom)) // BoM quản lý phiên bản
implementation(libs.androidx.compose.ui)
implementation(libs.androidx.compose.ui.graphics)
implementation(libs.androidx.compose.ui.tooling.preview)
implementation(libs.androidx.compose.material3)

// Dependency Injection - Hilt
implementation(libs.hilt.android)
ksp(libs.hilt.compiler)
implementation(libs.androidx.hilt.navigation.compose)
implementation(libs.androidx.lifecycle.viewmodel.compose)
implementation(libs.androidx.lifecycle.runtime.compose)

// Local Database - Room
implementation(libs.androidx.room.runtime)
implementation(libs.androidx.room.ktx)
ksp(libs.androidx.room.compiler)

// Remote - Firebase
implementation(platform(libs.firebase.bom)) // BoM quản lý phiên bản
implementation(libs.firebase.auth.ktx)
implementation(libs.firebase.firestore.ktx)
implementation(libs.firebase.storage.ktx)
implementation(libs.firebase.messaging.ktx)
implementation(libs.firebase.crashlytics.ktx)
implementation(libs.play.services.auth) // Google Sign-In

// Asynchronous - Coroutines
implementation(libs.kotlinx.coroutines.core)
implementation(libs.kotlinx.coroutines.android)

// Networking (Để dành cho tương lai)
implementation(libs.retrofit)
implementation(libs.converter.gson)
implementation(libs.logging.interceptor)

// Testing
testImplementation(libs.junit)
androidTestImplementation(libs.androidx.junit)
```

```

    androidTestImplementation(libs.androidx.espresso.core)
    androidTestImplementation(platform(libs.androidx.compose.bom))
    debugImplementation(libs.androidx.compose.ui.tooling)

}

```

feature_auth/consumer-rules.pro

[File rỗng]

feature_auth/proguard-rules.pro

```

# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#   public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to
# hide the original source file name.
#-renamesourcefileattribute SourceFile

```

feature_auth/src/androidTest/java/com/example/feature_auth/ExampleInstrumentedTest.kt

```

package com.example.feature_auth

import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4

import org.junit.Test
import org.junit.runner.RunWith

```

```
import org.junit.Assert.*

/**
 * Instrumented test, which will execute on an Android device.
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.feature_auth.test", appContext.packageName)
    }
}
```

feature_auth/src/main/AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

</manifest>
```

feature_auth/src/main/java/com/example/feature_auth/data/repository/AuthRepositoryImpl.kt

```
//
feature_auth/src/main/java/com/smartblood/auth/data/repository/AuthRepositoryImpl.
kt
```

```
package com.smartblood.auth.data.repository
```

```
import com.google.firebase.auth.FirebaseAuth
import com.google.firebase.firestore.FirebaseFirestore
import com.smartblood.auth.domain.model.User
import com.smartblood.auth.domain.repository.AuthRepository
import kotlinx.coroutines.tasks.await
import javax.inject.Inject
import kotlin.Result
```

```
class AuthRepositoryImpl @Inject constructor(
    private val auth: FirebaseAuth,
    private val firestore: FirebaseFirestore
) : AuthRepository {
```

```

override fun isUserAuthenticated(): Boolean {
    return auth.currentUser != null
}

override suspend fun loginWithEmail(email: String, password: String): Result<User> {
    return try {
        // Bước 1: Xác thực người dùng với Firebase Authentication
        val authResult = auth.signInWithEmailAndPassword(email, password).await()
        val firebaseUser = authResult.user

        if (firebaseUser != null) {
            // Bước 2: Lấy thông tin người dùng từ Cloud Firestore
            // Dùng UID từ kết quả xác thực để truy vấn đúng document.
            val userDocument =
                firestore.collection("users").document(firebaseUser.uid).get().await()

            // Chuyển đổi DocumentSnapshot từ Firestore thành đối tượng User của chúng ta.
            val user = userDocument.toObject(User::class.java)

            if (user != null) {
                Result.success(user) // Trả về đối tượng User nếu thành công
            } else {
                // Trường hợp hiếm gặp: Xác thực thành công nhưng không tìm thấy bản ghi user
                // trong Firestore
                // (có thể do lỗi khi đăng ký hoặc dữ liệu bị xóa thủ công).
                Result.failure(Exception("Không tìm thấy dữ liệu người dùng trong cơ sở dữ
                liệu."))
            }
        } else {
            Result.failure(Exception("Không xác thực được người dùng."))
        }
    } catch (e: Exception) {
        Result.failure(e)
    }
}

override suspend fun registerUser(fullName: String, email: String, password: String):
Result<Unit> {
    return try {
        // Bước 1: Tạo user trong Firebase Authentication
        val authResult = auth.createUserWithEmailAndPassword(email, password).await()
        val firebaseUser = authResult.user
    }
}

```

```

if (firebaseUser != null) {
    // Bước 2: Tạo đối tượng User để lưu vào Firestore
    val user = User(
        uid = firebaseUser.uid,
        email = email,
        fullName = fullName
    )

    // Bước 3: Lưu đối tượng User vào collection "users" trong Firestore
    // với document ID chính là UID của người dùng.
    firestore.collection("users").document(firebaseUser.uid).set(user).await()

    Result.success(Unit)
} else {
    Result.failure(Exception("Failed to create user."))
}
} catch (e: Exception) {
    Result.failure(e)
}
}
}

```

feature_auth/src/main/java/com/example/feature_auth/di/AuthModule.kt

// feature_auth/src/main/java/com/smartblood/auth/di/AuthModule.kt

```

package com.smartblood.auth.di

import com.smartblood.auth.data.repository.AuthRepositoryImpl
import com.smartblood.auth.domain.repository.AuthRepository
import dagger.Binds
import dagger.Module
import dagger.hilt.InstallIn
import dagger.hilt.components.SingletonComponent
import javax.inject.Singleton

@Module
@InstallIn(SingletonComponent::class)
abstract class AuthModule {

    @Binds
    @Singleton
    abstract fun bindAuthRepository(

```

```
        authRepositoryImpl: AuthRepositoryImpl
    ): AuthRepository
}
```

[feature_auth/src/main/java/com/example/feature_auth/domain/model/User.kt](#)

```
// feature_auth/src/main/java/com/smartblood/auth/domain/model/User.kt
```

```
package com.smartblood.auth.domain.model
```

```
data class User(
    val uid: String = "",
    val email: String = "",
    val fullName: String = ""
    // Thêm các trường khác sau này, ví dụ:
    // val bloodType: String? = null,
    // val phoneNumber: String? = null
)
```

[feature_auth/src/main/java/com/example/feature_auth/domain/repository/AuthRepository.kt](#)

```
//
feature_auth/src/main/java/com/smartblood/auth/domain/repository/AuthRepository.kt
```

```
package com.smartblood.auth.domain.repository
```

```
// Sử dụng Result của Kotlin để đóng gói thành công hoặc lỗi một cách an toàn
import com.smartblood.auth.domain.model.User
import kotlin.Result
```

```
interface AuthRepository {
    fun isAuthenticated(): Boolean

    /**
     * Thực hiện đăng nhập bằng email và mật khẩu.
     * @return Result.success(Unit) nếu thành công, Result.failure(Exception) nếu thất bại.
     */
    suspend fun loginWithEmail(email: String, password: String): Result<User>
    suspend fun registerUser(fullName: String, email: String, password: String): Result<Unit>
}
```

feature_auth/src/main/java/com/example/feature_auth/domain/usecase/CheckUserAuthenticationUseCase.kt

```
//  
feature_auth/src/main/java/com/smartblood/auth/domain/usecase/CheckUserAuthenticationUseCase.kt
```

```
package com.smartblood.auth.domain.usecase
```

```
import com.smartblood.auth.domain.repository.AuthRepository  
import javax.inject.Inject
```

```
class CheckUserAuthenticationUseCase @Inject constructor(  
    private val repository: AuthRepository  
) {  
    operator fun invoke(): Boolean {  
        return repository.isUserAuthenticated()  
    }  
}
```

feature_auth/src/main/java/com/example/feature_auth/domain/usecase/LoginUseCase.kt

```
// feature_auth/src/main/java/com/smartblood/auth/domain/usecase/LoginUseCase.kt
```

```
package com.smartblood.auth.domain.usecase
```

```
import com.smartblood.auth.domain.model.User  
import com.smartblood.auth.domain.repository.AuthRepository  
import javax.inject.Inject
```

```
class LoginUseCase @Inject constructor(  
    private val repository: AuthRepository  
) {  
    suspend operator fun invoke(email: String, password: String): Result<User> {  
        // Có thể thêm logic kiểm tra dữ liệu đầu vào ở đây  
        if (email.isBlank() || password.isBlank()) {  
            return Result.failure(IllegalArgumentException("Email and password cannot be empty."))  
        }  
        return repository.loginWithEmail(email, password)  
    }  
}
```

feature_auth/src/main/java/com/example/feature_auth/domain/usecase/RegisterUseCase.kt

```
//  
feature_auth/src/main/java/com/smartblood/auth/domain/usecase/RegisterUseCase.kt  
  
package com.smartblood.auth.domain.usecase  
  
import com.smartblood.auth.domain.repository.AuthRepository  
import javax.inject.Inject  
  
class RegisterUseCase @Inject constructor(  
    private val repository: AuthRepository  
) {  
    suspend operator fun invoke(fullName: String, email: String, password: String):  
    Result<Unit> {  
        if (fullName.isBlank() || email.isBlank() || password.length < 6) {  
            return Result.failure(IllegalArgumentException("Vui lòng điền đầy đủ thông tin. Mật  
khẩu phải có ít nhất 6 ký tự."))  
        }  
        return repository.registerUser(fullName, email, password)  
    }  
}
```

feature_auth/src/main/java/com/example/feature_auth/ui/login/LoginContract.kt

```
// feature_auth/src/main/java/com/smartblood/auth/ui/login/LoginContract.kt  
  
package com.smartblood.auth.ui.login  
  
// Định nghĩa trạng thái của màn hình  
data class LoginState(  
    val email: String = "",  
    val password: String = "",  
    val isLoading: Boolean = false,  
    val error: String? = null,  
    val loginSuccess: Boolean = false  
)  
  
// Định nghĩa các sự kiện mà người dùng có thể tạo ra  
sealed class LoginEvent {  
    data class OnEmailChanged(val email: String) : LoginEvent()  
    data class OnPasswordChanged(val password: String) : LoginEvent()  
    object OnLoginClicked : LoginEvent()
```



```
        object OnErrorDismissed : LoginEvent()
    }
}
```

feature_auth/src/main/java/com/example/feature_auth/ui/login/LoginScreen.kt

```
// feature_auth/src/main/java/com/smartblood/auth/ui/login/LoginScreen.kt
```

```
package com.smartblood.auth.ui.login
```

```
import androidx.compose.foundation.layout.*
import androidx.compose.material3.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.text.input.PasswordVisualTransformation
import androidx.compose.ui.unit.dp
import androidx.hilt.navigation.compose.hiltViewModel
import com.smartblood.core.ui.components.PrimaryButton
```

```
@Composable
```

```
fun LoginScreen(
    viewModel: LoginViewModel = hiltViewModel(),
    navigateToDashboard: () -> Unit,
    navigateToRegister: () -> Unit,
) {
    val state by viewModel.state.collectAsState()

```

```
    // Điều hướng khi đăng nhập thành công
```

```
    LaunchedEffect(state.loginSuccess) {
```

```
        if (state.loginSuccess) {
            navigateToDashboard()
        }
    }
}
```

```
    // Hiển thị thông báo lỗi
```

```
    if (state.error != null) {
```

```
        AlertDialog(
```

```
            onDismissRequest = { viewModel.onEvent(LoginEvent.OnErrorDismissed) },
```

```
            title = { Text("Login Failed") },
```

```
            text = { Text(state.error!!) },
```

```
            confirmButton = {
```

```
                TextButton(onClick = { viewModel.onEvent(LoginEvent.OnErrorDismissed) }) {
                    Text("OK")
                }
            }
        )
    }
}
```

```

    }
  }
)
}

Box(modifier = Modifier.fillMaxSize(), contentAlignment = Alignment.Center) {
  if (state.isLoading) {
    CircularProgressIndicator()
  } else {
    Column(
      modifier = Modifier
        .fillMaxWidth()
        .padding(horizontal = 32.dp),
      horizontalAlignment = Alignment.CenterHorizontally,
      verticalArrangement = Arrangement.spacedBy(16.dp)
    ) {
      Text("Welcome Back!", style = MaterialTheme.typography.headlineMedium)

      OutlinedTextField(
        value = state.email,
        onValueChange = { viewModel.onEvent(LoginEvent.OnEmailChanged(it)) },
        label = { Text("Email") },
        modifier = Modifier.fillMaxWidth()
      )

      OutlinedTextField(
        value = state.password,
        onValueChange = { viewModel.onEvent(LoginEvent.OnPasswordChanged(it)) },
        label = { Text("Password") },
        visualTransformation = PasswordVisualTransformation(),
        modifier = Modifier.fillMaxWidth()
      )

      PrimaryButton(
        text = "Login",
        onClick = { viewModel.onEvent(LoginEvent.OnLoginClicked) }
      )

      TextButton(onClick = navigateToRegister) {
        Text("Don't have an account? Sign Up")
      }
    }
  }
}

```

```
}  
}
```

[feature_auth/src/main/java/com/example/feature_auth/ui/login/LoginViewModel.kt](#)

```
// feature_auth/src/main/java/com/smartblood/auth/ui/login/LoginViewModel.kt
```

```
package com.smartblood.auth.ui.login
```

```
import androidx.lifecycle.ViewModel  
import androidx.lifecycle.viewModelScope  
import com.smartblood.auth.domain.usecase.LoginUseCase  
import dagger.hilt.android.lifecycle.HiltViewModel  
import kotlinx.coroutines.flow.MutableStateFlow  
import kotlinx.coroutines.flow.asStateFlow  
import kotlinx.coroutines.flow.update  
import kotlinx.coroutines.launch  
import javax.inject.Inject
```

```
@HiltViewModel
```

```
class LoginViewModel @Inject constructor(  
    private val loginUseCase: LoginUseCase  
) : ViewModel() {
```

```
    private val _state = MutableStateFlow(LoginState())  
    val state = _state.asStateFlow()
```

```
    fun onEvent(event: LoginEvent) {  
        when (event) {  
            is LoginEvent.OnEmailChanged -> {  
                _state.update { it.copy(email = event.email) }  
            }  
            is LoginEvent.OnPasswordChanged -> {  
                _state.update { it.copy(password = event.password) }  
            }  
            LoginEvent.OnLoginClicked -> {  
                login()  
            }  
            LoginEvent.OnErrorDismissed -> {  
                _state.update { it.copy(error = null) }  
            }  
        }  
    }  
}
```

```

private fun login() {
    viewModelScope.launch {
        _state.update { it.copy(isLoading = true) }
        val result = loginUseCase(state.value.email, state.value.password)
        result.onSuccess { user ->
            _state.update { it.copy(isLoading = false, loginSuccess = true) }
        }.onFailure { exception ->
            _state.update {
                it.copy(
                    isLoading = false,
                    error = exception.message ?: "Đã xảy ra lỗi không xác định."
                )
            }
        }
    }
}
}
}
}

```

feature_auth/src/main/java/com/example/feature_auth/ui/navigation/AuthNavigation.kt

```

//D:\SmartBloodDonationAndroid\feature_auth\src\main\java\com\example\feature_auth\ui\navigation\AuthNavigation.kt
package com.smartblood.auth.navigation

```

```

import androidx.navigation.NavGraphBuilder
import androidx.navigation.NavHostController
import androidx.navigation.compose.composable
import androidx.navigation.navigation
import com.smartblood.auth.ui.login.LoginScreen
import com.smartblood.auth.ui.register.RegisterScreen

```

```

// Định nghĩa một route duy nhất cho cả đồ thị này
// Module :app sẽ dùng route này để gọi vào
const val AUTH_GRAPH_ROUTE = "auth_graph"

```

```

/**
 * Extension function để đóng gói toàn bộ luồng navigation của feature_auth.
 * @param onNavigateToMainGraph Callback được gọi khi xác thực thành công để điều
 * hướng
 * ra khỏi luồng này và vào luồng chính của app.
 */
fun NavGraphBuilder.authGraph(navController: NavHostController) {

```

```

// Sử dụng hàm navigation() để tạo một đồ thị con (nested graph)
navigation(
  // Màn hình bắt đầu của luồng này
  startDestination = AuthScreen.Login.route,
  // Route của cả đồ thị con này
  route = AUTH_GRAPH_ROUTE
){
  // Định nghĩa màn hình Login
  composable(route = AuthScreen.Login.route) {
    LoginScreen(
      navigateToDashboard = {
        // Khi đăng nhập thành công, điều hướng ra khỏi luồng auth
        // và xóa luồng auth khỏi back stack
        navController.navigate("main_graph_route") { // Route này sẽ được định nghĩa ở
:app
          popUpTo(AUTH_GRAPH_ROUTE) {
            inclusive = true // Xóa cả auth_graph
          }
        },
      },
      navigateToRegister = {
        navController.navigate(AuthScreen.Register.route)
      }
    )
  }
}

// Định nghĩa màn hình Register
composable(route = AuthScreen.Register.route) {
  RegisterScreen(
    navigateToDashboard = {
      // Tương tự, khi đăng ký thành công, điều hướng ra khỏi luồng auth
      navController.navigate("main_graph_route") {
        popUpTo(AUTH_GRAPH_ROUTE) {
          inclusive = true
        }
      }
    },
    },
    navigateBack = {
      navController.popBackStack() // Quay lại màn hình trước đó (LoginScreen)
    }
  )
}

```

```

        // Thêm các composable cho các màn hình khác như FaceAuth... tại đây
    }
}

```

[feature_auth/src/main/java/com/example/feature_auth/ui/navigation/AuthScreen.kt](#)

```

//D:\SmartBloodDonationAndroid\feature_auth\src\main\java\com\example\feature_auth\ui\navigation\AuthScreen.kt
package com.smartblood.auth.navigation

