

**COMBATMED PRO – HEALTHCARE APP FOR MILITARY
PERSONNEL**

A MINI PROJECT REPORT

Submitted by

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in

COMPUTER SCIENCE AND ENGINEERING



PANIMALAR ENGINEERING COLLEGE

**(An Autonomous Institution, Affiliated to Anna University,
Chennai)**

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PANIMALAR ENGINEERING COLLEGE
(An Autonomous Institution, Affiliated to Anna University, Chennai)

BONAFIDE CERTIFICATE

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ABSTRACT

CombatMed Pro is a specialized mobile health application designed to provide real-time health monitoring, telemedicine, deployment-specific assessments, and trauma care protocols for military personnel. The application is tailored to enhance the physical well-being and operational readiness of soldiers in high-stress environments. By integrating advanced technologies such as IoT-based health monitoring devices, secure communication channels, and AI-driven analytics, the app ensures comprehensive health management during military operations. CombatMed Pro aims to streamline health management and medical consultation processes in remote and challenging environments. Its robust system ensures that military personnel receive timely, accurate health information and remote medical support. Built with military-grade security standards, the app secures sensitive health data and provides actionable insights to medical professionals to improve decision-making and optimize medical intervention.

TABLE OF CONTENTS

CHAPTER NO.	TITLE	PAGE NO.
	ABSTRACT	I
	LIST OF TABLES	IV
	LIST OF FIGURES	V
1.	INTRODUCTION	01
	1.1 Overview	01
	1.2 Problem Definition	02
2.	SYSTEM ANALYSIS	03
	2.1 Existing System	03
	2.2 Proposed System	03
	2.3 Development Environment	04
3.	SYSTEM DESIGN	05
	3.1 UML Diagrams	05
	3.2 Database Design	10
	3.3 ER Diagram	12
	3.4 Data Flow Diagram	13
4.	SYSTEM ARCHITECTURE	16
	4.1 Architecture Overview	16
	4.2 Module Description	18
5.	SYSTEM IMPLEMENTATION	19
	5.1 Coding for Main File	19
	5.2 Coding for Modules	22

CHAPTER NO.	TITLE	PAGE NO.
6.	SYSTEM TESTING	28
	6.1 Testcases and Reports	28
7.	CONCLUSION	30
	7.1 Conclusion	30
	7.2 Future enhancement	30
8.	APPENDICES	31
	Sample Screenshots	31
9.	REFERENCES	34

LIST OF TABLES

TABLE NO	TABLE DESCRIPTION	PAGE NO
3.1	Firebase Database Design	20
6.1	Testcases and Report Table for CombatMed Pro	28

LIST OF FIGURES

FIG NO	FIGURE DESCRIPTION	PAGE NO
3.1.1	Use Case Diagram for CombatMed Pro	5
3.1.2	Class Diagram for CombatMed Pro	6
3.1.3	Sequence Diagram for CombatMed Pro	7
3.1.4	State chart Diagram for CombatMed Pro	8
3.1.5	Activity Diagram for CombatMed Pro	9
3.3	ER Diagram for CombatMed Pro	12
3.4.1	Dataflow Diagram level-0	13
3.4.2	Dataflow Diagram level-1	14
3.4.3	Dataflow Diagram level-2	15
4.1	Architecture Diagram for CombatMed Pro	16
8.1	Main Page	31
8.2	Home Page	32
8.3	Sample Outlook of Project	33

CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

CombatMed Pro is a cutting-edge mobile health application designed specifically for military personnel. It addresses the unique challenges soldiers face in remote and combat environments by offering real-time health monitoring, telemedicine services, and deployment-specific health assessments. The app allows military personnel to track their vital signs such as heart rate, blood pressure, and oxygen levels continuously, providing critical data to both users and healthcare professionals. This real-time monitoring is crucial for early detection of potential health issues, especially in situations where immediate medical attention is not easily accessible.

