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/
│       │   ├── MainApplication.kt   // Lớp Application, khởi tạo Hilt
│       │   ├── MainActivity.kt      // Activity duy nhất, host của NavHost
│       │   ├── di/               // DI cho module app
│       │   │   └── AppModule.kt
│       │   └── navigation/         // Quản lý điều hướng toàn ứng dụng
│       │       ├── AppNavHost.kt    // Cấu hình NavController và các graph
│       │       └── Screen.kt       // Định nghĩa các route
│       └── 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
│
├── 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
│       ├── di/
│       │   └── ProfileModule.kt
```

```
│   └── ui/
│       ├── navigation/
│       │   └── ProfileNavigation.kt
│       ├── profile_detail/
│       │   ├── ProfileScreen.kt
│       │   └── ProfileViewModel.kt
│       └── donation_history/
│           ├── 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 trỏ 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

}
```

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

#
# Copyright © 2015 the original authors.
#
# Licensed under the Apache License, Version 2.0 (the "License");
# you may not use this file except in compliance with the License.
# You may obtain a copy of the License at
#
#     https://www.apache.org/licenses/LICENSE-2.0
#
# Unless required by applicable law or agreed to in writing, software
# distributed under the License is distributed on an "AS IS" BASIS,
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
# See the License for the specific language governing permissions and
# limitations under the License.
#
# SPDX-License-Identifier: Apache-2.0
#

##############################################################################
##################
#
#   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 $arg in                #(
        -*)   false ;;            # don't mess with options #(
        /?*)  t=${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
```

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.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)
}

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
```

```
    }
}

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)
    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)
}
```

app/google-services.json

```
{
  "project_info": {
    "project_number": "731740765779",
    "project_id": "smart-blood-donation-2911",
```

```
    "storage_bucket": "smart-blood-donation-2911.firebasestorage.app"
  },
  "client": [
    {
      "client_info": {
        "mobilesdk_app_id": "1:731740765779:android:12b089b55854767d6150a6",
        "android_client_info": {
          "package_name": "com.smartblood.donation"
        }
      },
      "oauth_client": [],
      "api_key": [
        {
          "current_key": "AIzaSyCs-xI_jFHBqSwm9MbJ8TPwYMnXN6-krfA"
        }
      ],
      "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: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/java/com/example/smartblooddonationandroid/MainActivity.kt

```
//D:\SmartBloodDonationAndroid\app\src\main\java\com\example\smartblooddonatio
nandroid\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.Scaffold
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)
        enableEdgeToEdge()
        setContent {
            SmartBloodDonationAndroidTheme {
                AppNavHost()
//                Scaffold(modifier = Modifier.fillMaxSize()) { innerPadding ->
//                    Greeting(
//                        name = "Android",
//                        modifier = Modifier.padding(innerPadding)
//                    )
//                }
            }
        }
    }
}

@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

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

package com.smartblood.donation // Hoặc package của bạn

import android.app.Application
```

```
import dagger.hilt.android.HiltAndroidApp

@HiltAndroidApp
class MainApplication : Application()
```

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.foundation.layout.Box
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.material3.Text
import com.smartblood.auth.ui.register.RegisterScreen
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.navigation.NavGraph.Companion.findStartDestination
import androidx.navigation.compose.NavHost
import androidx.navigation.compose.composable
import androidx.navigation.compose.rememberNavController
import com.smartblood.auth.ui.login.LoginScreen
import com.smartblood.auth.ui.splash.SplashScreen

@Composable
fun AppNavHost() {
  val navController = rememberNavController()
  NavHost(
    navController = navController,
    startDestination = Screen.SPLASH
  ) {
    composable(Screen.SPLASH) {
      SplashScreen(
        navigateToLogin = {
          navController.navigate(Screen.LOGIN) {
            // Xóa SplashScreen khỏi back stack
            popUpTo(Screen.SPLASH) { inclusive = true }
          }
        },
        navigateToDashboard = {
          navController.navigate(Screen.DASHBOARD) {
            // Xóa SplashScreen khỏi back stack
            popUpTo(navController.graph.findStartDestination().id) {
```

```
                inclusive = true
            }
        }
    }
  )
}

composable(Screen.LOGIN) {
  LoginScreen(
    navigateToDashboard = {
      navController.navigate(Screen.DASHBOARD) {
        popUpTo(Screen.LOGIN) { inclusive = true }
      }
    },
    navigateToRegister = {
      navController.navigate(Screen.REGISTER)
    }
  )
}

composable(Screen.REGISTER) {
  RegisterScreen(
    navigateToDashboard = {
      navController.navigate(Screen.DASHBOARD) {
        // Xóa toàn bộ back stack xác thực
        popUpTo(navController.graph.findStartDestination().id) {
          inclusive = true
        }
      }
    },
    navigateBack = {
      navController.popBackStack() // Quay lại màn hình trước đó (LoginScreen)
    }
  )
}

composable(Screen.DASHBOARD) {
  Box(
    modifier = Modifier.fillMaxSize(),
    contentAlignment = Alignment.Center
  ) {
    Text(text = "DASHBOARD SCREEN")
  }      }
```