```

```

// Định nghĩa các route cụ thể bên trong luồng xác thực
sealed class AuthScreen(val route: String) {
    object Login : AuthScreen("login_screen")
    object Register : AuthScreen("register_screen")
    // Thêm các màn hình khác nếu có, ví dụ:
    // object ForgotPassword : AuthScreen("forgot_password_screen")
    // object FaceAuthGuide : AuthScreen("face_auth_guide_screen")
}

```

[feature_auth/src/main/java/com/example/feature_auth/ui/register/RegisterContract.kt](#)

```

// feature_auth/src/main/java/com/smartblood/auth/ui/register/RegisterContract.kt

```

```

package com.smartblood.auth.ui.register

```

```

// Định nghĩa trạng thái của màn hình
data class RegisterState(
    val fullName: String = "",
    val email: String = "",
    val password: String = "",
    val isLoading: Boolean = false,
    val error: String? = null,
    val registrationSuccess: Boolean = false
)

```

```

// Định nghĩa các sự kiện mà người dùng có thể tạo ra
sealed class RegisterEvent {
    data class OnFullNameChanged(val fullName: String) : RegisterEvent()
    data class OnEmailChanged(val email: String) : RegisterEvent()
    data class OnPasswordChanged(val password: String) : RegisterEvent()
    object OnRegisterClicked : RegisterEvent()
}

```

```
    object OnErrorDismissed : RegisterEvent()
}
```

[feature_auth/src/main/java/com/example/feature_auth/ui/register/RegisterScreen.kt](#)

```
// feature_auth/src/main/java/com/smartblood/auth/ui/register/RegisterScreen.kt
```

```
package com.smartblood.auth.ui.register
```

```
import androidx.compose.foundation.layout.*
import androidx.compose.material3.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.text.input.PasswordVisualTransformation
import androidx.compose.ui.unit.dp
import androidx.hilt.navigation.compose.hiltViewModel
import com.smartblood.core.ui.components.PrimaryButton
```

```
@Composable
```

```
fun RegisterScreen(
    viewModel: RegisterViewModel = hiltViewModel(),
    navigateToDashboard: () -> Unit,
    navigateBack: () -> Unit,
) {
    val state by viewModel.state.collectAsState()

```

```
    // Điều hướng khi đăng ký thành công
    LaunchedEffect(state.registrationSuccess) {
        if (state.registrationSuccess) {
            navigateToDashboard()
        }
    }
}
```

```
    // Hiển thị thông báo lỗi
    if (state.error != null) {
        AlertDialog(
            onDismissRequest = { viewModel.onEvent(RegisterEvent.OnErrorDismissed) },
            title = { Text("Registration Failed") },
            text = { Text(state.error!!) },
            confirmButton = {
                TextButton(onClick = { viewModel.onEvent(RegisterEvent.OnErrorDismissed) }) {
                    Text("OK")
                }
            }
        )
    }
}
```

```

    }
  }
)
}

Box(modifier = Modifier.fillMaxSize(), contentAlignment = Alignment.Center) {
  if (state.isLoading) {
    CircularProgressIndicator()
  } else {
    Column(
      modifier = Modifier
        .fillMaxWidth()
        .padding(horizontal = 32.dp),
      horizontalAlignment = Alignment.CenterHorizontally,
      verticalArrangement = Arrangement.spacedBy(16.dp)
    ) {
      Text("Create an Account", style = MaterialTheme.typography.headlineMedium)

      OutlinedTextField(
        value = state.fullName,
        onChange = { viewModel.onEvent(RegisterEvent.OnFullNameChanged(it))
},
        label = { Text("Full Name") },
        modifier = Modifier.fillMaxWidth()
      )

      OutlinedTextField(
        value = state.email,
        onChange = { viewModel.onEvent(RegisterEvent.OnEmailChanged(it)) },
        label = { Text("Email") },
        modifier = Modifier.fillMaxWidth()
      )

      OutlinedTextField(
        value = state.password,
        onChange = { viewModel.onEvent(RegisterEvent.OnPasswordChanged(it))
},
        label = { Text("Password") },
        visualTransformation = PasswordVisualTransformation(),
        modifier = Modifier.fillMaxWidth()
      )

      PrimaryButton(

```



```

        text = "Sign Up",
        onClick = { viewModel.onEvent(RegisterEvent.OnRegisterClicked) }
    )

    TextButton(onClick = navigateBack) {
        Text("Already have an account? Log In")
    }
}
}
}
}
}
}
}

```

feature_auth/src/main/java/com/example/feature_auth/ui/register/RegisterViewModel.kt

// feature_auth/src/main/java/com/smartblood/auth/ui/register/RegisterViewModel.kt

```
package com.smartblood.auth.ui.register
```

```

import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.smartblood.auth.domain.usecase.RegisterUseCase
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch
import javax.inject.Inject

```

```
@HiltViewModel
```

```

class RegisterViewModel @Inject constructor(
    private val registerUseCase: RegisterUseCase
) : ViewModel() {

```

```

    private val _state = MutableStateFlow(RegisterState())
    val state = _state.asStateFlow()

```

```

    fun onEvent(event: RegisterEvent) {
        when (event) {
            is RegisterEvent.OnFullNameChanged -> {
                _state.update { it.copy(fullName = event.fullName) }
            }
            is RegisterEvent.OnEmailChanged -> {
                _state.update { it.copy(email = event.email) }
            }
        }
    }

```

```

    }
    is RegisterEvent.OnPasswordChanged -> {
        _state.update { it.copy(password = event.password) }
    }
    RegisterEvent.OnRegisterClicked -> {
        register()
    }
    RegisterEvent.OnErrorDismissed -> {
        _state.update { it.copy(error = null) }
    }
}

private fun register() {
    viewModelScope.launch {
        _state.update { it.copy(isLoading = true) }
        val currentState = state.value
        val result = registerUseCase(
            fullName = currentState.fullName,
            email = currentState.email,
            password = currentState.password
        )

        result.onSuccess {
            _state.update { it.copy(isLoading = false, registrationSuccess = true) }
        }.onFailure { exception ->
            _state.update {
                it.copy(
                    isLoading = false,
                    error = exception.message ?: "An unknown error occurred."
                )
            }
        }
    }
}

```

feature_auth/src/main/java/com/example/feature_auth/ui/splash/SplashScreen.kt

// D:\...\feature_auth\src\main\java\com\smartblood\auth\ui\splash\SplashScreen.kt

package com.example.feature_auth.ui.splash

```
// --- CÁC IMPORT MỚI CẦN THÊM ---
import androidx.compose.animation.core.Animatable
import androidx.compose.animation.core.RepeatMode
import androidx.compose.animation.core.animateDpAsState
import androidx.compose.animation.core.infiniteRepeatable
// -----

import androidx.compose.animation.core.animateFloatAsState
import androidx.compose.animation.core.tween
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.Arrangement
import androidx.compose.foundation.layout.Box
import androidx.compose.foundation.layout.Column
import androidx.compose.foundation.layout.Spacer
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.foundation.layout.height
import androidx.compose.foundation.layout.offset // --- IMPORT MỚI ---
import androidx.compose.foundation.layout.size
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.filled.Favorite
import androidx.compose.material3.Icon
import androidx.compose.material3.Text
import androidx.compose.runtime.Composable
import androidx.compose.runtime.LaunchedEffect
import androidx.compose.runtime.collectAsState
import androidx.compose.runtime.getValue
import androidx.compose.runtime.mutableStateOf
import androidx.compose.runtime.remember
import androidx.compose.runtime.setValue
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.alpha
import androidx.compose.ui.draw.scale // --- IMPORT MỚI ---
import androidx.compose.ui.graphics.Brush
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.Dp // --- IMPORT MỚI ---
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.hilt.navigation.compose.hiltViewModel
import com.smartblood.core.ui.theme.PrimaryRed
import com.smartblood.core.ui.theme.PrimaryRedDark
```

```

import com.smartblood.core.ui.theme.SmartBloodTheme
import kotlinx.coroutines.delay

@Composable
fun SplashScreen(
    viewModel: SplashViewModel = hiltViewModel(),
    navigateToLogin: () -> Unit,
    navigateToDashboard: () -> Unit
) {
    val isAuthenticated by viewModel.isAuthenticated.collectAsState()
    var startAnimation by remember { mutableStateOf(false) } // <--- Đổi tên biến alphaAnim
    thành startAnimation để rõ nghĩa hơn

    // Kích hoạt animation và xử lý điều hướng
    LaunchedEffect(key1 = true) {
        startAnimation = true
        delay(3000L) // Tăng thời gian chờ lên 3 giây để xem animation rõ hơn

        // Sau khi chờ, nếu chưa có kết quả xác thực thì mặc định đi đến login
        if (isAuthenticated == null) {
            navigateToLogin()
        }
    }

    // Thêm một LaunchedEffect khác để xử lý điều hướng ngay khi có kết quả
    LaunchedEffect(key1 = isAuthenticated) {
        if (isAuthenticated != null) {
            if (isAuthenticated == true) {
                navigateToDashboard()
            } else {
                navigateToLogin()
            }
        }
    }

    // Gọi giao diện Splash và truyền vào công tắc animation
    SplashContent(startAnimation = startAnimation)
}

// Tách riêng phần giao diện để dễ dàng preview và tái sử dụng
@Composable
fun SplashContent(startAnimation: Boolean) { // <--- THAM SỐ ĐÃ THAY ĐỔI

```

```
// --- NÂNG CẤP 1: ANIMATION CHO HIỆU ỨNG "BƠM TIM" ---
val scale = remember { Animatable(1f) }
LaunchedEffect(startAnimation) {
    if (startAnimation) {
        scale.animateTo(
            targetValue = 1.1f, // Phóng to 10%
            animationSpec = infiniteRepeatable(
                animation = tween(durationMillis = 700), // Thời gian 1 nhịp
                repeatMode = RepeatMode.Reverse // Lặp ngược lại (phóng to -> thu nhỏ)
            )
        )
    }
}
}
```

```
// --- NÂNG CẤP 2: ANIMATION CHO HIỆU ỨNG "TRƯỢT LÊN" ---
val offsetY: Dp by animateDpAsState(
    targetValue = if (startAnimation) 0.dp else 100.dp,
    animationSpec = tween(durationMillis = 1500),
    label = "offset_animation"
)
```

```
// --- GIỮ NGUYÊN: ANIMATION CHO HIỆU ỨNG "MỜ DẦN" ---
val alpha: Float by animateFloatAsState(
    targetValue = if (startAnimation) 1f else 0f,
    animationSpec = tween(durationMillis = 1500),
    label = "alpha_animation"
)
```

```
Box(
    modifier = Modifier
        .fillMaxSize()
        .background(
            Brush.verticalGradient(
                colors = listOf(
                    PrimaryRed,
                    PrimaryRedDark
                )
            )
        ),
    contentAlignment = Alignment.Center
){
    Column(
        horizontalAlignment = Alignment.CenterHorizontally,
```

```

        verticalArrangement = Arrangement.Center,
        modifier = Modifier.alpha(alpha) // Vẫn áp dụng hiệu ứng mờ dần
    ){
        // NÂNG CẤP: Áp dụng hiệu ứng "Bơm Tim" vào Icon
        Icon(
            imageVector = Icons.Default.Favorite,
            contentDescription = "App Logo",
            modifier = Modifier
                .size(120.dp)
                .scale(scale.value), // <-- Dùng giá trị scale từ animation
            tint = Color.White
        )

        Spacer(modifier = Modifier.height(24.dp))

        // NÂNG CẤP: Áp dụng hiệu ứng "Trượt Lên" vào Text
        Text(
            modifier = Modifier.offset(y = offsetY), // <-- Dùng giá trị offset từ animation
            text = "Smart Blood Donation",
            color = Color.White,
            fontSize = 28.sp,
            fontWeight = FontWeight.Bold
        )
    }
}

// Hàm Preview để xem trước giao diện ngay trong Android Studio
@Preview(showBackground = true, name = "Splash Screen Preview")
@Composable
fun SplashScreenPreview() {
    SmartBloodTheme {
        // Thay đổi tham số để xem trước trạng thái animation đã bắt đầu
        SplashContent(startAnimation = true)
    }
}

feature\_auth/src/main/java/com/example/feature\_auth/ui/splash/SplashViewModel.kt
// feature_auth/src/main/java/com/smartblood/auth/ui/splash/SplashViewModel.kt

package com.example.feature_auth.ui.splash

```

```

import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.smartblood.auth.domain.usecase.CheckUserAuthenticationUseCase
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.delay
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.launch
import javax.inject.Inject

@HiltViewModel
class SplashViewModel @Inject constructor(
    private val checkUserAuthenticationUseCase: CheckUserAuthenticationUseCase
) : ViewModel() {

    private val _isAuthenticated = MutableStateFlow<Boolean?>(null)
    val isAuthenticated = _isAuthenticated.asStateFlow()

    init {
        checkAuthentication()
    }

    private fun checkAuthentication() {
        viewModelScope.launch {
            // Thêm một khoảng trễ nhỏ (ví dụ 2 giây) để người dùng có thể thấy splash screen
            // Điều này cũng cho Firebase SDK thời gian để khởi tạo và kiểm tra trạng thái đăng
            nhập.
            delay(2000L)
            _isAuthenticated.value = checkUserAuthenticationUseCase()
        }
    }
}

```

[feature_auth/src/test/java/com/example/feature_auth/ExampleUnitTest.kt](#)
package com.example.feature_auth

```

import org.junit.Test

import org.junit.Assert.*

/**
 * Example local unit test, which will execute on the development machine (host).
 *
 */

```

* See [testing documentation](<http://d.android.com/tools/testing>).

*/

```
class ExampleUnitTest {  
    @Test  
    fun addition_isCorrect() {  
        assertEquals(4, 2 + 2)  
    }  
}
```

feature_chatbot/.gitignore

/build

feature_chatbot/build.gradle.kts

```
plugins {  
    alias(libs.plugins.android.library)  
    alias(libs.plugins.kotlin.android)  
    alias(libs.plugins.kotlin.compose.compiler)  
  
}  
  
android {  
    namespace = "com.example.feature_chatbot"  
    compileSdk = 34  
  
    defaultConfig {  
        minSdk = 24  
  
        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"  
        consumerProguardFiles("consumer-rules.pro")  
    }  
  
    buildTypes {  
        release {  
            isMinifyEnabled = false  
            proguardFiles(  
                getDefaultProguardFile("proguard-android-optimize.txt"),  
                "proguard-rules.pro"  
            )  
        }  
    }  
}  
  
compileOptions {  
    sourceCompatibility = JavaVersion.VERSION_11  
    targetCompatibility = JavaVersion.VERSION_11  
}
```



```

kotlinOptions {
    jvmTarget = "11"
}

dependencies {
    implementation(project(":core"))
    implementation(libs.androidx.core.ktx)
    // implementation(libs.androidx.appcompat)
    // implementation(libs.material)
    testImplementation(libs.junit)
    androidTestImplementation(libs.androidx.junit)
    androidTestImplementation(libs.androidx.espresso.core)
}

```

feature_chatbot/consumer-rules.pro

[File rỗng]

feature_chatbot/proguard-rules.pro

```

# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#    public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to
# hide the original source file name.
#-renamesourcefileattribute SourceFile

```

feature_chatbot/src/androidTest/java/com/example/feature_chatbot/ExampleInstrumentedTest.kt

```
package com.example.feature_chatbot
```

```
import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4
```

```
import org.junit.Test
import org.junit.runner.RunWith
```

```
import org.junit.Assert.*
```

```
/**
 * Instrumented test, which will execute on an Android device.
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.feature_chatbot.test", appContext.packageName)
    }
}
```

feature_chatbot/src/main/AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

</manifest>
```

feature_chatbot/src/test/java/com/example/feature_chatbot/ExampleUnitTest.kt

```
package com.example.feature_chatbot
```

```
import org.junit.Test
```

```
import org.junit.Assert.*
```

```
/**
 * Example local unit test, which will execute on the development machine (host).
```

```

*
* See [testing documentation](http://d.android.com/tools/testing).
*/
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
    }
}

```

feature_emergency/.gitignore

```
/build
```

feature_emergency/build.gradle.kts

```

plugins {
    alias(libs.plugins.android.library)
    alias(libs.plugins.kotlin.android)
    alias(libs.plugins.kotlin.compose.compiler)
}

android {
    namespace = "com.example.feature_emergency"
    compileSdk = 34

    defaultConfig {
        minSdk = 24

        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"
        consumerProguardFiles("consumer-rules.pro")
    }

    buildTypes {
        release {
            isMinifyEnabled = false
            proguardFiles(
                getDefaultProguardFile("proguard-android-optimize.txt"),
                "proguard-rules.pro"
            )
        }
    }
}

compileOptions {
    sourceCompatibility = JavaVersion.VERSION_11
    targetCompatibility = JavaVersion.VERSION_11
}

```

```

    }
    kotlinOptions {
        jvmTarget = "11"
    }
}

dependencies {
    implementation(project(":core"))
    implementation(libs.androidx.core.ktx)
    // implementation(libs.androidx.appcompat)
    // implementation(libs.material)
    testImplementation(libs.junit)
    androidTestImplementation(libs.androidx.junit)
    androidTestImplementation(libs.androidx.espresso.core)
}

```

feature_emergency/consumer-rules.pro

[File rỗng]

feature_emergency/proguard-rules.pro

```

# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#   public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to
# hide the original source file name.
#-renamesourcefileattribute SourceFile

```

feature_emergency/src/androidTest/java/com/example/feature_emergency/ExampleInstrumentedTest.kt

```
package com.example.feature_emergency
```

```
import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4
```

```
import org.junit.Test
import org.junit.runner.RunWith
```

```
import org.junit.Assert.*
```

```
/**
 * Instrumented test, which will execute on an Android device.
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.feature_emergency.test", appContext.packageName)
    }
}
```

feature_emergency/src/main/AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

</manifest>
```

feature_emergency/src/test/java/com/example/feature_emergency/ExampleUnitTest.kt

```
package com.example.feature_emergency
```

```
import org.junit.Test
```

```
import org.junit.Assert.*
```

```
/**
 * Example local unit test, which will execute on the development machine (host).
```

```

*
* See [testing documentation](http://d.android.com/tools/testing).
*/
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
    }
}