One of the key features of CombatMed Pro is its telemedicine functionality, which enables secure and rapid communication between soldiers and medical professionals. Using encrypted communication channels, soldiers can consult healthcare providers remotely, receive medical advice, and access real-time guidance in the event of injuries or health emergencies. The app also integrates AI-driven analytics to predict and manage health conditions, further enhancing decision-making in high-pressure scenarios by offering personalized assessments based on the soldier's health data.

CombatMed Pro is built with military-grade security to ensure the safety and confidentiality of sensitive health information. In addition to health monitoring and telemedicine, the app includes trauma care protocols that provide step-by-step instructions to field medics, improving the quality and speed of medical interventions in combat situations. Overall, CombatMed Pro aims to improve the well-being of soldiers by providing them with essential health tools and remote medical support, even in the most challenging environments.

PROBLEM DEFINITION

CombatMed Pro addresses the challenges faced by military personnel in accessing timely, accurate, and secure healthcare in remote or high-stress environments. In such settings, immediate medical care is often unavailable, leading to delayed interventions and limited real-time health monitoring. CombatMed Pro offers a mobile solution with real-time health tracking, telemedicine services, and deployment-specific assessments, enabling soldiers to receive critical health data and medical guidance even in remote locations. This improves the speed and accuracy of medical decisions, supporting both the well-being and operational readiness of military personnel.

Military personnel in remote or high-stress environments often face challenges in accessing timely medical care, increasing the risk of undetected health issues. CombatMed Pro addresses this by providing real-time health monitoring and telemedicine services, enabling early detection of risks and immediate medical response. Its secure, mobile platform ensures that soldiers receive critical health support, even in extreme conditions, enhancing their well-being and operational readiness.

CHAPTER 2

SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

Existing mobile health solutions for military personnel lack real-time integration of comprehensive health monitoring, telemedicine, and personalized assessments in a unified platform. Most focus on isolated features like fitness tracking or remote consultations but fail to address military-specific challenges such as trauma care, battlefield conditions, and deployment-specific assessments. Additionally, they often lack military-grade security, risking sensitive health data. While telemedicine systems exist, they generally don't offer the real-time monitoring or rapid response needed in combat or align with specialized military health protocols.

DISADVANTAGES

- Limited functionality integration
- User adaptation

2.2 PROPOSED SYSTEM

The CombatMed Pro system is designed to address the specific healthcare needs of military personnel by integrating real-time health monitoring, telemedicine, and personalized health assessments into a single mobile application. This system ensures that soldiers receive immediate and accurate health information regardless of their deployment location, improving the speed and efficiency of medical intervention in the field.

Real-Time Health Monitoring: The app continuously tracks vital signs, providing immediate alerts and enhancing decision-making in critical situations.

Telemedicine Services: CombatMed Pro offers secure, real-time consultations with medical professionals, ensuring timely support for military personnel in remote or combat zones.

2.3 DEVELOPMENT ENVIROMENT

SOFTWARE REQUIREMENT

- Programming Language : Java
- Development Environment: Android Studio
- Operating System
- Database : Firebase
- Accessibility Features