```
    }
}
```

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 LOGIN = "login"
    const val DASHBOARD = "dashboard"
    const val REGISTER = "register"
    // 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"
}

sealed class Screen(val route: String) {
    object Splash : Screen("splash_screen")
    // Các màn hình khác không thuộc feature nào có thể định nghĩa ở đây
}
```

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(0xFFEFB8C8)

val Purple40 = Color(0xFF6650a4)
```

```
val PurpleGrey40 = Color(0xFF625b71)
val Pink40 = Color(0xFF7D5260)
```

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" />
        <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>
   <!--
   <device-transfer>
```

```
    <include .../>
    <exclude .../>
  </device-transfer>
  -->
</data-extraction-rules>
```

app/src/test/java/com/example/smartblooddonationandroid/ExampleUnitTest.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)

}
```

```
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
    }

}

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)
}
```

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/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 isUserAuthenticated(): 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/CheckUserAuthentic
ationUseCase.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 // Giả sử bạn đã có LoginScreen
import com.smartblood.auth.ui.register.RegisterScreen // Giả sử bạn đã có RegisterScreen
```

```
// Định nghĩa một route 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
fun NavGraphBuilder.authGraph(navController: NavHostController) {
  // Sử dụng hàm navigation() để tạo một đồ thị con (nested graph)
  navigation(
    startDestination = AuthScreen.Login.route, // Màn hình bắt đầu của luồng này
    route = AUTH_GRAPH_ROUTE // Route của cả đồ thị con
  ) {
    // Định nghĩa các màn hình trong đồ thị con
    composable(route = AuthScreen.Login.route) {
      LoginScreen(
        onLoginSuccess = {
          // Sau khi đăng nhập thành công, điều hướng ra khỏi luồng auth
          // và xóa luồng auth khỏi back stack
          navController.navigate("main_graph_route") { // "main_graph_route" sẽ được
định nghĩa ở module :app
            popUpTo(AUTH_GRAPH_ROUTE) {
              inclusive = true
            }
          }
        },
        onNavigateToRegister = {
          navController.navigate(AuthScreen.Register.route)
        }
      )
    }

    composable(route = AuthScreen.Register.route) {
      RegisterScreen(
        onRegisterSuccess = {
          // Tương tự, sau khi đăng ký thành công, quay về màn hình chính
          navController.navigate("main_graph_route") {
            popUpTo(AUTH_GRAPH_ROUTE) {
              inclusive = true
            }
          }
        },
        onNavigateBackToLogin = {
          navController.popBackStack()
        }
```

```
        )
    }

    // 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,
          onValueChange = { viewModel.onEvent(RegisterEvent.OnFullNameChanged(it))
},
          label = { Text("Full Name") },
          modifier = Modifier.fillMaxWidth()
        )

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

        OutlinedTextField(
          value = state.password,
          onValueChange = { 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

```
// feature_auth/src/main/java/com/smartblood/auth/ui/splash/SplashScreen.kt
```

```
package com.smartblood.auth.ui.splash

import androidx.compose.foundation.background
import androidx.compose.foundation.layout.Box
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.material3.MaterialTheme
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.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.hilt.navigation.compose.hiltViewModel

@Composable
fun SplashScreen(
    viewModel: SplashViewModel = hiltViewModel(),
    navigateToLogin: () -> Unit,
    navigateToDashboard: () -> Unit
) {
    val isAuthenticated by viewModel.isAuthenticated.collectAsState()

    // LaunchedEffect sẽ được kích hoạt khi `isAuthenticated` thay đổi giá trị từ null
    LaunchedEffect(isAuthenticated) {
        when (isAuthenticated) {
            true -> navigateToDashboard()
            false -> navigateToLogin()
            null -> { /* Do nothing, wait for the check to complete */ }
        }
    }

    // Giao diện đơn giản của Splash Screen
    Box(
        modifier = Modifier
            .fillMaxSize()
            .background(MaterialTheme.colorScheme.primary),
        contentAlignment = Alignment.Center
    ) {
        Text(
            text = "Smart Blood Donation",
            style = MaterialTheme.typography.displayLarge,
            color = MaterialTheme.colorScheme.onPrimary
```

```
        )
    }
}
```

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.smartblood.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)

}

android {
    namespace = "com.example.feature_map_booking"
    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_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/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)

}

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"
    }
}

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_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/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/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
```