```

feature_map_booking/.gitignore

```
/build
```

feature_map_booking/build.gradle.kts

```

plugins {
    alias(libs.plugins.android.library)
    alias(libs.plugins.kotlin.android)
    alias(libs.plugins.kotlin.compose.compiler)
    alias(libs.plugins.hilt)
    alias(libs.plugins.ksp)
    // THÊM MỚI: Plugin để quản lý secrets, bao gồm API key
    // alias(libs.plugins.maps.secrets)
}

android {
    namespace = "com.smartblood.mapbooking"
    compileSdk = 34

    defaultConfig {
        minSdk = 24
        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"
        consumerProguardFiles("consumer-rules.pro")
    }

    buildTypes {
        release {
            isMinifyEnabled = false
            proguardFiles(
                getDefaultProguardFile("proguard-android-optimize.txt"),
                "proguard-rules.pro"
            )
        }
    }
}

compileOptions {

```

```

        sourceCompatibility = JavaVersion.VERSION_11
        targetCompatibility = JavaVersion.VERSION_11
    }
    kotlinOptions {
        jvmTarget = "11"
    }
    buildFeatures {
        compose = true
    }
}

dependencies {
    implementation(project(":core"))
    implementation(libs.androidx.core.ktx)

    // THÊM MỚI: Google Maps & Location Services
    implementation(libs.play.services.maps)
    implementation(libs.maps.compose) // Google Maps for Jetpack Compose
    implementation(libs.play.services.location)
    implementation(libs.trackasia.sdk)
    implementation(libs.trackasia.annotation.plugin)

    // Hilt
    implementation(libs.hilt.android)
    implementation(libs.firebase.auth)
    ksp(libs.hilt.compiler)
    implementation(libs.androidx.hilt.navigation.compose)

    // Lifecycle & Coroutines
    implementation(libs.androidx.lifecycle.runtime.ktx)
    implementation(libs.androidx.lifecycle.viewmodel.compose)
    implementation(libs.kotlinx.coroutines.core)
    implementation(libs.kotlinx.coroutines.android)
    // Cần thiết để coroutines hoạt động với Task API của Firebase/Play Services
    implementation(libs.kotlinx.coroutines.play.services)

    // Firebase
    implementation(platform(libs.firebase.bom))
    implementation(libs.firebase.firestore.ktx)

    // Jetpack Compose
    implementation(libs.androidx.compose.ui)
    implementation(libs.androidx.compose.material3)

```

```

implementation(libs.androidx.compose.ui.tooling.preview)
debugImplementation(libs.androidx.compose.ui.tooling)
implementation(libs.androidx.compose.material.icons.extended)

// Testing
testImplementation(libs.junit)
androidTestImplementation(libs.androidx.junit)
androidTestImplementation(libs.androidx.espresso.core)
}

```

feature_map_booking/consumer-rules.pro

[File rỗng]

feature_map_booking/proguard-rules.pro

```

# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#   public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to
# hide the original source file name.
#-renamesourcefileattribute SourceFile

```

feature_map_booking/src/androidTest/java/com/example/feature_map_booking/ExampleInstrumentedTest.kt

```

package com.example.feature_map_booking

import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4

```



```

import org.junit.Test
import org.junit.runner.RunWith

import org.junit.Assert.*

/**
 * Instrumented test, which will execute on an Android device.
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.feature_map_booking.test", appContext.packageName)
    }
}

```

feature_map_booking/src/main/AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

</manifest>

```

feature_map_booking/src/main/java/com/example/feature_map_booking/domain/data/repository/FakeHospitalDataSource.kt

```

import com.example.feature_map_booking.domain.model.Hospital
import com.google.firebase.firestore.GeoPoint

// Đây là nguồn dữ liệu duy nhất cho toàn bộ ứng dụng ở giai đoạn này
object FakeHospitalDataSource {
    val hospitals = listOf(
        Hospital(
            id = "bv_cho_ray",
            name = "Bệnh viện Chợ Rẫy",
            address = "201B Nguyễn Chí Thanh, Phường 12, Quận 5, TP.HCM",
            location = GeoPoint(10.7581, 106.6622),
            phone = "028 3855 4137",
            workingHours = "Tiếp nhận máu 24/7",
            availableBloodTypes = listOf("Tất cả các nhóm")
        ),
    ),

```

```

Hospital(
    id = "bv_truyen_mau_huyet_hoc",
    name = "Bệnh viện Truyền máu Huyết học",
    address = "118 Hồng Bàng, Phường 12, Quận 5, TP.HCM",
    location = GeoPoint(10.7597, 106.6608),
    phone = "028 3957 1342",
    workingHours = "7:00 - 16:30 (Thứ 2 - CN)",
    availableBloodTypes = listOf("Tất cả các nhóm")
),
Hospital(
    id = "trung_tam_hien_mau_nhan_dao",
    name = "Trung tâm Hiến máu Nhân đạo TP.HCM",
    address = "106 Thiên Phước, Phường 9, Quận Tân Bình, TP.HCM",
    location = GeoPoint(10.7828, 106.6454),
    phone = "028 3868 5506",
    workingHours = "7:00 - 16:00 (Thứ 2 - Thứ 6)",
    availableBloodTypes = listOf("Tất cả các nhóm")
),
Hospital(
    id = "bv_nhan_dan_gia_dinh",
    name = "Bệnh viện Nhân dân Gia Định",
    address = "1 Nơ Trang Long, Phường 7, Quận Bình Thạnh, TP.HCM",
    location = GeoPoint(10.8003, 106.6973),
    phone = "028 3841 2692",
    workingHours = "Tiếp nhận máu giờ hành chính",
    availableBloodTypes = listOf("A", "B", "O")
),
Hospital(
    id = "bv_hung_vuong",
    name = "Bệnh viện Hùng Vương",
    address = "128 Hồng Bàng, Phường 12, Quận 5, TP.HCM",
    location = GeoPoint(10.7588, 106.6573),
    phone = "028 3855 8532",
    workingHours = "Tiếp nhận máu giờ hành chính",
    availableBloodTypes = listOf("A", "O")
),
Hospital(
    id = "bv_nhi_dong_1",
    name = "Bệnh viện Nhi đồng 1",
    address = "341 Sư Vạn Hạnh, Phường 10, Quận 10, TP.HCM",
    location = GeoPoint(10.7711, 106.6699),
    phone = "028 3927 1119",
    workingHours = "Tiếp nhận máu 24/7 (ưu tiên khẩn cấp)",

```

```

        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "bv_thong_nhat",
        name = "Bệnh viện Thống Nhất",
        address = "1 Lý Thường Kiệt, Phường 7, Quận Tân Bình, TP.HCM",
        location = GeoPoint(10.7853, 106.6502),
        phone = "028 3864 2142",
        workingHours = "Tiếp nhận máu giờ hành chính",
        availableBloodTypes = listOf("B", "O")
    ),
    Hospital(
        id = "diem_hien_mau_quan_5",
        name = "Điểm hiến máu Chữ Thập Đỏ Quận 5",
        address = "201 Nguyễn Trãi, Phường 3, Quận 5, TP.HCM",
        location = GeoPoint(10.7610, 106.6804),
        phone = "(028) 38 382 646",
        workingHours = "7:30 - 16:00 (Thứ 2 - Thứ 7)",
        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "bv_tu_du",
        name = "Bệnh viện Từ Dũ",
        address = "284 Cống Quỳnh, Phường Phạm Ngũ Lão, Quận 1, TP.HCM",
        location = GeoPoint(10.7686, 106.6888),
        phone = "028 5404 2829",
        workingHours = "Tiếp nhận máu 24/7",
        availableBloodTypes = listOf("O", "A")
    ),
    Hospital(
        id = "bv_ung_buou",
        name = "Bệnh viện Ung Bướu (Cơ sở 2)",
        address = "Đường 400, Long Thạnh Mỹ, Thành phố Thủ Đức, TP.HCM",
        location = GeoPoint(10.8497, 106.8248),
        phone = "028 3844 5217",
        workingHours = "Tiếp nhận máu giờ hành chính",
        availableBloodTypes = listOf("Tất cả các nhóm")
    )
)
}

```

feature_map_booking/src/main/java/com/example/feature_map_booking/domain/data/repository/MapBookingRepositoryImpl.kt

```
package com.example.feature_map_booking.domain.data.repository
//
feature_map_booking/src/main/java/com/smartblood/mapbooking/data/repository/Map
BookingRepositoryImpl.kt
```

```
import com.example.feature_map_booking.domain.model.Appointment
import com.example.feature_map_booking.domain.model.Hospital
import com.example.feature_map_booking.domain.model.TimeSlot
import com.example.feature_map_booking.domain.repository.MapBookingRepository
import com.google.firebase.auth.FirebaseAuth
import com.google.firebase.firestore.FirebaseFirestore
import kotlinx.coroutines.tasks.await
import java.util.*
import javax.inject.Inject
import kotlin.Result
```

```
class MapBookingRepositoryImpl @Inject constructor(
    private val firestore: FirebaseFirestore,
    private val auth: FirebaseAuth
) : MapBookingRepository {
```

```
    override suspend fun getNearbyHospitals(lat: Double, lng: Double, radiusKm: Double):
Result<List<Hospital>> {
        // Hiện tại đang dùng dữ liệu giả từ FakeHospitalDataSource
        return Result.success(FakeHospitalDataSource.hospitals)
    }
```

```
    override suspend fun getHospitalDetails(hospitalId: String): Result<Hospital> {
        // Hiện tại đang dùng dữ liệu giả từ FakeHospitalDataSource
        val hospital = FakeHospitalDataSource.hospitals.find { it.id == hospitalId }
        return if (hospital != null) {
            Result.success(hospital)
        } else {
            Result.failure(Exception("Hospital not found."))
        }
    }
```

```
    override suspend fun getAvailableSlots(hospitalId: String, date: Date):
Result<List<TimeSlot>> {
        return try {
            val calendar = Calendar.getInstance().apply { time = date }
```

```

        calendar.set(Calendar.HOUR_OF_DAY, 0); calendar.set(Calendar.MINUTE, 0);
calendar.set(Calendar.SECOND, 0)
        val startOfDay = calendar.time
        calendar.set(Calendar.HOUR_OF_DAY, 23); calendar.set(Calendar.MINUTE, 59);
calendar.set(Calendar.SECOND, 59)
        val endOfDay = calendar.time

        val appointmentsSnapshot = firestore.collection("appointments")
            .whereEqualTo("hospitalId", hospitalId)
            .whereGreaterThanOrEqualTo("dateTime", startOfDay)
            .whereLessThanOrEqualTo("dateTime", endOfDay)
            .get().await()

        val bookedHours = appointmentsSnapshot.documents.mapNotNull {
            it.toObject(Appointment::class.java)?.dateTime?.let { bookedDate ->
                Calendar.getInstance().apply { time = bookedDate }.get(Calendar.HOUR_OF_DAY)
            }
        }

        val allSlots = mutableListOf<TimeSlot>()
        val START_HOUR = 8
        val END_HOUR = 17

        for (hour in START_HOUR until END_HOUR) {
            val timeString = String.format("%02d:00", hour)
            val isBooked = bookedHours.contains(hour)
            allSlots.add(TimeSlot(time = timeString, isAvailable = !isBooked))
        }
        Result.success(allSlots)
    } catch (e: Exception) {
        Result.failure(e)
    }
}

// --- PHIÊN BẢN ĐÃ SỬA LỖI HOÀN CHỈNH ---
override suspend fun bookAppointment(hospitalId: String, dateTime: Date): Result<Unit>
{
    val currentUser = auth.currentUser ?: return Result.failure(Exception("User not
authenticated."))

    // Bước 1: Gọi hàm lấy chi tiết bệnh viện
    val hospitalResult = getHospitalDetails(hospitalId)

```

```

// Bước 2: Kiểm tra kết quả của hospitalResult
if (hospitalResult.isFailure) {
    // Nếu không tìm thấy bệnh viện, trả về lỗi ngay lập tức
    return Result.failure(hospitalResult.exceptionOrNull() ?: Exception("Unknown error
finding hospital.))
}

// Nếu tới được đây, nghĩa là hospitalResult.isSuccess là true
val hospital = hospitalResult.getOrNull() ?: return Result.failure(Exception("Hospital
data is null.))

```

```

// Bước 3: Tiếp tục logic tạo và lưu lịch hẹn
return try {
    val appointmentId = firestore.collection("appointments").document().id
    val appointment = Appointment(
        id = appointmentId,
        userId = currentUser.uid,
        hospitalId = hospitalId,
        hospitalName = hospital.name,
        hospitalAddress = hospital.address,
        dateTime = dateTime,
        status = "CONFIRMED"
    )

    firestore.collection("appointments").document(appointmentId).set(appointment).await()
    Result.success(Unit) // Trả về thành công
} catch (e: Exception) {
    Result.failure(e) // Trả về thất bại nếu có lỗi khi lưu vào Firestore
}
}

```

```

override suspend fun getMyAppointments(): Result<List<Appointment>> {
    val currentUser = auth.currentUser ?: return Result.failure(Exception("User not
authenticated.))
    return try {
        val querySnapshot = firestore.collection("appointments")
            .whereEqualTo("userId", currentUser.uid)
            .orderBy("dateTime", com.google.firebase.firestore.Query.Direction.DESCENDING)
        // Sắp xếp mới nhất lên đầu
        .get()
        .await()

        val appointments = querySnapshot.toObject(Appointment::class.java)
    }
}

```

```

        Result.success(appointments)
    } catch (e: Exception) {
        Result.failure(e)
    }
}
}
}

```

feature_map_booking/src/main/java/com/example/feature_map_booking/domain/di/MapBookingModule.kt

```

package com.example.feature_map_booking.domain.di

//
feature_map_booking/src/main/java/com/smartblood/mapbooking/di/MapBookingModule.kt

```

```

import
com.example.feature_map_booking.domain.data.repository.MapBookingRepositoryImpl
import com.example.feature_map_booking.domain.repository.MapBookingRepository
import dagger.Binds
import dagger.Module
import dagger.hilt.InstallIn
import dagger.hilt.components.SingletonComponent
import javax.inject.Singleton

```

```

@Module
@InstallIn(SingletonComponent::class)
abstract class MapBookingModule {

```

```

    @Binds
    @Singleton
    abstract fun bindMapBookingRepository(
        mapBookingRepositoryImpl: MapBookingRepositoryImpl
    ): MapBookingRepository
}

```

feature_map_booking/src/main/java/com/example/feature_map_booking/domain/model/Appointment.kt

```

package com.example.feature_map_booking.domain.model

```

```

//
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/model/Appointment.kt

```

```

import java.util.Date

```

```

data class Appointment(
    val id: String = "",
    val userId: String = "",
    val hospitalId: String = "",
    val hospitalName: String = "",
    val hospitalAddress: String = "",
    val dateTime: Date = Date(),
    val status: String = "PENDING" // PENDING, CONFIRMED, CANCELED, COMPLETED
)

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/model/Hospital.kt](#)

```

//
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/model/Hospital.kt
package com.example.feature_map_booking.domain.model

```

```

import com.google.firebase.firestore.GeoPoint

```

```

data class Hospital(
    val id: String = "",
    val name: String = "",
    val address: String = "",
    val location: GeoPoint? = null,
    val phone: String = "",
    val workingHours: String = "",
    val availableBloodTypes: List<String> = emptyList()
)

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/model/TimeSlot.kt](#)

```

//
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/model/TimeSlot.kt
package com.example.feature_map_booking.domain.model
data class TimeSlot(
    val time: String = "", // e.g., "09:00"
    val isAvailable: Boolean = true
)

```


[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/repository/MapBookingRepository.kt](#)

```
package com.example.feature_map_booking.domain.repository
```

```
//  
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/repository/  
MapBookingRepository.kt
```

```
import com.example.feature_map_booking.domain.model.Appointment  
import com.example.feature_map_booking.domain.model.Hospital  
import com.example.feature_map_booking.domain.model.TimeSlot  
import java.util.Date  
import kotlin.Result
```

```
interface MapBookingRepository {  
    suspend fun getNearbyHospitals(lat: Double, lng: Double, radiusKm: Double):  
    Result<List<Hospital>>  
    suspend fun getHospitalDetails(hospitalId: String): Result<Hospital>  
    suspend fun getAvailableSlots(hospitalId: String, date: Date): Result<List<TimeSlot>>  
    suspend fun bookAppointment(  
        hospitalId: String,  
        dateTime: Date  
    ): Result<Unit>  
  
    suspend fun getMyAppointments(): Result<List<Appointment>>  
  
}
```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/booking/BookingContract.kt](#)

```
package com.example.feature_map_booking.domain.ui.booking
```

```
//  
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/booking/BookingC  
ontract.kt
```

```
import com.example.feature_map_booking.domain.model.TimeSlot  
import java.util.Date
```

```
data class BookingState(  
    val hospitalId: String = "",  
    val hospitalName: String = "",  
    val isLoadingSlots: Boolean = false,
```

```

    val isBooking: Boolean = false,
    val selectedDate: Date = Date(),
    val timeSlots: List<TimeSlot> = emptyList(),
    val error: String? = null,
    val bookingSuccess: Boolean = false
)

```

```

sealed class BookingEvent {
    data class OnDateSelected(val date: Date) : BookingEvent()
    data class OnSlotSelected(val time: String) : BookingEvent()
    object OnConfirmBooking : BookingEvent()
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/booking/BookingScreen.kt](#)

```

package com.example.feature_map_booking.domain.ui.booking

```

```

//
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/booking/BookingScreen.kt

```

```

import android.app.DatePickerDialog
import android.widget.DatePicker
import androidx.compose.foundation.BorderStroke
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.lazy.grid.GridCells
import androidx.compose.foundation.lazy.grid.LazyVerticalGrid
import androidx.compose.foundation.lazy.grid.items
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.automirrored.filled.ArrowBack
import androidx.compose.material3.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.platform.LocalContext
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.dp
import androidx.hilt.navigation.compose.hiltViewModel
import com.example.feature_map_booking.domain.model.TimeSlot
import java.text.SimpleDateFormat
import java.util.Calendar
import java.util.Date