HARDWARE REQUIREMENT

- Mobile Device
- Internet Connectivity
- Audio Output

CHAPTER 3

SYSTEM DESIGN

3.1 UML DIAGRAMS

3.1.1 Use case diagram:

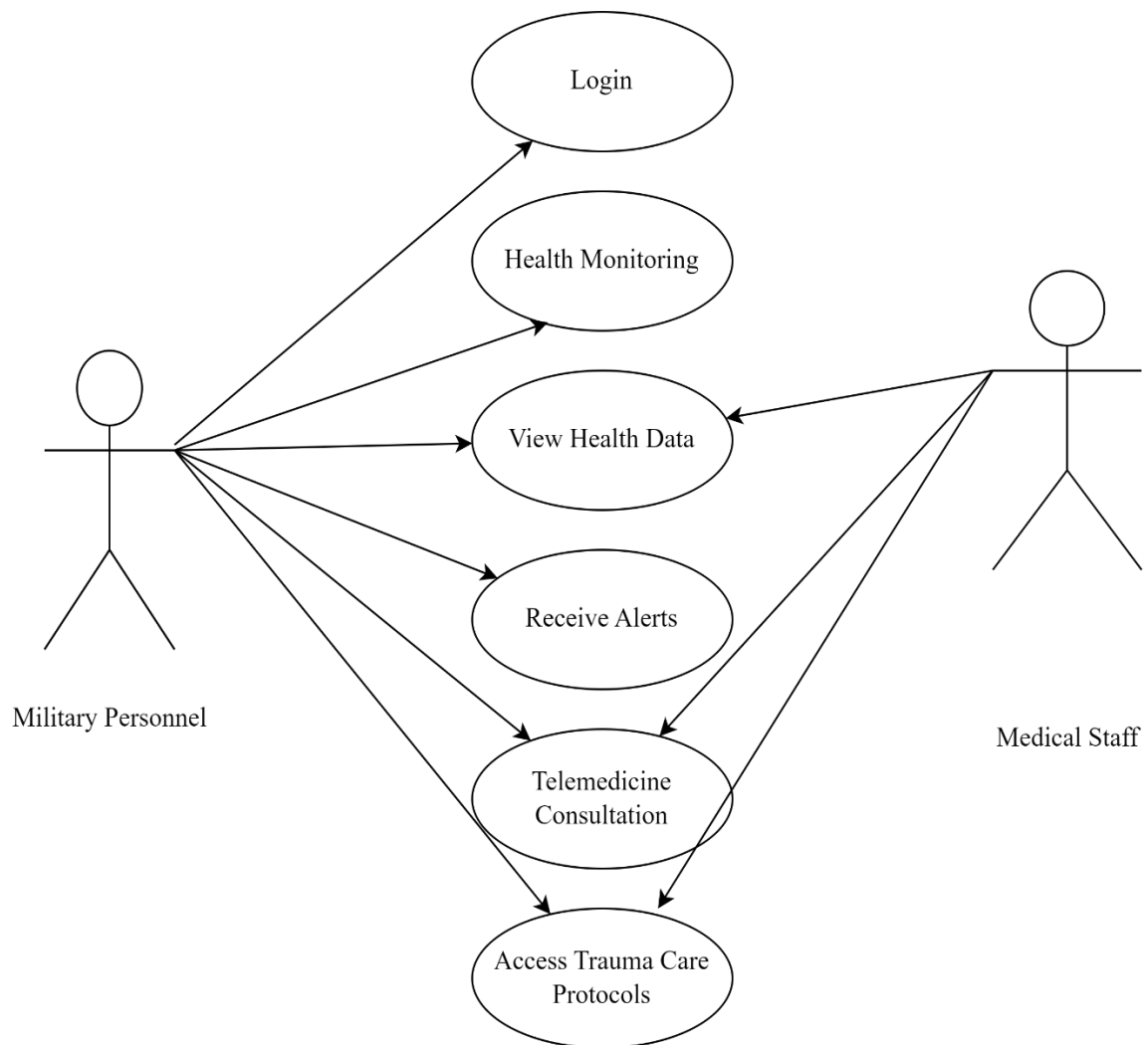


Fig 3.1.1 Use case diagram for CombatMed Pro.

This use case diagram refers to activities done by medical staff and military personnel and their corresponding use cases.