```

```
import java.util.Locale
```

```
@OptIn(ExperimentalMaterial3Api::class)
```

```
@Composable
```

```
fun BookingScreen(
```

```
    viewModel: BookingViewModel = hiltViewModel(),
```

```
    onBookingSuccess: () -> Unit,
```

```
    onNavigateBack: () -> Unit
```

```
) {
```

```
    val state by viewModel.state.collectAsState()
```

```
    val snackbarHostState = remember { SnackbarHostState() }
```

```
    val context = LocalContext.current
```

```
    val calendar = Calendar.getInstance()
```

```
    val datePickerDialog = remember {
```

```
        DatePickerDialog(
```

```
            context,
```

```
            { _: DatePicker, year: Int, month: Int, dayOfMonth: Int ->
```

```
                calendar.set(year, month, dayOfMonth)
```

```
                viewModel.onEvent(BookingEvent.OnDateSelected(calendar.time))
```

```
            },
```

```
            calendar.get(Calendar.YEAR),
```

```
            calendar.get(Calendar.MONTH),
```

```
            calendar.get(Calendar.DAY_OF_MONTH)
```

```
        ).apply {
```

```
            datePicker.minDate = System.currentTimeMillis()
```

```
        }
```

```
    }
```

```
    LaunchedEffect(state.bookingSuccess) {
```

```
        if (state.bookingSuccess) {
```

```
            onBookingSuccess()
```

```
        }
```

```
    }
```

```
    LaunchedEffect(state.error) {
```

```
        state.error?.let {
```

```
            snackbarHostState.showSnackbars(it)
```

```
            viewModel.clearError()
```

```
        }
```

```
    }
```

```
    Scaffold(
```

```

        snackbarHost = { SnackbarHost(snackbarHostState) },
        topBar = {
            TopAppBar(
                title = { Text("Đặt lịch hẹn") },
                navigationIcon = {
                    IconButton(onClick = onNavigateBack) {
                        Icon(
                            imageVector = Icons.AutoMirrored.Filled.ArrowBack,
                            contentDescription = "Back"
                        )
                    }
                }
            )
        }
    ) { paddingValues ->
        Column(
            modifier = Modifier
                .padding(paddingValues)
                .padding(16.dp)
                .fillMaxSize()
        ) {
            Text(
                text = state.hospitalName,
                style = MaterialTheme.typography.titleLarge,
                fontWeight = FontWeight.Bold
            )
            Spacer(modifier = Modifier.height(16.dp))

            val dateFormat = remember { SimpleDateFormat("dd/MM/yyyy",
Locale.getDefault()) }
            Text("Chọn ngày: ${dateFormat.format(state.selectedDate)}")
            Spacer(modifier = Modifier.height(8.dp))
            Button(onClick = { datePickerDialog.show() }) {
                Text("Đổi ngày")
            }

            Spacer(modifier = Modifier.height(24.dp))
            Text("Chọn khung giờ:", style = MaterialTheme.typography.titleMedium)
            Spacer(modifier = Modifier.height(8.dp))

            if (state.isLoadingSlots) {
                CircularProgressIndicator()
            } else {

```

```

// --- DÒNG ĐÃ SỬA LỖI ---
var selectedTime by remember { mutableStateOf<String?>(null) }

LazyVerticalGrid(
    columns = GridCells.Adaptive(minSize = 100.dp),
    verticalArrangement = Arrangement.spacedBy(8.dp),
    horizontalArrangement = Arrangement.spacedBy(8.dp)
) {
    items(state.timeSlots) { slot ->
        TimeSlotItem(
            timeSlot = slot,
            isSelected = slot.time == selectedTime,
            onSelect = {
                selectedTime = it
                viewModel.onEvent(BookingEvent.OnSlotSelected(it))
            }
        )
    }
}

Spacer(modifier = Modifier.weight(1f))

Button(
    onClick = { viewModel.onEvent(BookingEvent.OnConfirmBooking) },
    enabled = !state.isBooking,
    modifier = Modifier
        .fillMaxWidth()
        .height(50.dp)
) {
    if (state.isBooking) {
        CircularProgressIndicator(modifier = Modifier.size(24.dp), color =
MaterialTheme.colorScheme.onPrimary)
    } else {
        Text("Xác nhận")
    }
}
}
}
}

@Composable
fun TimeSlotItem(

```

```

        timeSlot: TimeSlot,
        isSelected: Boolean,
        onSelect: (String) -> Unit
    ) {
        val colors = ButtonDefaults.outlinedButtonColors(
            containerColor = if (isSelected) MaterialTheme.colorScheme.primary else
MaterialTheme.colorScheme.surface,
            contentColor = if (isSelected) MaterialTheme.colorScheme.onPrimary else
MaterialTheme.colorScheme.primary
        )
        OutlinedButton(
            onClick = { onSelect(timeSlot.time) },
            enabled = timeSlot.isAvailable,
            colors = colors,
            border = BorderStroke(1.dp, MaterialTheme.colorScheme.primary)
        ) {
            Text(text = timeSlot.time)
        }
    }
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/booking/BookingViewModel.kt](#)

```
package com.example.feature_map_booking.domain.ui.booking
```

```
//
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/booking/BookingV
iewModel.kt
```

```

import androidx.lifecycle.SavedStateHandle
import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.example.feature_map_booking.domain.usecase.BookAppointmentUseCase
import com.example.feature_map_booking.domain.usecase.GetAvailableSlotsUseCase
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch
import java.util.Calendar
import java.util.Date
import javax.inject.Inject

```

```
@HiltViewModel
```

```

class BookingViewModel @Inject constructor(
    private val getAvailableSlotsUseCase: GetAvailableSlotsUseCase,
    private val bookAppointmentUseCase: BookAppointmentUseCase,
    savedStateHandle: SavedStateHandle
): ViewModel() {

    private val _state = MutableStateFlow(BookingState())
    val state = _state.asStateFlow()

    private val hospitalId: String = checkNotNull(savedStateHandle["hospitalId"])
    private var selectedTime: String? = null

    init {
        _state.update { it.copy(hospitalId = hospitalId, hospitalName =
savedStateHandle["hospitalName"] ?: "") }
        fetchSlotsForDate(Date())
    }
    fun clearError() {
        _state.update { it.copy(error = null) }
    }

    fun onEvent(event: BookingEvent) {
        when (event) {
            is BookingEvent.OnDateSelected -> {
                _state.update { it.copy(selectedDate = event.date) }
                fetchSlotsForDate(event.date)
            }
            is BookingEvent.OnSlotSelected -> {
                selectedTime = event.time
            }
            is BookingEvent.OnConfirmBooking -> {
                confirmBooking()
            }
        }
    }

    private fun fetchSlotsForDate(date: Date) {
        viewModelScope.launch {
            _state.update { it.copy(isLoadingSlots = true, error = null) } // Xóa lỗi cũ khi fetch lại
            getAvailableSlotsUseCase(hospitalId, date)
                .onSuccess { slots ->
                    _state.update { it.copy(isLoadingSlots = false, timeSlots = slots) }
                }
        }
    }
}

```

```

        .onFailure { error ->
            _state.update { it.copy(isLoadingSlots = false, error = error.message) }
        }
    }
}

```

```

private fun confirmBooking() {
    // 1. Lấy giờ đã chọn. Nếu chưa chọn, báo lỗi và dừng lại.
    val timeString = selectedTime ?: run {
        _state.update { it.copy(error = "Vui lòng chọn một khung giờ.") }
        return
    }
}

```

```

viewModelScope.launch {
    _state.update { it.copy(isBooking = true, error = null) }
}

```

```

try {
    // 2. Tạo đối tượng Calendar và đặt ngày tháng năm từ state
    val calendar = Calendar.getInstance().apply {
        time = _state.value.selectedDate

        // 3. Phân tích chuỗi giờ (vd: "14:00") để lấy giờ và phút
        val (hour, minute) = timeString.split(":").map { it.toInt() }

        // 4. Cập nhật giờ, phút, giây cho Calendar
        set(Calendar.HOUR_OF_DAY, hour)
        set(Calendar.MINUTE, minute)
        set(Calendar.SECOND, 0)
        set(Calendar.MILLISECOND, 0)
    }
}

```

```

// 5. Lấy ra đối tượng Date cuối cùng đã được kết hợp
val finalDateTime = calendar.time

```

```

// 6. Gọi UseCase để đặt lịch
bookAppointmentUseCase(hospitalId, finalDateTime)
    .onSuccess {
        _state.update { it.copy(isBooking = false, bookingSuccess = true) }
    }
    .onFailure { error ->
        _state.update { it.copy(isBooking = false, error = error.message) }
    }
}

```

```

} catch (e: NumberFormatException) {
}

```



```

        // 7. Bắt lỗi nếu định dạng giờ không hợp lệ
        _state.update { it.copy(isBooking = false, error = "Định dạng giờ không hợp lệ.") }
    }
}
}
}

```

feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/location_detail/LocationDetailContract.kt

```
package com.example.feature_map_booking.domain.ui.location_detail
```

```
//
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/location_detail/LocationDetailContract.kt
```

```
import com.example.feature_map_booking.domain.model.Hospital
```

```
data class LocationDetailState(
    val isLoading: Boolean = true,
    val hospital: Hospital? = null,
    val error: String? = null
)
```

feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/location_detail/LocationDetailScreen.kt

```
package com.example.feature_map_booking.domain.ui.location_detail
```

```
//
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/location_detail/LocationDetailScreen.kt
```

```
import androidx.compose.foundation.layout.*
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.automirrored.filled.ArrowBack
import androidx.compose.material.icons.filled.Phone
import androidx.compose.material.icons.filled.Schedule
import androidx.compose.material.icons.filled.Business
import androidx.compose.material.icons.filled.Bloodtype
import androidx.compose.material3.*
import androidx.compose.runtime.Composable
import androidx.compose.runtime.collectAsState

```

```

import androidx.compose.runtime.getValue
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.graphics.vector.ImageVector
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.hilt.navigation.compose.hiltViewModel
import com.example.feature_map_booking.domain.model.Hospital

```

```

@OptIn(ExperimentalMaterial3Api::class)

```

```

@Composable

```

```

fun LocationDetailScreen(
    viewModel: LocationDetailViewModel = hiltViewModel(),
    onNavigateToBooking: (hospitalId: String, hospitalName: String) -> Unit,
    onNavigateBack: () -> Unit
) {
    val state by viewModel.state.collectAsState()

```

```

    Scaffold(
        topBar = {
            TopAppBar(
                title = { Text("Chi tiết địa điểm") },
                navigationIcon = {
                    IconButton(onClick = onNavigateBack) {
                        Icon(
                            imageVector = Icons.AutoMirrored.Filled.ArrowBack,
                            contentDescription = "Back"
                        )
                    }
                }
            )
        }
    ) { paddingValues ->
        Box(
            modifier = Modifier
                .fillMaxSize()
                .padding(paddingValues)
        ) {
            if (state.isLoading) {
                CircularProgressIndicator(modifier = Modifier.align(Alignment.Center))
            } else if (state.hospital != null) {
                HospitalDetails(

```

```

        hospital = state.hospital!!,
        onBookAppointment = {
            onNavigateToBooking(state.hospital!!.id, state.hospital!!.name)
        }
    )
} else {
    Text(
        text = state.error ?: "Không thể tải thông tin bệnh viện.",
        modifier = Modifier.align(Alignment.Center)
    )
}
}
}
}
}

```

@Composable

```

fun HospitalDetails(hospital: Hospital, onBookAppointment: () -> Unit) {
    Column(
        modifier = Modifier
            .fillMaxSize()
            .padding(16.dp),
        verticalArrangement = Arrangement.spacedBy(16.dp)
    ) {
        Text(
            text = hospital.name,
            style = MaterialTheme.typography.headlineMedium,
            fontWeight = FontWeight.Bold
        )

        Divider()

        InfoRow(icon = Icons.Filled.Business, text = hospital.address)
        InfoRow(icon = Icons.Filled.Phone, text = hospital.phone)
        InfoRow(icon = Icons.Filled.Schedule, text = hospital.workingHours)
        InfoRow(
            icon = Icons.Default.Bloodtype,
            text = "Nhóm máu đang cần: ${hospital.availableBloodTypes.joinToString(", ")}"
        )

        Spacer(modifier = Modifier.weight(1f))

        Button(
            onClick = onBookAppointment,

```

```

        modifier = Modifier
            .fillMaxWidth()
            .height(50.dp)
    ) {
        Text(text = "Đặt lịch hiến máu", fontSize = 16.sp)
    }
}
}

@Composable
fun InfoRow(icon: ImageVector, text: String) {
    Row(
        verticalAlignment = Alignment.CenterVertically,
        horizontalArrangement = Arrangement.spacedBy(16.dp)
    ) {
        Icon(imageVector = icon, contentDescription = null, tint =
MaterialTheme.colorScheme.primary)
        Text(text = text, style = MaterialTheme.typography.bodyLarge)
    }
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/location_detail/LocationDetailViewModel.kt](#)

```
package com.example.feature_map_booking.domain.ui.location_detail
```

```
//
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/location_detail/LocationDetailViewModel.kt
```

```
import androidx.lifecycle.SavedStateHandle
import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.example.feature_map_booking.domain.model.Hospital
import com.example.feature_map_booking.domain.usecase.GetHospitalDetailsUseCase
import com.google.firebase.firestore.GeoPoint
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.delay
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch
import javax.inject.Inject
```

```

@HiltViewModel
class LocationDetailViewModel @Inject constructor(
    private val getHospitalDetailsUseCase: GetHospitalDetailsUseCase,
    savedStateHandle: SavedStateHandle
) : ViewModel() {

    private val _state = MutableStateFlow(LocationDetailState())
    val state = _state.asStateFlow()

    private val hospitalId: String = checkNotNull(savedStateHandle["hospitalId"])

    init {
        fetchHospitalDetails()
    }

    private fun fetchHospitalDetails() {
        viewModelScope.launch {
            _state.update { it.copy(isLoading = true) }

            // Giả lập độ trễ mạng
            delay(500)

            // Tạo lại danh sách bệnh viện giả giống hệt như trong MapViewModel
            val fakeHospitals = listOf(
                Hospital(
                    id = "bv_cho_ray",
                    name = "Bệnh viện Chợ Rẫy",
                    address = "201B Nguyễn Chí Thanh, Phường 12, Quận 5, TP.HCM",
                    location = GeoPoint(10.7581, 106.6622),
                    phone = "028 3855 4137",
                    workingHours = "Tiếp nhận máu 24/7",
                    availableBloodTypes = listOf("Tất cả các nhóm")
                ),
                Hospital(
                    id = "bv_truyen_mau_huyet_hoc",
                    name = "Bệnh viện Truyền máu Huyết học",
                    address = "118 Hồng Bàng, Phường 12, Quận 5, TP.HCM",
                    location = GeoPoint(10.7597, 106.6608),
                    phone = "028 3957 1342",
                    workingHours = "7:00 - 16:30 (Thứ 2 - CN)",
                    availableBloodTypes = listOf("Tất cả các nhóm")
                ),
                Hospital(

```

```
id = "trung_tam_hien_mau_nhan_dao",
name = "Trung tâm Hiến máu Nhân đạo TP.HCM",
address = "106 Thiên Phước, Phường 9, Quận Tân Bình, TP.HCM",
location = GeoPoint(10.7828, 106.6454),
phone = "028 3868 5506",
workingHours = "7:00 - 16:00 (Thứ 2 - Thứ 6)",
availableBloodTypes = listOf("Tất cả các nhóm")
),
Hospital(
id = "bv_nhan_dan_gia_dinh",
name = "Bệnh viện Nhân dân Gia Định",
address = "1 Nơ Trang Long, Phường 7, Quận Bình Thạnh, TP.HCM",
location = GeoPoint(10.8003, 106.6973),
phone = "028 3841 2692",
workingHours = "Tiếp nhận máu giờ hành chính",
availableBloodTypes = listOf("A", "B", "O")
),
Hospital(
id = "bv_hung_vuong",
name = "Bệnh viện Hùng Vương",
address = "128 Hồng Bàng, Phường 12, Quận 5, TP.HCM",
location = GeoPoint(10.7588, 106.6573),
phone = "028 3855 8532",
workingHours = "Tiếp nhận máu giờ hành chính",
availableBloodTypes = listOf("A", "O")
),
Hospital(
id = "bv_nhi_dong_1",
name = "Bệnh viện Nhi đồng 1",
address = "341 Sư Vạn Hạnh, Phường 10, Quận 10, TP.HCM",
location = GeoPoint(10.7711, 106.6699),
phone = "028 3927 1119",
workingHours = "Tiếp nhận máu 24/7 (ưu tiên khẩn cấp)",
availableBloodTypes = listOf("Tất cả các nhóm")
),
Hospital(
id = "bv_thong_nhat",
name = "Bệnh viện Thống Nhất",
address = "1 Lý Thường Kiệt, Phường 7, Quận Tân Bình, TP.HCM",
location = GeoPoint(10.7853, 106.6502),
phone = "028 3864 2142",
workingHours = "Tiếp nhận máu giờ hành chính",
availableBloodTypes = listOf("B", "O")
)
```

```

    ),
    Hospital(
      id = "diem_hien_mau_quan_5",
      name = "Điểm hiến máu Chữ Thập Đỏ Quận 5",
      address = "201 Nguyễn Trãi, Phường 3, Quận 5, TP.HCM",
      location = GeoPoint(10.7610, 106.6804),
      phone = "(028) 38 382 646",
      workingHours = "7:30 - 16:00 (Thứ 2 - Thứ 7)",
      availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
      id = "bv_tu_du",
      name = "Bệnh viện Từ Dũ",
      address = "284 Cống Quỳnh, Phường Phạm Ngũ Lão, Quận 1, TP.HCM",
      location = GeoPoint(10.7686, 106.6888),
      phone = "028 5404 2829",
      workingHours = "Tiếp nhận máu 24/7",
      availableBloodTypes = listOf("O", "A")
    ),
    Hospital(
      id = "bv_ung_buou",
      name = "Bệnh viện Ung Bướu (Cơ sở 2)",
      address = "Đường 400, Long Thạnh Mỹ, Thành phố Thủ Đức, TP.HCM",
      location = GeoPoint(10.8497, 106.8248),
      phone = "028 3844 5217",
      workingHours = "Tiếp nhận máu giờ hành chính",
      availableBloodTypes = listOf("Tất cả các nhóm")
    )
  )
}

// Tìm bệnh viện trong danh sách giả bằng ID đã nhận
val hospital = fakeHospitals.find { it.id == hospitalId }

if (hospital != null) {
  _state.update { it.copy(isLoading = false, hospital = hospital) }
} else {
  _state.update {
    it.copy(
      isLoading = false,
      error = "Không tìm thấy bệnh viện với ID: $hospitalId"
    )
  }
}
}

```

```
    }  
  }  
}
```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/map/main/ui/map/MapContract.kt](#)

```
package com.example.feature_map_booking.domain.ui.map  
  
//  
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/map/MapContract.kt  
  
import com.trackasia.android.geometry.LatLng  
import com.example.feature_map_booking.domain.model.Hospital  
  
data class MapState(  
    val isLoading: Boolean = true,  
    // SỬA KIỂU DỮ LIỆU Ở ĐÂY  
    val lastKnownLocation: LatLng? = null,  
    val hospitals: List<Hospital> = emptyList(),  
    val error: String? = null  
)  
  
sealed class MapEvent {  
    object OnMapLoaded : MapEvent()  
    data class OnMapReady(val location: LatLng) : MapEvent()  
    data class OnMarkerClick(val hospitalId: String) : MapEvent()  
}
```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/map/main/ui/map/MapScreen.kt](#)

```
//  
feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/map/MapScreen.kt  
  
package com.example.feature_map_booking.domain.ui.map  
  
import android.util.Log  
import androidx.compose.foundation.layout.Box  
import androidx.compose.foundation.layout.fillMaxSize  
import androidx.compose.material3.CircularProgressIndicator  
import androidx.compose.runtime.*  
import androidx.compose.ui.Alignment
```



```

import androidx.compose.ui.Modifier
import androidx.hilt.navigation.compose.hiltViewModel

@Composable
fun MapScreen(
    viewModel: MapViewModel = hiltViewModel(),
    onNavigateToLocationDetail: (String) -> Unit
) {
    val state by viewModel.state.collectAsState()
    Log.d("MapDebug", "MapScreen recomposed. Hospitals count: ${state.hospitals.size}")

    Box(Modifier.fillMaxSize()) {
        // Gọi Composable bản đồ và truyền dữ liệu vào
        TrackAsiaMapComposable(
            hospitals = state.hospitals,
            onMarkerClick = onNavigateToLocationDetail,
            // onMapReady = { viewModel.onEvent(MapEvent.OnMapLoaded) }
        )

        // Vẫn hiển thị loading indicator từ ViewModel
        if (state.isLoading) {
            CircularProgressIndicator(modifier = Modifier.align(Alignment.Center))
        }
    }

    // Trigger ViewModel tải dữ liệu bệnh viện (dữ liệu giả)
    LaunchedEffect(Unit) {
        viewModel.onEvent(MapEvent.OnMapLoaded)
    }
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/map/MapViewModel.kt](#)

```

package com.example.feature_map_booking.domain.ui.map

//
feature_map_booking/src/main/java/com/smartblood/mapbooking/ui/map/MapViewModel.kt

import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.google.firebase.firestore.GeoPoint
import com.example.feature_map_booking.domain.model.Hospital

```

```

import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.delay
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch
import javax.inject.Inject

@HiltViewModel
class MapViewModel @Inject constructor(
    // private val getNearbyHospitalsUseCase: GetNearbyHospitalsUseCase // Sẽ dùng sau
) : ViewModel() {

    private val _state = MutableStateFlow(MapState())
    val state = _state.asStateFlow()

    fun onEvent(event: MapEvent) {
        when (event) {
            MapEvent.OnMapLoaded -> {
                fetchHospitals()
            }

            is MapEvent.OnMapReady -> TODO()
            is MapEvent.OnMarkerClick -> TODO()
        }
    }

    private fun fetchHospitals() {
        viewModelScope.launch {
            _state.update { it.copy(isLoading = true) }
            try {
                // Giả lập độ trễ mạng
                delay(2000)

                // Tạo danh sách bệnh viện giả
                val fakeHospitals = listOf(
                    Hospital(
                        id = "bv_cho_ray",
                        name = "Bệnh viện Chợ Rẫy",
                        address = "201B Nguyễn Chí Thanh, Phường 12, Quận 5, TP.HCM",
                        location = GeoPoint(10.7581, 106.6622),
                        phone = "028 3855 4137",
                        workingHours = "Tiếp nhận máu 24/7",
                    )
                )
            } catch (e: Exception) {
                // Xử lý lỗi
            }
        }
    }
}

```

```

        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "bv_truyen_mau_huyet_hoc",
        name = "Bệnh viện Truyền máu Huyết học",
        address = "118 Hồng Bàng, Phường 12, Quận 5, TP.HCM",
        location = GeoPoint(10.7597, 106.6608),
        phone = "028 3957 1342",
        workingHours = "7:00 - 16:30 (Thứ 2 - CN)",
        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "trung_tam_hien_mau_nhan_dao",
        name = "Trung tâm Hiến máu Nhân đạo TP.HCM",
        address = "106 Thiên Phước, Phường 9, Quận Tân Bình, TP.HCM",
        location = GeoPoint(10.7828, 106.6454),
        phone = "028 3868 5506",
        workingHours = "7:00 - 16:00 (Thứ 2 - Thứ 6)",
        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "bv_nhan_dan_gia_dinh",
        name = "Bệnh viện Nhân dân Gia Định",
        address = "1 Nơ Trang Long, Phường 7, Quận Bình Thạnh, TP.HCM",
        location = GeoPoint(10.8003, 106.6973),
        phone = "028 3841 2692",
        workingHours = "Tiếp nhận máu giờ hành chính",
        availableBloodTypes = listOf("A", "B", "O")
    ),
    Hospital(
        id = "bv_hung_vuong",
        name = "Bệnh viện Hùng Vương",
        address = "128 Hồng Bàng, Phường 12, Quận 5, TP.HCM",
        location = GeoPoint(10.7588, 106.6573),
        phone = "028 3855 8532",
        workingHours = "Tiếp nhận máu giờ hành chính",
        availableBloodTypes = listOf("A", "O")
    ),
    Hospital(
        id = "bv_nhi_dong_1",
        name = "Bệnh viện Nhi đồng 1",
        address = "341 Sư Vạn Hạnh, Phường 10, Quận 10, TP.HCM",
        location = GeoPoint(10.7711, 106.6699),

```

```

        phone = "028 3927 1119",
        workingHours = "Tiếp nhận máu 24/7 (ưu tiên khẩn cấp)",
        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "bv_thong_nhat",
        name = "Bệnh viện Thống Nhất",
        address = "1 Lý Thường Kiệt, Phường 7, Quận Tân Bình, TP.HCM",
        location = GeoPoint(10.7853, 106.6502),
        phone = "028 3864 2142",
        workingHours = "Tiếp nhận máu giờ hành chính",
        availableBloodTypes = listOf("B", "O")
    ),
    Hospital(
        id = "diem_hien_mau_quan_5",
        name = "Điểm hiến máu Chữ Thập Đỏ Quận 5",
        address = "201 Nguyễn Trãi, Phường 3, Quận 5, TP.HCM",
        location = GeoPoint(10.7610, 106.6804),
        phone = "(028) 38 382 646",
        workingHours = "7:30 - 16:00 (Thứ 2 - Thứ 7)",
        availableBloodTypes = listOf("Tất cả các nhóm")
    ),
    Hospital(
        id = "bv_tu_du",
        name = "Bệnh viện Từ Dũ",
        address = "284 Cống Quỳnh, Phường Phạm Ngũ Lão, Quận 1, TP.HCM",
        location = GeoPoint(10.7686, 106.6888),
        phone = "028 5404 2829",
        workingHours = "Tiếp nhận máu 24/7",
        availableBloodTypes = listOf("O", "A")
    ),
    Hospital(
        id = "bv_ung_buou",
        name = "Bệnh viện Ung Bướu (Cơ sở 2)",
        address = "Đường 400, Long Thạnh Mỹ, Thành phố Thủ Đức, TP.HCM",
        location = GeoPoint(10.8497, 106.8248),
        phone = "028 3844 5217",
        workingHours = "Tiếp nhận máu giờ hành chính",
        availableBloodTypes = listOf("Tất cả các nhóm")
    )
)
_state.update { it.copy(isLoading = false, hospitals = fakeHospitals) }
} catch (e: Exception) {

```

```

        _state.update { it.copy(isLoading = false, error = e.message) }
    }
}
}
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/map/TrackAsiaMapComposable.kt](#)

```

//
feature_map_booking/src/main/java/com/example/feature_map_booking/domain/ui/map
/TrackAsiaMapComposable.kt

```

```

package com.example.feature_map_booking.domain.ui.map

```

```

import com.smartblood.core.R
import android.Manifest
import android.annotation.SuppressLint
import android.graphics.BitmapFactory
import android.location.Location
import android.util.Log
import androidx.activity.compose.rememberLauncherForActivityResult
import androidx.activity.result.contract.ActivityResultContracts
import androidx.compose.foundation.layout.Box
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.foundation.layout.padding
import androidx.compose.foundation.shape.CircleShape
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.filled.MyLocation
import androidx.compose.material3.FloatingActionButton
import androidx.compose.material3.Icon
import androidx.compose.material3.MaterialTheme
import androidx.compose.runtime.Composable
import androidx.compose.runtime.DisposableEffect
import androidx.compose.runtime.LaunchedEffect
import androidx.compose.runtime.getValue
import androidx.compose.runtime.mutableStateOf
import androidx.compose.runtime.remember
import androidx.compose.runtime.setValue
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.platform.LocalContext
import androidx.compose.ui.platform.LocalLifecycleOwner
import androidx.compose.ui.unit.dp

```

```

import androidx.compose.ui.viewinterop.AndroidView
import androidx.lifecycle.Lifecycle
import androidx.lifecycle.LifecycleEventObserver
import com.example.feature_map_booking.domain.model.Hospital
import com.google.android.gms.location.LocationServices
import com.google.gson.JsonParser
import com.trackasia.android.camera.CameraUpdateFactory
import com.trackasia.android.geometry.LatLng
import com.trackasia.android.location.LocationComponent
import com.trackasia.android.location.LocationComponentActivationOptions
import com.trackasia.android.location.modes.CameraMode
import com.trackasia.android.location.modes.RenderMode
import com.trackasia.android.maps.MapView
import com.trackasia.android.maps.Style
import com.trackasia.android.plugins.annotation.SymbolManager
import com.trackasia.android.plugins.annotation.SymbolOptions

@SuppressLint("MissingPermission")
@Composable
fun TrackAsiaMapComposable(
    hospitals: List<Hospital>,
    onMarkerClick: (String) -> Unit
) {
    val context = LocalContext.current
    val mapView = rememberMapViewWithLifecycle()

    var trackasiaMap by remember {
        mutableStateOf<com.trackasia.android.maps.TrackAsiaMap?>(null) }
    var symbolManager by remember { mutableStateOf<SymbolManager?>(null) }
    var locationComponent by remember { mutableStateOf<LocationComponent?>(null) }
    var hasLocationPermission by remember { mutableStateOf(false) }

    val locationPermissionLauncher = rememberLauncherForActivityResult(
        contract = ActivityResultContracts.RequestPermission(),
        onResult = { isGranted ->
            hasLocationPermission = isGranted
        }
    )

    LaunchedEffect(Unit) {
        locationPermissionLauncher.launch(Manifest.permission.ACCESS_FINE_LOCATION)
    }
}

```

```

Box(Modifier.fillMaxSize()) {
    AndroidView(
        factory = {
            mapView.apply {
                onCreate(null)
                getMapAsync { map ->
                    trackasiaMap = map
                    // LƯU Ý: Thay "YOUR_API_KEY" bằng API key của bạn
                    val styleUrl = "https://maps.track-
asia.com/styles/v1/streets.json?key=52fedb6b306931761836057e5580a05be7"
                    map.setStyle(Style.Builder().fromUri(styleUrl))
                }
            }
        },
        modifier = Modifier.fillMaxSize()
    )

    // EFFECT 1: Xử lý vị trí ban đầu và zoom
    LaunchedEffect(trackasiaMap, hasLocationPermission) {
        val map = trackasiaMap ?: return@LaunchedEffect
        if (!hasLocationPermission) return@LaunchedEffect

        map.getStyle { style ->
            if (!style.isFullyLoaded) return@getStyle

            val component = map.locationComponent
            locationComponent = component
            if (!component.isLocationComponentActivated) {
                component.activateLocationComponent(
                    LocationComponentActivationOptions.builder(context, style).build()
                )
            }
            component.isLocationComponentEnabled = true
            component.renderMode = RenderMode.COMPASS
            component.cameraMode = CameraMode.NONE

            val fusedLocationClient =
                LocationServices.getFusedLocationProviderClient(context)
            fusedLocationClient.lastLocation.addOnSuccessListener { location: Location? ->
                location?.let {
                    map.animateCamera(
                        CameraUpdateFactory.newLatLngZoom(LatLng(it.latitude, it.longitude),
14.0),

```

```

        2000
    )
}
}.addOnFailureListener {
    Log.d("MapDebug", "Could not get last known location.")
}
}
}

// EFFECT 2: Xử lý vẽ marker
LaunchedEffect(trackasiaMap, hospitals) {
    val map = trackasiaMap ?: return@LaunchedEffect

    val CUSTOM_MARKER_ID = "my-marker-icon"
    val bitmap = BitmapFactory.decodeResource(context.resources,
R.drawable.ic_map_marker)

    map.getStyle { style ->
        if (!style.isFullyLoaded) return@getStyle

        style.addImage(CUSTOM_MARKER_ID, bitmap)

        if (symbolManager == null) {
            symbolManager = SymbolManager(mapView, map, style).apply {
                addClickListener { symbol ->
                    symbol.data?.asJsonObject?.get("hospital_id")?.asString?.let(onMarkerClick)
                    true
                }
            }
            symbolManager?.iconAllowOverlap = true
            symbolManager?.iconIgnorePlacement = true
        }

        symbolManager?.deleteAll()

        if (hospitals.isNotEmpty()) {
            val options: List<SymbolOptions> = hospitals.mapNotNull { hospital ->
                hospital.location?.let { geoPoint ->
                    SymbolOptions()
                        .withLatLng(LatLng(geoPoint.latitude, geoPoint.longitude))
                        .withIconImage(CUSTOM_MARKER_ID)
                        .withIconSize(0.1f)
                }
            }
        }
    }
}

```



```

        .withIconAnchor("bottom")
        .withData(JsonParser.parseString("""{"hospital_id": "${hospital.id}"}"""))
    }
}
// Dòng lệnh create bây giờ sẽ hoạt động chính xác
symbolManager?.create(options)
}
}
}

// Nút "Vị trí của tôi"
FloatingActionButton(
    onClick = {
        locationComponent?.lastKnownLocation?.let {
            trackasiaMap?.animateCamera(
                CameraUpdateFactory.newLatLngZoom(LatLng(it.latitude, it.longitude), 14.0),
                1000
            )
        }
    },
    modifier = Modifier
        .align(Alignment.BottomEnd)
        .padding(16.dp),
    shape = CircleShape,
    containerColor = MaterialTheme.colorScheme.surface,
    contentColor = MaterialTheme.colorScheme.primary
) {
    Icon(imageVector = Icons.Default.MyLocation, contentDescription = "Vị trí của tôi")
}
}
}

```

```

// Hàm hỗ trợ để quản lý vòng đời của MapView
@Composable
fun rememberMapViewWithLifecycle(): MapView {
    val context = LocalContext.current
    val mapView = remember { MapView(context) }

    val lifecycle = LocalLifecycleOwner.current.lifecycle
    DisposableEffect(lifecycle, mapView) {
        val lifecycleObserver = LifecycleEventObserver { _, event ->
            when (event) {
                Lifecycle.Event.ON_CREATE -> mapView.onCreate(null)
            }
        }
    }
}

```

```

        Lifecycle.Event.ON_START -> mapView.onStart()
        Lifecycle.Event.ON_RESUME -> mapView.onResume()
        Lifecycle.Event.ON_PAUSE -> mapView.onPause()
        Lifecycle.Event.ON_STOP -> mapView.onStop()
        Lifecycle.Event.ON_DESTROY -> mapView.onDestroy()
        else -> {}
    }
}
lifecycle.addObserver(lifecycleObserver)
onDispose {
    lifecycle.removeObserver(lifecycleObserver)
}
}
return mapView
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/usecase/BookAppointmentUseCase.kt](#)

```

package com.example.feature_map_booking.domain.usecase
//
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/usecase/BookAppointmentUseCase.kt

```

```

import com.example.feature_map_booking.domain.repository.MapBookingRepository
import java.util.Date
import javax.inject.Inject
import kotlin.Result

```

```

class BookAppointmentUseCase @Inject constructor(
    private val repository: MapBookingRepository
) {
    suspend operator fun invoke(hospitalId: String, dateTime: Date): Result<Unit> {
        if (hospitalId.isBlank()) {
            return Result.failure(IllegalArgumentException("Hospital ID is required."))
        }
        if (dateTime.before(Date())) {
            return Result.failure(IllegalArgumentException("Cannot book an appointment in the past."))
        }
        return repository.bookAppointment(hospitalId, dateTime)
    }
}

```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/usecase/GetAvailableSlotsUseCase.kt](#)

```
package com.example.feature_map_booking.domain.usecase
```

```
//  
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/usecase/Get  
AvailableSlotsUseCase.kt
```

```
import com.example.feature_map_booking.domain.model.TimeSlot  
import com.example.feature_map_booking.domain.repository.MapBookingRepository  
import java.util.Date  
import javax.inject.Inject  
import kotlin.Result
```

```
class GetAvailableSlotsUseCase @Inject constructor(  
    private val repository: MapBookingRepository  
) {  
    suspend operator fun invoke(hospitalId: String, date: Date): Result<List<TimeSlot>> {  
        return repository.getAvailableSlots(hospitalId, date)  
    }  
}
```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/usecase/GetHospitalDetailsUseCase.kt](#)