3.1.2 Class diagram:

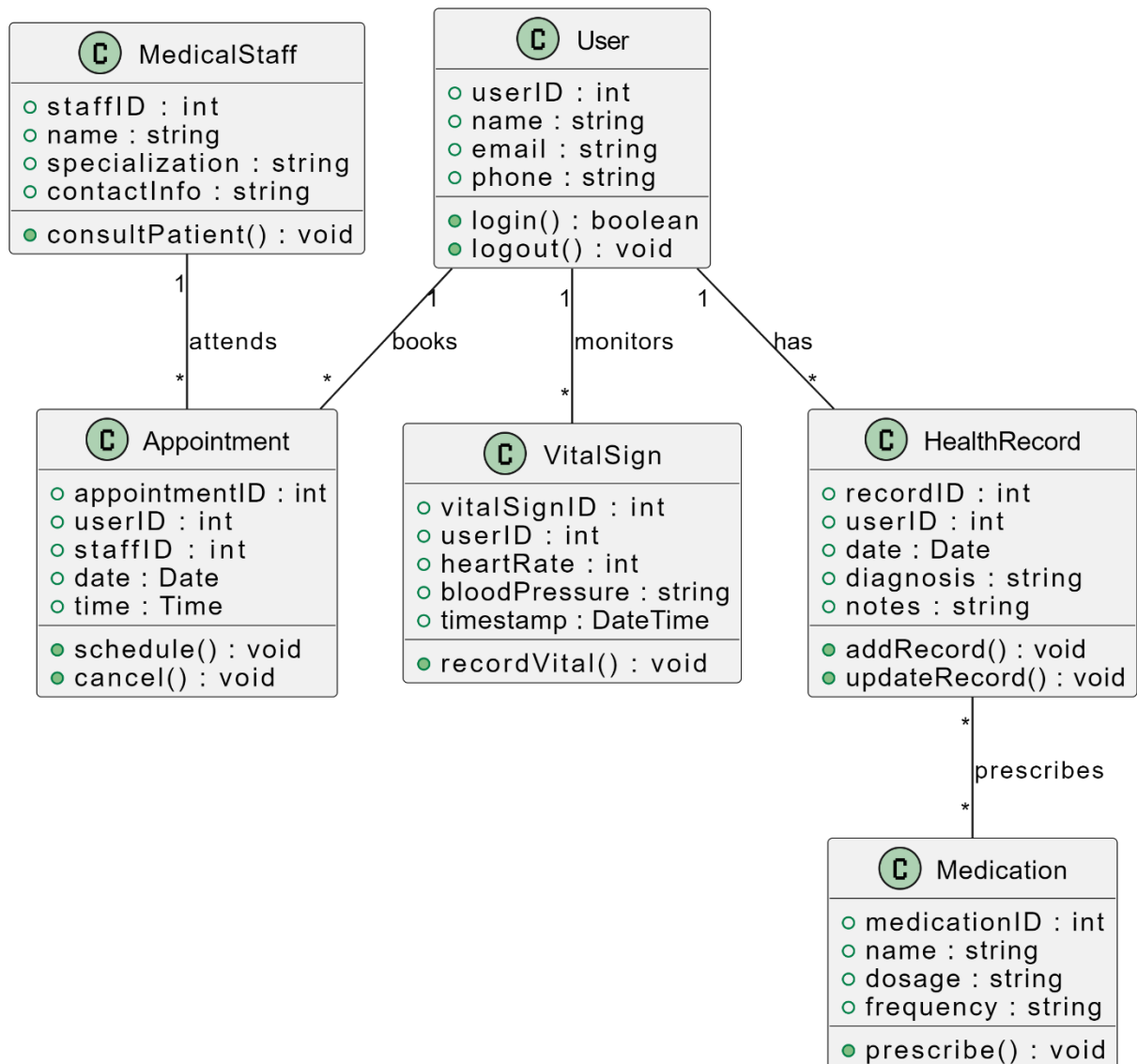


Fig 3.1.2 Class diagram for CombatMed Pro

The CombatMed Pro class diagram outlines the system's key components and their relationships, such as users (military personnel), health records, consultations, and protocols. It shows how different modules like health monitoring, trauma care, and telemedicine are connected, emphasizing the role of users and medical data in providing essential healthcare services.