```
package com.example.feature_map_booking.domain.usecase
```

```
//  
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/usecase/Get  
HospitalDetailsUseCase.kt
```

```
import com.example.feature_map_booking.domain.model.Hospital  
import com.example.feature_map_booking.domain.repository.MapBookingRepository  
import javax.inject.Inject  
import kotlin.Result
```

```
class GetHospitalDetailsUseCase @Inject constructor(  
    private val repository: MapBookingRepository  
) {  
    suspend operator fun invoke(hospitalId: String): Result<Hospital> {  
        if (hospitalId.isBlank()) {  
            return Result.failure(IllegalArgumentException("Hospital ID cannot be empty."))  
        }  
        return repository.getHospitalDetails(hospitalId)  
    }  
}
```

```
}  
}
```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/usecase/GetMyAppointmentsUseCase.kt](#)

```
package com.example.feature_map_booking.domain.usecase
```

```
import com.example.feature_map_booking.domain.model.Appointment  
import com.example.feature_map_booking.domain.repository.MapBookingRepository  
import javax.inject.Inject  
import kotlin.Result
```

```
class GetMyAppointmentsUseCase @Inject constructor(  
    private val repository: MapBookingRepository  
) {  
    suspend operator fun invoke(): Result<List<Appointment>> {  
        return repository.getMyAppointments()  
    }  
}
```

[feature_map_booking/src/main/java/com/example/feature_map_booking/domain/usecase/GetNearbyHospitalsUseCase.kt](#)

```
package com.example.feature_map_booking.domain.usecase
```

```
//  
feature_map_booking/src/main/java/com/smartblood/mapbooking/domain/usecase/Get  
NearbyHospitalsUseCase.kt
```

```
import com.example.feature_map_booking.domain.model.Hospital  
import com.example.feature_map_booking.domain.repository.MapBookingRepository  
import javax.inject.Inject  
import kotlin.Result
```

```
class GetNearbyHospitalsUseCase @Inject constructor(  
    private val repository: MapBookingRepository  
) {  
    suspend operator fun invoke(lat: Double, lng: Double, radiusKm: Double = 10.0):  
    Result<List<Hospital>> {  
        return repository.getNearbyHospitals(lat, lng, radiusKm)  
    }  
}
```

feature_map_booking/src/test/java/com/example/feature_map_booking/ExampleUnitTest.kt

```
package com.example.feature_map_booking
```

```
import org.junit.Test
```

```
import org.junit.Assert.*
```

```
/**
 * Example local unit test, which will execute on the development machine (host).
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
    }
}
```

feature_profile/.gitignore

```
/build
```

feature_profile/build.gradle.kts

```
plugins {
    alias(libs.plugins.android.library)
    alias(libs.plugins.kotlin.android)
    alias(libs.plugins.kotlin.compose.compiler)
    alias(libs.plugins.hilt)
    alias(libs.plugins.ksp)
}

android {
    namespace = "com.example.feature_profile"
    compileSdk = 34

    defaultConfig {
        minSdk = 24

        testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"
        consumerProguardFiles("consumer-rules.pro")
    }
}
```

```

buildTypes {
    release {
        isMinifyEnabled = false
        proguardFiles(
            getDefaultProguardFile("proguard-android-optimize.txt"),
            "proguard-rules.pro"
        )
    }
}
compileOptions {
    sourceCompatibility = JavaVersion.VERSION_11
    targetCompatibility = JavaVersion.VERSION_11
}
kotlinOptions {
    jvmTarget = "11"
}
buildFeatures {
    compose = true
}
}

dependencies {
    implementation(project(":core"))
    implementation(libs.androidx.core.ktx)

    // THÊM VÀO: Jetpack Compose cho UI
    implementation(platform(libs.androidx.compose.bom)) // Bill of Materials
    implementation(libs.androidx.compose.ui)
    implementation(libs.androidx.compose.material3)
    implementation(libs.androidx.compose.ui.tooling.preview)
    debugImplementation(libs.androidx.compose.ui.tooling)

    // THÊM VÀO: Hilt - Dependency Injection
    implementation(libs.hilt.android)
    ksp(libs.hilt.compiler)
    implementation(libs.androidx.hilt.navigation.compose) // Để dùng hiltViewModel() trong
    Composable

    // THÊM VÀO: Firebase
    implementation(libs.firebase.auth.ktx)
    implementation(libs.firebase.firestore.ktx)

    // THÊM VÀO: Lifecycle cho ViewModel và Coroutine Scope

```

```

implementation(libs.androidx.lifecycle.runtime.ktx)
implementation(libs.androidx.lifecycle.viewmodel.compose) // Cho ViewModel

// THÊM VÀO: Coil để tải ảnh (dùng cho AsyncImage)
implementation(libs.coil.compose)

// Testing
testImplementation(libs.junit)
androidTestImplementation(libs.androidx.junit)
androidTestImplementation(libs.androidx.espresso.core)
// THÊM VÀO: Testing cho Compose
androidTestImplementation(platform(libs.androidx.compose.bom))
androidTestImplementation(libs.androidx.compose.ui.test.junit4)
implementation(project(":feature_map_booking"))

implementation(libs.trackasia.sdk)
implementation(libs.trackasia.annotation.plugin)
}

```

feature_profile/consumer-rules.pro

[File rỗng]

feature_profile/proguard-rules.pro

```

# Add project specific ProGuard rules here.
# You can control the set of applied configuration files using the
# proguardFiles setting in build.gradle.
#
# For more details, see
# http://developer.android.com/guide/developing/tools/proguard.html

# If your project uses WebView with JS, uncomment the following
# and specify the fully qualified class name to the JavaScript interface
# class:
#-keepclassmembers class fqcn.of.javascript.interface.for.webview {
#   public *;
#}

# Uncomment this to preserve the line number information for
# debugging stack traces.
#-keepattributes SourceFile,LineNumberTable

# If you keep the line number information, uncomment this to
# hide the original source file name.
#-renamesourcefileattribute SourceFile

```

feature_profile/src/androidTest/java/com/example/feature_profile/ExampleInstrumentedTest.kt

```
package com.example.feature_profile
```

```
import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4
```

```
import org.junit.Test
import org.junit.runner.RunWith
```

```
import org.junit.Assert.*
```

```
/**
 * Instrumented test, which will execute on an Android device.
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext = InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.feature_profile.test", appContext.packageName)
    }
}
```

feature_profile/src/main/AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

</manifest>
```

feature_profile/src/main/java/com/example/feature_profile/data/repository/ProfileRepositoryImpl.kt

```
//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\data\repository\ProfileRepositoryImpl.kt
package com.smartblood.profile.data.repository
```

```
import com.google.firebase.auth.FirebaseAuth
import com.google.firebase.firestore.FirebaseFirestore
import com.smartblood.profile.domain.model.DonationRecord
import com.smartblood.profile.domain.model.UserProfile
```



```

import com.smartblood.profile.domain.repository.ProfileRepository
import kotlinx.coroutines.tasks.await
import javax.inject.Inject
import kotlin.Result

class ProfileRepositoryImpl @Inject constructor(
    private val firestore: FirebaseFirestore,
    private val auth: FirebaseAuth
) : ProfileRepository {

    override suspend fun getUserProfile(): Result<UserProfile> {
        return try {
            val userId = auth.currentUser?.uid ?: return Result.failure(Exception("User not logged in"))
            val document = firestore.collection("users").document(userId).get().await()
            val userProfile = document.toObject(UserProfile::class.java)
            ?: return Result.failure(Exception("User profile not found"))
            Result.success(userProfile)
        } catch (e: Exception) {
            Result.failure(e)
        }
    }

    override suspend fun updateUserProfile(userProfile: UserProfile): Result<Unit> {
        return try {
            val userId = auth.currentUser?.uid ?: return Result.failure(Exception("User not logged in"))
            firestore.collection("users").document(userId).set(userProfile).await()
            Result.success(Unit)
        } catch (e: Exception) {
            Result.failure(e)
        }
    }

    override suspend fun getDonationHistory(): Result<List<DonationRecord>> {
        return try {
            val userId = auth.currentUser?.uid ?: return Result.failure(Exception("User not logged in"))
            val querySnapshot = firestore.collection("users").document(userId)
                .collection("donation_history")
                .orderBy("date", com.google.firebase.firestore.Query.Direction.DESENDING)
                .get().await()
        }
    }
}

```

```

        val history = querySnapshot.toObject(DonationRecord::class.java)
        Result.success(history)
    } catch (e: Exception) {
        Result.failure(e)
    }
}
}
}

```

feature_profile/src/main/java/com/example/feature_profile/di/ProfileModule.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\di\ProfileModule.kt
package com.smartblood.profile.di

```

```

import com.smartblood.profile.data.repository.ProfileRepositoryImpl
import com.smartblood.profile.domain.repository.ProfileRepository
import dagger.Binds
import dagger.Module
import dagger.hilt.InstallIn
import dagger.hilt.components.SingletonComponent
import javax.inject.Singleton

```

```

@Module
@InstallIn(SingletonComponent::class)
abstract class ProfileModule {

    @Binds
    @Singleton
    abstract fun bindProfileRepository(
        profileRepositoryImpl: ProfileRepositoryImpl
    ): ProfileRepository
}

```

feature_profile/src/main/java/com/example/feature_profile/domain/model/DonationRecord.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\domain\model\DonationRecord.kt
package com.smartblood.profile.domain.model

```

```

import java.util.Date

```

```

data class DonationRecord(
    val id: String = "",

```

```

        val hospitalName: String = "",
        val date: Date = Date(),
        val unitsDonated: Int = 1
    )

```

feature_profile/src/main/java/com/example/feature_profile/domain/model/UserProfile.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\domain\model\UserProfile.kt
package com.smartblood.profile.domain.model

```

```

import java.util.Date
data class UserProfile(
    val uid: String = "",
    val email: String = "",
    val fullName: String = "",
    val phoneNumber: String? = null,
    val bloodType: String? = null, // Ví dụ: "A+", "O-", ...
    val avatarUrl: String? = null, // <-- ĐÂY LÀ CHỖ CẦN THÊM HOẶC KIỂM TRA
    val dateOfBirth: Date? = null,
    val gender: String? = null, // "Male", "Female", "Other"
    val lastDonationDate: Date? = null
)

```

feature_profile/src/main/java/com/example/feature_profile/domain/repository/ProfileRepository.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\domain\repository\ProfileRepository.kt
package com.smartblood.profile.domain.repository

```

```

import com.smartblood.profile.domain.model.DonationRecord
import com.smartblood.profile.domain.model.UserProfile
import kotlin.Result

```

```

interface ProfileRepository {
    /**
     * Lấy thông tin hồ sơ của người dùng hiện tại.
     */
    suspend fun getUserProfile(): Result<UserProfile>

    /**
     * Cập nhật thông tin hồ sơ của người dùng.
     */
}

```

```

suspend fun updateUserProfile(userProfile: UserProfile): Result<Unit>

/**
 * Lấy lịch sử hiến máu của người dùng hiện tại.
 */
suspend fun getDonationHistory(): Result<List<DonationRecord>>
}

```

feature_profile/src/main/java/com/example/feature_profile/domain/usecase/ CalculateNextDonationDateUseCase.kt

```
package com.smartblood.profile.domain.usecase
```

```

import com.smartblood.profile.domain.model.UserProfile
import java.util.Calendar
import java.util.Date
import java.util.concurrent.TimeUnit
import javax.inject.Inject

```

```
class CalculateNextDonationDateUseCase @Inject constructor() {
```

```

    // Giả sử thời gian chờ giữa 2 lần hiến máu là 84 ngày
    private val WAITING_DAYS = 84

```

```

    operator fun invoke(userProfile: UserProfile?): String {
        val lastDonationDate = userProfile?.lastDonationDate ?: return "Bạn có thể hiến máu ngay!"

```

```

        val calendar = Calendar.getInstance()
        calendar.time = lastDonationDate
        calendar.add(Calendar.DAY_OF_YEAR, WAITING_DAYS)
        val nextAvailableDate = calendar.time

```

```
        val today = Date()
```

```

        if (nextAvailableDate.before(today) || nextAvailableDate == today) {
            return "Bạn có thể hiến máu ngay!"
        }

```

```

        val diffInMillis = nextAvailableDate.time - today.time
        val daysRemaining = TimeUnit.MILLISECONDS.toDays(diffInMillis)

```

```

        return if (daysRemaining > 1) {
            "Bạn có thể hiến máu sau $daysRemaining ngày nữa"

```

```

    } else {
        "Bạn có thể hiến máu vào ngày mai"
    }
}
}

```

feature_profile/src/main/java/com/example/feature_profile/domain/usecase/GetDonationHistoryUseCase.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\domain\usecase\GetDonationHistoryUseCase.kt
package com.smartblood.profile.domain.usecase

```

```

import com.smartblood.profile.domain.repository.ProfileRepository
import javax.inject.Inject

```

```

class GetDonationHistoryUseCase @Inject constructor(
    private val repository: ProfileRepository
) {
    suspend operator fun invoke() = repository.getDonationHistory()
}

```

feature_profile/src/main/java/com/example/feature_profile/domain/usecase/GetUserProfileUseCase.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\domain\usecase\GetUserProfileUseCase.kt
package com.example.feature_profile.domain.usecase

```

```

import com.smartblood.profile.domain.repository.ProfileRepository
import javax.inject.Inject

```

```

class GetUserProfileUseCase @Inject constructor(
    private val repository: ProfileRepository
) {
    suspend operator fun invoke() = repository.getUserProfile()
}

```

feature_profile/src/main/java/com/example/feature_profile/domain/usecase/UpdateUserProfileUseCase.kt

```

//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_p
rofile\domain\usecase\UpdateUserProfileUseCase.kt
package com.example.feature_profile.domain.usecase

```

```

import com.smartblood.profile.domain.model.UserProfile

```

```
import com.smartblood.profile.domain.repository.ProfileRepository
import javax.inject.Inject
```

```
class UpdateUserProfileUseCase @Inject constructor(
    private val repository: ProfileRepository
) {
    suspend operator fun invoke(userProfile: UserProfile) =
        repository.updateUserProfile(userProfile)
}
```

[feature_profile/src/main/java/com/example/feature_profile/ui/DonationHistoryScreen.kt](#)

```
package com.example.feature_profile.ui
```

```
//
feature_profile/src/main/java/com/smartblood/profile/ui/history/DonationHistoryScreen.kt
```

```
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.lazy.LazyColumn
import androidx.compose.foundation.lazy.items
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.automirrored.filled.ArrowBack
import androidx.compose.material3.*
import androidx.compose.runtime.Composable
import androidx.compose.runtime.collectAsState
import androidx.compose.runtime.getValue
import androidx.compose.runtime.remember
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.dp
import androidx.hilt.navigation.compose.hiltViewModel
import com.smartblood.profile.domain.model.DonationRecord
import java.text.SimpleDateFormat
import java.util.Locale
```

```
@OptIn(ExperimentalMaterial3Api::class)
@Composable
fun DonationHistoryScreen(
    viewModel: DonationHistoryViewModel = hiltViewModel(),
    onNavigateBack: () -> Unit
```

```

) {
    val state by viewModel.state.collectAsState()

    Scaffold(
        topBar = {
            TopAppBar(
                title = { Text("Lịch sử hiến máu") },
                navigationIcon = {
                    IconButton(onClick = onNavigateBack) {
                        Icon(Icons.AutoMirrored.Filled.ArrowBack, "Back")
                    }
                }
            )
        }
    ) { paddingValues ->
        Box(
            modifier = Modifier
                .fillMaxSize()
                .padding(paddingValues),
            contentAlignment = Alignment.Center
        ) {
            if (state.isLoading) {
                CircularProgressIndicator()
            } else if (state.error != null) {
                Text(text = "Lỗi: ${state.error}")
            } else if (state.history.isEmpty()) {
                Text("Bạn chưa có lịch sử hiến máu.")
            } else {
                LazyColumn(
                    modifier = Modifier.fillMaxSize(),
                    contentPadding = PaddingValues(16.dp),
                    verticalArrangement = Arrangement.spacedBy(12.dp)
                ) {
                    items(state.history) { record ->
                        DonationHistoryItem(record = record)
                    }
                }
            }
        }
    }
}

```

@Composable

```

fun DonationHistoryItem(record: DonationRecord) {
    val dateFormat = remember { SimpleDateFormat("dd/MM/yyyy", Locale.getDefault()) }
    Card(
        modifier = Modifier.fillMaxWidth(),
        elevation = CardDefaults.cardElevation(defaultElevation = 2.dp)
    ){
        Column(modifier = Modifier.padding(16.dp)) {
            Text(
                text = record.hospitalName,
                style = MaterialTheme.typography.titleMedium,
                fontWeight = FontWeight.Bold
            )
            Spacer(modifier = Modifier.height(8.dp))
            Text(
                text = "Ngày hiến: ${dateFormat.format(record.date)}",
                style = MaterialTheme.typography.bodyMedium
            )
            Text(
                text = "Số lượng: ${record.unitsDonated} đơn vị",
                style = MaterialTheme.typography.bodyMedium
            )
        }
    }
}

```

[feature_profile/src/main/java/com/example/feature_profile/ui/DonationHistoryViewModel.kt](#)

```
package com.example.feature_profile.ui
```

```
//
feature_profile/src/main/java/com/smartblood/profile/ui/history/DonationHistoryView
Model.kt
```

```

import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.smartblood.profile.domain.model.DonationRecord
import com.smartblood.profile.domain.usecase.GetDonationHistoryUseCase
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch

```



```
import javax.inject.Inject
```

```
data class DonationHistoryState(  
    val isLoading: Boolean = true,  
    val history: List<DonationRecord> = emptyList(),  
    val error: String? = null  
)
```

```
@HiltViewModel
```

```
class DonationHistoryViewModel @Inject constructor(  
    private val getDonationHistoryUseCase: GetDonationHistoryUseCase  
) : ViewModel() {
```

```
    private val _state = MutableStateFlow(DonationHistoryState())  
    val state = _state.asStateFlow()
```

```
    init {  
        loadHistory()  
    }
```

```
    private fun loadHistory() {  
        viewModelScope.launch {  
            _state.update { it.copy(isLoading = true) }  
            getDonationHistoryUseCase()  
                .onSuccess { historyList ->  
                    _state.update { it.copy(isLoading = false, history = historyList) }  
                }  
                .onFailure { error ->  
                    _state.update { it.copy(isLoading = false, error = error.message) }  
                }  
        }  
    }  
}
```

[feature_profile/src/main/java/com/example/feature_profile/ui/EditProfileScreen.kt](#)

```
package com.example.feature_profile.ui
```

```
// feature_profile/src/main/java/com/smartblood/profile/ui/edit/EditProfileScreen.kt
```

```
import androidx.compose.foundation.layout.*  
import androidx.compose.foundation.rememberScrollState
```

```

import androidx.compose.foundation.verticalScroll
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.automirrored.filled.ArrowBack
import androidx.compose.material3.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.unit.dp
import androidx.hilt.navigation.compose.hiltViewModel

```

```

@OptIn(ExperimentalMaterial3Api::class)
@Composable
fun EditProfileScreen(
    viewModel: EditProfileViewModel = hiltViewModel(),
    onNavigateBack: () -> Unit
) {
    val state by viewModel.state.collectAsState()

```

```

    // Tự động quay lại khi lưu thành công
    LaunchedEffect(state.saveSuccess) {
        if (state.saveSuccess) {
            onNavigateBack()
        }
    }
}

```

```

Scaffold(
    topBar = {
        TopAppBar(
            title = { Text("Chỉnh sửa hồ sơ") },
            navigationIcon = {
                IconButton(onClick = onNavigateBack) {
                    Icon(Icons.AutoMirrored.Filled.ArrowBack, "Back")
                }
            }
        )
    }
) { paddingValues ->
    Box(
        modifier = Modifier
            .fillMaxSize()
            .padding(paddingValues)
    ) {
        if (state.isLoading) {

```

```

        CircularProgressIndicator(modifier = Modifier.align(Alignment.Center))
    } else if (state.error != null) {
        Text(text = "Lỗi: ${state.error}", modifier = Modifier.align(Alignment.Center))
    } else {
        Column(
            modifier = Modifier
                .fillMaxSize()
                .padding(16.dp)
                .verticalScroll(rememberScrollState()),
            verticalArrangement = Arrangement.spacedBy(16.dp)
        ) {
            OutlinedTextField(
                value = state.fullName,
                onValueChange = {
                    viewModel.onEvent(EditProfileEvent.OnFullNameChanged(it)) },
                label = { Text("Họ và tên") },
                modifier = Modifier.fillMaxWidth()
            )

            OutlinedTextField(
                value = state.phoneNumber,
                onValueChange = {
                    viewModel.onEvent(EditProfileEvent.OnPhoneNumberChanged(it)) },
                label = { Text("Số điện thoại") },
                modifier = Modifier.fillMaxWidth()
            )

            OutlinedTextField(
                value = state.bloodType,
                onValueChange = {
                    viewModel.onEvent(EditProfileEvent.OnBloodTypeChanged(it)) },
                label = { Text("Nhóm máu (ví dụ: A+, O-)") },
                modifier = Modifier.fillMaxWidth()
            )

            Spacer(modifier = Modifier.weight(1f))

            Button(
                onClick = { viewModel.onEvent(EditProfileEvent.OnSaveClicked) },
                enabled = !state.isSaving,
                modifier = Modifier
                    .fillMaxWidth()
                    .height(50.dp)
            )
        }
    }
}

```



```

val error: String? = null,
val fullName: String = "",
val bloodType: String = "",
val phoneNumber: String = "",
val avatarUri: Uri? = null, // <-- THÊM: Lưu URI của ảnh được chọn
val isUploading: Boolean = false, // <-- THÊM: Trạng thái tải ảnh lên
// Thêm các trường khác bạn muốn chỉnh sửa ở đây
val originalProfile: UserProfile? = null
) {
    // Hàm này tạo ra đối tượng UserProfile mới từ state hiện tại của form
    fun toUserProfile(): UserProfile? {
        return originalProfile?.copy(
            fullName = fullName,
            bloodType = bloodType.ifBlank { null },
            phoneNumber = phoneNumber.ifBlank { null }
        )
    }
}

sealed class EditProfileEvent {
    data class OnFullNameChanged(val value: String) : EditProfileEvent()
    data class OnBloodTypeChanged(val value: String) : EditProfileEvent()
    data class OnPhoneNumberChanged(val value: String) : EditProfileEvent()
    data class OnAvatarChanged(val uri: Uri?) : EditProfileEvent() // <-- THÊM EVENT NÀY

    object OnSaveClicked : EditProfileEvent()
}

@HiltViewModel
class EditProfileViewModel @Inject constructor(
    private val getUserProfileUseCase: GetUserProfileUseCase,
    private val updateUserProfileUseCase: UpdateUserProfileUseCase,
    private val uploadImageUseCase: UploadImageUseCase
) : ViewModel() {

    private val _state = MutableStateFlow(EditProfileState())
    val state = _state.asStateFlow()

    init {
        loadInitialProfile()
    }
}

```

```

fun onEvent(event: EditProfileEvent) {
    when(event) {
        is EditProfileEvent.OnFullNameChanged -> _state.update { it.copy(fullName =
event.value) }
        is EditProfileEvent.OnBloodTypeChanged -> _state.update { it.copy(bloodType =
event.value) }
        is EditProfileEvent.OnPhoneNumberChanged -> _state.update { it.copy(phoneNumber
= event.value) }
        EditProfileEvent.OnSaveClicked -> saveProfile()
        is EditProfileEvent.OnAvatarChanged -> { // <-- XỬ LÝ KHI CHỌN ẢNH
            _state.update { it.copy(avatarUri = event.uri, error = null) }
        }
        EditProfileEvent.OnSaveClicked -> {
            saveProfile()
        }
    }
}

```

```

private fun loadInitialProfile() {
    viewModelScope.launch {
        _state.update { it.copy(isLoading = true) }
        getUserProfileUseCase()
            .onSuccess { profile ->
                _state.update {
                    it.copy(
                        isLoading = false,
                        originalProfile = profile,
                        fullName = profile.fullName,
                        bloodType = profile.bloodType ?: "",
                        phoneNumber = profile.phoneNumber ?: "",
                        avatarUri = profile.avatarUrl?.let { Uri.parse(it) }
                    )
                }
            }
        .onFailure { error ->
            _state.update { it.copy(isLoading = false, error = error.message) }
        }
    }
}

```

```

private fun saveProfile() {
    viewModelScope.launch {
        _state.update { it.copy(isSaving = true, error = null) } // Reset error khi save
    }
}

```

```

val currentAvatarUri = _state.value.avatarUri
var newAvatarUrl: String? = null

// 1. Upload ảnh nếu người dùng đã chọn ảnh mới
if (currentAvatarUri != null && currentAvatarUri !=
_state.value.originalProfile?.avatarUrl?.let { Uri.parse(it) } ) {
    _state.update { it.copy(isUploading = true) }
    val uploadResult = uploadImageUseCase(currentAvatarUri,
"avatars/${_state.value.originalProfile?.uid}")
    uploadResult.onSuccess { url ->
        newAvatarUrl = url
        _state.update { it.copy(isUploading = false) }
    }.onFailure { error ->
        _state.update { it.copy(isSaving = false, isUploading = false, error = "Lỗi tải ảnh:
${error.message}") }
        return@launch // Dừng lại nếu lỗi upload
    }
}

// 2. Tạo đối tượng UserProfile với thông tin mới (bao gồm URL ảnh nếu có)
val updatedProfile = _state.value.toUserProfile()?.copy(
    avatarUrl = newAvatarUrl ?: _state.value.originalProfile?.avatarUrl // Giữ nguyên
URL cũ nếu không upload ảnh mới
)

if (updatedProfile == null) {
    _state.update { it.copy(isSaving = false, error = "Không thể cập nhật hồ sơ.") }
    return@launch
}

// 3. Cập nhật thông tin hồ sơ lên Firestore
updateUserProfileUseCase(updatedProfile)
    .onSuccess {
        _state.update { it.copy(isSaving = false, saveSuccess = true) }
    }
    .onFailure { error ->
        _state.update { it.copy(isSaving = false, error = "Lỗi cập nhật hồ sơ:
${error.message}") }
    }
}
}
}
}

```

feature_profile/src/main/java/com/example/feature_profile/ui/ProfileContract.kt

```
//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_profile\ui\ProfileContract.kt
package com.smartblood.profile.ui
```

```
import com.example.feature_map_booking.domain.model.Appointment
import com.smartblood.profile.domain.model.UserProfile
```

```
// Định nghĩa MỚI và DUY NHẤT cho ProfileState
data class ProfileState(
    val isLoading: Boolean = true,
    val userProfile: UserProfile? = null,
    val upcomingAppointments: List<Appointment> = emptyList(),
    val todayAppointments: List<Appointment> = emptyList(),
    val pastAppointments: List<Appointment> = emptyList(),
    val error: String? = null
)
```

```
// Giữ lại ProfileEvent như cũ
sealed class ProfileEvent {
    object OnEditProfileClicked : ProfileEvent()
    object onViewDonationHistoryClicked : ProfileEvent()
}
```

feature_profile/src/main/java/com/example/feature_profile/ui/ProfileScreen.kt

```
//D:\SmartBloodDonationAndroid\feature_profile\src\main\java\com\example\feature_profile\ui\ProfileScreen.kt
package com.example.feature_profile.ui
```

```
import android.net.Uri
import androidx.activity.compose.rememberLauncherForActivityResult
import androidx.activity.result.contract.ActivityResultContracts
import androidx.compose.foundation.clickable
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.lazy.LazyColumn
import androidx.compose.foundation.lazy.items
import androidx.compose.foundation.rememberScrollState
import androidx.compose.foundation.shape.CircleShape
import androidx.compose.foundation.verticalScroll
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.automirrored.filled.ArrowBack
```



```

import androidx.compose.material3.*
import androidx.compose.runtime.Composable
import androidx.compose.runtime.collectAsState
import androidx.compose.runtime.getValue
import androidx.compose.runtime.remember
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.clip
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.layout.ContentScale
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.hilt.navigation.compose.hiltViewModel
import coil.compose.AsyncImage
import com.example.feature_map_booking.domain.model.Appointment
import java.text.SimpleDateFormat
import java.util.Locale

//@OptIn(ExperimentalMaterial3Api::class)
//@Composable
//fun EditProfileViewModel.EditProfileScreen(
//    onNavigateBack: () -> Unit
//) {
//    val state by state.collectAsState()
//    val scrollState = rememberScrollState() // Để cuộn nội dung
//
//    // --- LOGIC CHỌN ẢNH ---
//    val imagePickerLauncher = rememberLauncherForActivityResult(
//        contract = ActivityResultContracts.GetContent()
//    ) { uri: Uri? ->
//        onEvent(EditProfileEvent.OnAvatarChanged(uri)) // <-- GỬI EVENT KHI CHỌN
//        ẢNH
//    }
//
//    Scaffold(
//        topBar = {
//            TopAppBar(
//                title = { Text("Chỉnh sửa hồ sơ") },
//                navigationIcon = {
//                    IconButton(onClick = onNavigateBack) {
//                        Icon(Icons.AutoMirrored.Filled.ArrowBack, "Back")
//                    }
//                }
//            )
//        }
//    )

```

```

//      }
//    )
//  }
// ) { paddingValues ->
//   Box(
//     modifier = Modifier
//       .fillMaxSize()
//       .padding(paddingValues)
//   ) {
//     if (state.isLoading) {
//       CircularProgressIndicator(modifier = Modifier.align(Alignment.Center))
//     } else if (state.error != null) {
//       Text(
//         text = "Lỗi: ${state.error}",
//         modifier = Modifier.align(Alignment.Center),
//         color = MaterialTheme.colorScheme.error
//       )
//     } else {
//       Column(
//         modifier = Modifier
//           .fillMaxSize()
//           .padding(16.dp)
//           .verticalScroll(scrollState), // <-- THÊM SCROLL STATE
//         verticalArrangement = Arrangement.spacedBy(16.dp)
//       ) {
//         // --- PHẦN THÔNG TIN USER VÀ THAY ĐỔI ẢNH ---
//         state.userProfile?.let { profile -> // Sử dụng userProfile ban đầu để lấy URL
//           Column(
//             horizontalAlignment = Alignment.CenterHorizontally,
//             modifier = Modifier.fillMaxWidth()
//           ) {
//             Box(contentAlignment = Alignment.Center) {
//               // Hiển thị ảnh đang được chọn hoặc ảnh cũ
//               AsyncImage(
//                 model = state.avatarUri ?: profile.avatarUrl ?:
//                 "https://i.imgur.com/L5n5sH1.png", // Link ảnh mặc định
//                 contentDescription = "Ảnh đại diện",
//                 modifier = Modifier
//                   .size(120.dp)
//                   .clip(CircleShape)
//                   .clickable { imagePickerLauncher.launch("image/*") }, // Nhấn để
//                 chọn ảnh
//                 contentScale = ContentScale.Crop

```

```

//      )
//      // Hiển thị tiến trình tải ảnh nếu đang upload
//      if (state.isUploading) {
//          CircularProgressIndicator()
//      }
//  }
//  Spacer(Modifier.height(8.dp))
//  Text(
//      text = "Nhấn vào ảnh để thay đổi",
//      fontSize = 12.sp,
//      color = Color.Gray
//  )
//  }
//
//  Spacer(Modifier.height(8.dp))
//  Text(
//      text = profile.fullName,
//      style = MaterialTheme.typography.headlineSmall,
//      fontWeight = FontWeight.Bold
//  )
//  Text(
//      text = "Email: ${profile.email}",
//      style = MaterialTheme.typography.bodyLarge
//  )
//  OutlinedTextField(
//      value = state.bloodType, // Sử dụng state.bloodType để bind với text field
//      onChange = { onEvent(EditProfileEvent.OnBloodTypeChanged(it)) },
//      label = { Text("Nhóm máu (ví dụ: A+, O-)" ) },
//      modifier = Modifier.fillMaxWidth()
//  )
//  OutlinedTextField(
//      value = state.phoneNumber ?: "", // Sử dụng state.phoneNumber
//      onChange = {
onEvent(EditProfileEvent.OnPhoneNumberChanged(it)) },
//      label = { Text("Số điện thoại") },
//      modifier = Modifier.fillMaxWidth()
//  )
//
//  Spacer(modifier = Modifier.weight(1f)) // Đẩy nút Save xuống dưới
//
//  Button(
//      onClick = { onEvent(EditProfileEvent.OnSaveClicked) },
//      enabled = !state.isSaving, // Vô hiệu hóa khi đang lưu

```

```

//          modifier = Modifier
//          .fillMaxWidth()
//          .height(50.dp)
//      ) {
//          if (state.isSaving) {
//              CircularProgressIndicator(
//                  modifier = Modifier.size(24.dp),
//                  color = MaterialTheme.colorScheme.onPrimary,
//                  strokeWidth = 2.dp
//              )
//          } else {
//              Text("Lưu thay đổi")
//          }
//      }
//  }
// }
// }
// }

```

@OptIn(ExperimentalMaterial3Api::class)

@Composable

```

fun ProfileScreen(
    viewModel: ProfileViewModel = hiltViewModel(),
    onNavigateToEditProfile: () -> Unit,
    onNavigateToDonationHistory: () -> Unit
) {
    val state by viewModel.state.collectAsState()
    val scrollState = rememberScrollState()
    // --- LOGIC CHỌN ẢNH ---
    val imagePickerLauncher = rememberLauncherForActivityResult(
        contract = ActivityResultContracts.GetContent()
    ) { uri: Uri? ->
        uri?.let { viewModel.onAvatarChange(it) }
    }

    Scaffold(
        topBar = { TopAppBar(title = { Text("Hồ sơ của tôi") }) }
    ) { paddingValues ->
        if (state.isLoading) {
            Box(modifier.fillMaxSize(), contentAlignment = Alignment.Center) {
                CircularProgressIndicator()
            }
        }
    }
}

```

```

} else if (state.error != null) {
    Box(modifier.fillMaxSize(), contentAlignment = Alignment.Center) { Text("Lỗi:
    ${state.error}", color = MaterialTheme.colorScheme.error) }
} else {
    LazyColumn(
        modifier = Modifier.fillMaxSize().padding(paddingValues),
        contentPadding = PaddingValues(16.dp),
    ) {
        // --- PHẦN THÔNG TIN USER VÀ TẢI ẢNH ---
        // --- PHẦN THÔNG TIN USER VÀ HIỂN THỊ ẢNH ---
        item {
            // <<-- SỬA Ở ĐÂY: Truy cập state.userProfile
            state.userProfile?.let { profile ->
                Column(
                    horizontalAlignment = Alignment.CenterHorizontally,
                    modifier = Modifier.fillMaxWidth(),
                    verticalArrangement = Arrangement.spacedBy(8.dp)
                ) {
                    Box(contentAlignment = Alignment.Center) {
                        AsyncImage(
                            model = profile.avatarUrl ?: "https://i.imgur.com/L5n5sH1.png",
                            contentDescription = "Ảnh đại diện",
                            modifier = Modifier
                                .size(120.dp)
                                .clip(CircleShape)
                                .clickable { imagePickerLauncher.launch("image/*") },
                            contentScale = ContentScale.Crop
                        )
                        if(state.isUploading) {
                            CircularProgressIndicator()
                        }
                    }
                    Text(text = "Nhấn vào ảnh để thay đổi", fontSize = 12.sp, color = Color.Gray)
                    Spacer(modifier.height(8.dp))
                    // <<-- SỬA Ở ĐÂY: Truy cập profile.fullName và profile.email
                    Text(text = profile.fullName, style =
MaterialTheme.typography.headlineSmall, fontWeight = FontWeight.Bold)
                    Text(text = "Email: ${profile.email}", style =
MaterialTheme.typography.bodyLarge)
                    Text(text = "Nhóm máu: ${profile.bloodType ?: "Chưa cập nhật"}", style =
MaterialTheme.typography.bodyLarge)

                    Spacer(modifier.height(16.dp))

```

```

        Button(onClick = onNavigateToEditProfile, modifier =
Modifier.fillMaxWidth()) {
            Text("Chỉnh sửa thông tin")
        }
        OutlinedButton(onClick = onNavigateToDonationHistory, modifier =
Modifier.fillMaxWidth()) {
            Text("Xem lịch sử hiến máu")
        }
    }
}

item { Divider(modifier = Modifier.padding(vertical = 16.dp)) }

// --- PHẦN LỊCH HẸN ---
if (state.todayAppointments.isEmpty() && state.upcomingAppointments.isEmpty()
&& state.pastAppointments.isEmpty()) {
    item { Text("Bạn chưa có lịch hẹn nào.", modifier = Modifier.padding(top =
16.dp)) }
} else {
    if (state.todayAppointments.isNotEmpty()) {
        item { SectionTitle("Lịch hẹn hôm nay") }
        items(state.todayAppointments) { appointment ->
AppointmentCard(appointment) }
    }
    if (state.upcomingAppointments.isNotEmpty()) {
        item { SectionTitle("Lịch hẹn sắp tới") }
        items(state.upcomingAppointments) { appointment ->
AppointmentCard(appointment) }
    }
    if (state.pastAppointments.isNotEmpty()) {
        item { SectionTitle("Lịch hẹn đã qua") }
        items(state.pastAppointments) { appointment ->
AppointmentCard(appointment, isPast = true) }
    }
}
}
}

// Composable để hiển thị tiêu đề cho mỗi section
@Composable

```

```

fun SectionTitle(title: String) {
    Text(
        text = title,
        style = MaterialTheme.typography.titleLarge,
        fontWeight = FontWeight.Bold,
        modifier = Modifier.padding(top = 16.dp, bottom = 8.dp)
    )
}

// Composable để hiển thị thông tin của một lịch hẹn
@Composable
fun AppointmentCard(appointment: Appointment, isPast: Boolean = false) {
    val dateFormat = remember { SimpleDateFormat("dd/MM/yyyy 'lúc' HH:mm",
Locale.getDefault()) }
    Card(
        modifier = Modifier.fillMaxWidth(),
        colors = CardDefaults.cardColors(
            containerColor = if (isPast) MaterialTheme.colorScheme.surfaceVariant else
MaterialTheme.colorScheme.surface
        ),
        elevation = CardDefaults.cardElevation(defaultElevation = 2.dp)
    ) {
        Column(Modifier.padding(16.dp), verticalArrangement =
Arrangement.spacedBy(4.dp)) {
            Text(text = appointment.hospitalName, style =
MaterialTheme.typography.titleMedium, fontWeight = FontWeight.Bold)
            Text(text = appointment.hospitalAddress, style =
MaterialTheme.typography.bodyMedium, color = Color.Gray)
            Spacer(Modifier.height(8.dp))
            Text(text = "Thời gian: ${dateFormat.format(appointment.dateTime)}", style =
MaterialTheme.typography.bodyMedium)
            Text(text = "Trạng thái: ${appointment.status}", style =
MaterialTheme.typography.bodyMedium, color = if(appointment.status == "CONFIRMED")
Color(0xFF388E3C) else Color.Gray)
        }
    }
}

```

[feature_profile/src/main/java/com/example/feature_profile/ui/ProfileViewModel.kt](#)

```
package com.example.feature_profile.ui
```

```
import android.net.Uri
```

```

import android.util.Log
import androidx.lifecycle.ViewModel
import androidx.lifecycle.viewModelScope
import com.example.feature_map_booking.domain.model.Appointment
import com.example.feature_map_booking.domain.usecase.GetMyAppointmentsUseCase
import com.example.feature_profile.domain.usecase.GetUserProfileUseCase
import com.example.feature_profile.domain.usecase.UpdateUserProfileUseCase
import com.smartblood.core.storage.domain.usecase.UploadImageUseCase
import com.smartblood.profile.domain.model.UserProfile
import dagger.hilt.android.lifecycle.HiltViewModel
import kotlinx.coroutines.flow.MutableStateFlow
import kotlinx.coroutines.flow.asStateFlow
import kotlinx.coroutines.flow.update
import kotlinx.coroutines.launch
import java.util.Calendar
import javax.inject.Inject

```

```

@HiltViewModel

```

```

class ProfileViewModel @Inject constructor(
    private val getUserProfileUseCase: GetUserProfileUseCase,
    private val getMyAppointmentsUseCase: GetMyAppointmentsUseCase,
    private val updateUserProfileUseCase: UpdateUserProfileUseCase,
    private val uploadImageUseCase: UploadImageUseCase
) : ViewModel() {

```

```

    // <-- QUAN TRỌNG: Định nghĩa ProfileState ngay tại đây

```

```

    data class ProfileState(
        val isLoading: Boolean = true,
        val isUploading: Boolean = false,
        val userProfile: UserProfile? = null,
        val upcomingAppointments: List<Appointment> = emptyList(),
        val todayAppointments: List<Appointment> = emptyList(),
        val pastAppointments: List<Appointment> = emptyList(),
        val error: String? = null
    )

```

```

    private val _state = MutableStateFlow(ProfileState())
    val state = _state.asStateFlow()

```

```

    init {
        loadData()
    }

```



```

fun loadData() {
    viewModelScope.launch {
        _state.update { it.copy(isLoading = true, error = null) }

        val profileResult = getUserProfileUseCase()
        val appointmentsResult = getMyAppointmentsUseCase()

        var userProfile: UserProfile? = null
        var profileErrorMessage: String? = null

        profileResult.onSuccess { profile ->
            userProfile = profile
        }.onFailure { error ->
            profileErrorMessage = error.message
        }

        appointmentsResult.onSuccess { allAppointments ->
            val (upcoming, today, past) = classifyAppointments(allAppointments)
            _state.update {
                it.copy(
                    isLoading = false,
                    userProfile = userProfile, // <-- Cập nhật userProfile vào state
                    upcomingAppointments = upcoming,
                    todayAppointments = today,
                    pastAppointments = past,
                    error = profileErrorMessage
                )
            }
        }.onFailure { error ->
            _state.update {
                it.copy(
                    isLoading = false,
                    userProfile = userProfile,
                    error = profileErrorMessage ?: error.message
                )
            }
        }
    }
}

fun onAvatarChange(uri: Uri) {
    viewModelScope.launch {
        _state.update { it.copy(isUploading = true, error = null) }
    }
}

```

```

        val currentProfile = _state.value.userProfile ?: run {
            _state.update { it.copy(isUploading = false, error = "Không tìm thấy thông tin người dùng.") }
            return@launch
        }

        uploadImageUseCase(uri, "avatars/${currentProfile.uid}").onSuccess { downloadUrl -
>
            val updatedProfile = currentProfile.copy(avatarUrl = downloadUrl)
            updateUserProfileUseCase(updatedProfile).onSuccess {
                _state.update { it.copy(isUploading = false, userProfile = updatedProfile) }
            }.onFailure { error ->
                _state.update { it.copy(isUploading = false, error = "Lỗi cập nhật profile: ${error.message}") }
            }
            }.onFailure { error ->
                _state.update { it.copy(isUploading = false, error = "Lỗi tải ảnh lên: ${error.message}") }
            }
        }
    }
}

```

```

private fun classifyAppointments(appointments: List<Appointment>):
Triple<List<Appointment>, List<Appointment>, List<Appointment>> {
    val upcoming = mutableListOf<Appointment>()
    val today = mutableListOf<Appointment>()
    val past = mutableListOf<Appointment>()

    val startOfToday = Calendar.getInstance().apply {
        set(Calendar.HOUR_OF_DAY, 0); set(Calendar.MINUTE, 0); set(Calendar.SECOND, 0);
set(Calendar.MILLISECOND, 0)
    }.time

    val endOfToday = Calendar.getInstance().apply {
        set(Calendar.HOUR_OF_DAY, 23); set(Calendar.MINUTE, 59); set(Calendar.SECOND,
59); set(Calendar.MILLISECOND, 999)
    }.time

    for (appointment in appointments) {
        when {
            appointment.dateTime.after(endOfToday) -> upcoming.add(appointment)
            appointment.dateTime.before(startOfToday) -> past.add(appointment)
            else -> today.add(appointment)
        }
    }
}

```

```

    }
}

    upcoming.sortBy { it.dateTime }
    today.sortBy { it.dateTime }
    past.sortByDescending { it.dateTime }

    return Triple(upcoming, today, past)
}
}

```

[feature_profile/src/test/java/com/example/feature_profile/ExampleUnitTest.kt](#)

```

package com.example.feature_profile

import org.junit.Test

import org.junit.Assert.*

/**
 * Example local unit test, which will execute on the development machine (host).
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
    }
}

```

[gradle/libs.versions.toml](#)

```

# gradle/libs.versions.toml

[versions]
# Plugins
crashlyticsPlugin = "3.0.1"
androidGradlePlugin = "8.4.1"
kotlin = "2.0.0"
ksp = "2.0.0-1.0.21"
googleServices = "4.4.2"
mapsSecretsPlugin = "2.0.1" # <--- THÊM MỚI: Plugin cho Maps API Key
materialIconsExtended = "1.6.8"

```

```
trackasia = "2.0.2"
accompanist = "0.32.0"
secrets-gradle-plugin = "2.0.1"
```

SDKs

```
compileSdk = "34"
minSdk = "24"
targetSdk = "34"
```

THÊM CÁC THƯ VIỆN TRACKASIA

```
trackasia-sdk = { group = "com.track-asia", name = "trackasia-android-sdk", version.ref =
"trackasia" }
trackasia-annotation-plugin = { group = "com.track-asia", name = "trackasia-android-plugin-
annotation-v9", version.ref = "trackasia" }
```

Libraries

```
coreKtx = "1.13.1"
activityCompose = "1.9.0"
composeBom = "2024.06.00"
composeCompiler = "1.5.14"
hilt = "2.51.1"
lifecycle = "2.8.2"
room = "2.6.1"
firebaseBom = "33.1.1"
playServicesAuth = "21.2.0"
playServicesCoroutines = "1.8.1"
coroutines = "1.8.0"
retrofit = "2.9.0"
okhttp = "4.12.0"
navigation = "2.7.7"
hiltNavigation = "1.2.0"
coil = "2.6.0"
mapsCompose = "4.3.3"      # <--- THÊM MỚI: Thư viện Maps cho Compose
playServicesMaps = "18.2.0" # <--- THÊM MỚI: Thư viện Google Maps SDK
playServicesLocation = "21.3.0" # <--- THÊM MỚI: Thư viện Location Services
```

Testing

```
junit = "4.13.2"
androidxJunit = "1.1.5"
espressoCore = "3.5.1"
firebaseAuth = "23.0.0"
viewbinding = "7.4.2"
transportBackendCct = "3.1.9"
```

[libraries]

AndroidX Core

androidx-core-ktx = { group = "androidx.core", name = "core-ktx", version.ref = "coreKtx" }

androidx-lifecycle-runtime-ktx = { group = "androidx.lifecycle", name = "lifecycle-runtime-ktx", version.ref = "lifecycle" }

androidx-activity-compose = { group = "androidx.activity", name = "activity-compose", version.ref = "activityCompose" }

accompanist-navigation-animation = { group = "com.google.accompanist", name = "accompanist-navigation-animation", version.ref = "accompanist" }

Jetpack Compose

androidx-compose-bom = { group = "androidx.compose", name = "compose-bom", version.ref = "composeBom" }

androidx-compose-ui = { group = "androidx.compose.ui", name = "ui" }

androidx-compose-ui-graphics = { group = "androidx.compose.ui", name = "ui-graphics" }

androidx-compose-ui-tooling = { group = "androidx.compose.ui", name = "ui-tooling" }

androidx-compose-ui-tooling-preview = { group = "androidx.compose.ui", name = "ui-tooling-preview" }

androidx-compose-material3 = { group = "androidx.compose.material3", name = "material3" }

androidx-lifecycle-viewmodel-compose = { group = "androidx.lifecycle", name = "lifecycle-viewmodel-compose", version.ref = "lifecycle" }

androidx-lifecycle-runtime-compose = { group = "androidx.lifecycle", name = "lifecycle-runtime-compose", version.ref = "lifecycle" }

androidx-compose-material-icons-extended = { group = "androidx.compose.material", name = "material-icons-extended", version.ref = "materialIconsExtended" }

Image Loading - Coil

coil-compose = { module = "io.coil-kt:coil-compose", version.ref = "coil" }

Navigation

androidx-navigation-compose = { group = "androidx.navigation", name = "navigation-compose", version.ref = "navigation" }

androidx-hilt-navigation-compose = { group = "androidx.hilt", name = "hilt-navigation-compose", version.ref = "hiltNavigation" }

Dependency Injection - Hilt

hilt-android = { group = "com.google.dagger", name = "hilt-android", version.ref = "hilt" }

hilt-compiler = { group = "com.google.dagger", name = "hilt-compiler", version.ref = "hilt" }

Local Database - Room

```
androidx-room-runtime = { group = "androidx.room", name = "room-runtime", version.ref = "room" }  
androidx-room-ktx = { group = "androidx.room", name = "room-ktx", version.ref = "room" }  
androidx-room-compiler = { group = "androidx.room", name = "room-compiler", version.ref = "room" }
```

Remote - Firebase

```
firebase-bom = { group = "com.google.firebase", name = "firebase-bom", version.ref = "firebaseBom" }  
firebase-auth-ktx = { group = "com.google.firebase", name = "firebase-auth-ktx" }  
firebase-firestore-ktx = { group = "com.google.firebase", name = "firebase-firestore-ktx" }  
firebase-storage-ktx = { group = "com.google.firebase", name = "firebase-storage-ktx" }  
firebase-messaging-ktx = { group = "com.google.firebase", name = "firebase-messaging-ktx" }  
firebase-crashlytics-ktx = { group = "com.google.firebase", name = "firebase-crashlytics-ktx" }  
play-services-auth = { group = "com.google.android.gms", name = "play-services-auth",  
version.ref = "playServicesAuth" }
```

THÊM MỚI: Google Maps & Location

```
maps-compose = { group = "com.google.maps.android", name = "maps-compose",  
version.ref = "mapsCompose" }  
play-services-maps = { group = "com.google.android.gms", name = "play-services-maps",  
version.ref = "playServicesMaps" }  
play-services-location = { group = "com.google.android.gms", name = "play-services-location",  
version.ref = "playServicesLocation" }  
trackasia-sdk = { group = "io.github.track-asia", name = "android-sdk", version.ref = "trackasia" }  
trackasia-annotation-plugin = { group = "io.github.track-asia", name = "android-plugin-annotation-v9",  
version = "2.0.1" }
```

Asynchronous - Coroutines

```
kotlinx-coroutines-core = { group = "org.jetbrains.kotlinx", name = "kotlinx-coroutines-core",  
version.ref = "coroutines" }  
kotlinx-coroutines-android = { group = "org.jetbrains.kotlinx", name = "kotlinx-coroutines-android",  
version.ref = "coroutines" }  
kotlinx-coroutines-play-services = { group = "org.jetbrains.kotlinx", name = "kotlinx-coroutines-play-services",  
version.ref = "playServicesCoroutines" }
```

Networking - Retrofit & OkHttp

```
retrofit = { group = "com.squareup.retrofit2", name = "retrofit", version.ref = "retrofit" }
```

```
converter-gson = { group = "com.squareup.retrofit2", name = "converter-gson", version.ref = "retrofit" }
logging-interceptor = { group = "com.squareup.okhttp3", name = "logging-interceptor", version.ref = "okhttp" }
```

Testing

```
junit = { group = "junit", name = "junit", version.ref = "junit" }
androidx-junit = { group = "androidx.test.ext", name = "junit", version.ref = "androidxJunit" }
androidx-espresso-core = { group = "androidx.test.espresso", name = "espresso-core", version.ref = "espressoCore" }
androidx-compose-ui-test-junit4 = { group = "androidx.compose.ui", name = "ui-test-junit4" }
androidx-compose-ui-test-manifest = { group = "androidx.compose.ui", name = "ui-test-manifest" }
firebase-auth = { group = "com.google.firebase", name = "firebase-auth", version.ref = "firebaseAuth" }
androidx-viewbinding = { group = "androidx.databinding", name = "viewbinding", version.ref = "viewbinding" }
transport-backend-cct = { group = "com.google.android.datatransport", name = "transport-backend-cct", version.ref = "transportBackendCct" }
```

[plugins]

Khai báo các plugin của dự án

```
android-secrets-gradle-plugin = { id = "com.google.android.libraries.mapsplatform.secrets-gradle-plugin", version.ref = "secrets-gradle-plugin" }
android-application = { id = "com.android.application", version.ref = "androidGradlePlugin" }
android-library = { id = "com.android.library", version.ref = "androidGradlePlugin" }
kotlin-android = { id = "org.jetbrains.kotlin.android", version.ref = "kotlin" }
ksp = { id = "com.google.devtools.ksp", version.ref = "ksp" }
hilt = { id = "com.google.dagger.hilt.android", version.ref = "hilt" }
google-services = { id = "com.google.gms.google-services", version.ref = "googleServices" }
kotlin-compose-compiler = { id = "org.jetbrains.kotlin.plugin.compose", version.ref = "kotlin" }
firebase-crashlytics = { id = "com.google.firebase.crashlytics", version.ref = "crashlyticsPlugin" }
maps-secrets = { id = "com.google.android.libraries.mapsplatform.secrets-gradle-plugin", version.ref = "mapsSecretsPlugin" } # <--- THÊM MỚI
```

[bundles]

Nhóm các thư viện thường đi chung với nhau để gọi cho gọn

```
compose = ["androidx-compose-ui", "androidx-compose-ui-graphics", "androidx-compose-
```

```
ui-tooling-preview", "androidx-compose-material3"]  
room = ["androidx-room-runtime", "androidx-room-ktx"]  
coroutines = ["kotlinx-coroutines-core", "kotlinx-coroutines-android"]
```

gradle/wrapper/gradle-wrapper.properties

```
#Tue Oct 28 12:42:33 ICT 2025  
distributionBase=GRADLE_USER_HOME  
distributionPath=wrapper/dists  
distributionUrl=https\://services.gradle.org/distributions/gradle-8.13-bin.zip  
networkTimeout=10000  
validateDistributionUrl=true  
zipStoreBase=GRADLE_USER_HOME  
zipStorePath=wrapper/dists
```