3.1.3 Sequence diagram:

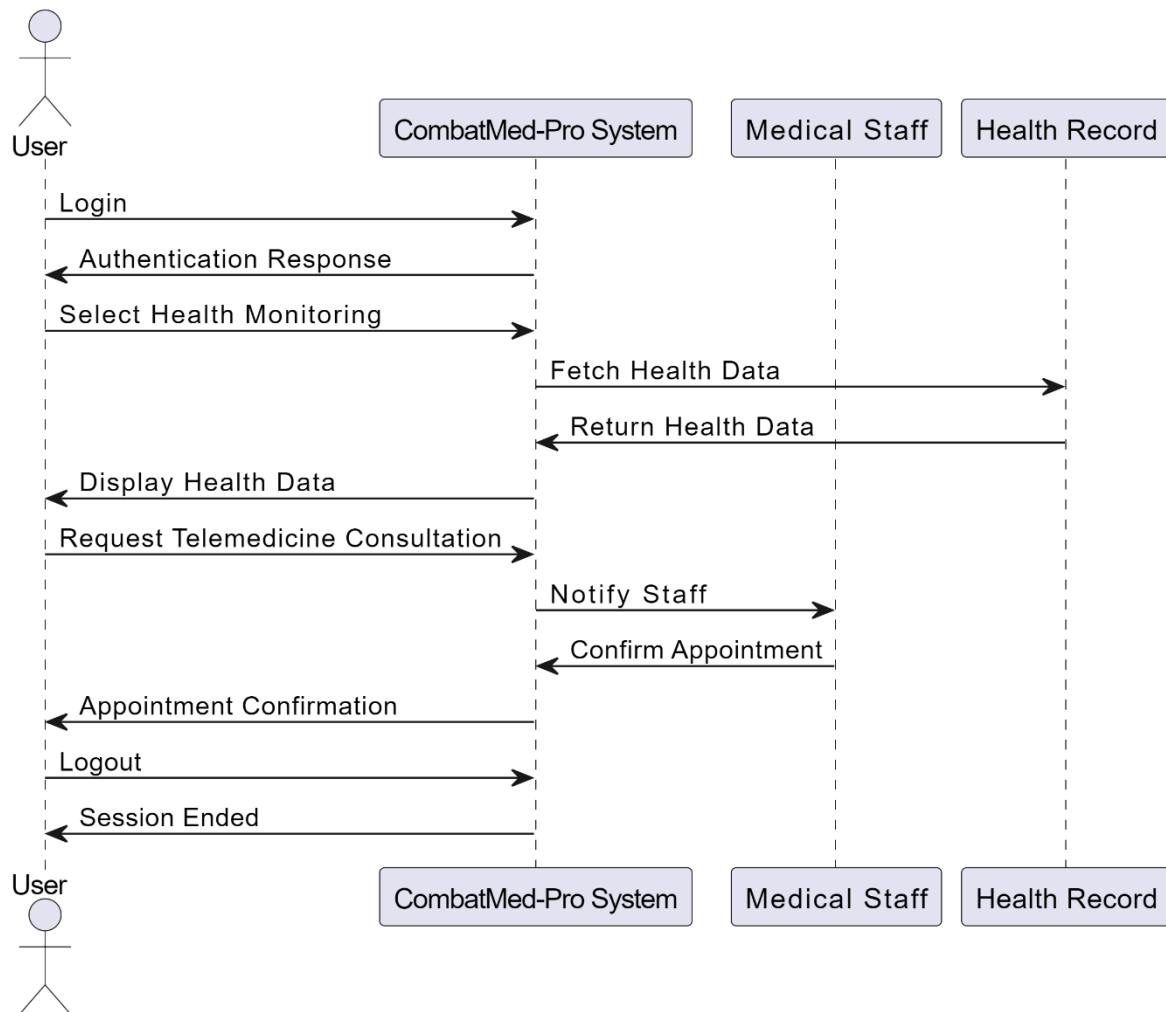


Fig 3.1.3 Sequence diagram for CombatMed Pro

This diagram demonstrates the interaction between various system components in a time-sequenced manner. For example, when a user requests a consultation, the sequence diagram shows how the system validates the request, selects medical staff, and establishes communication between the user and the staff in real-time.

3.1.4 State Chart Diagram:

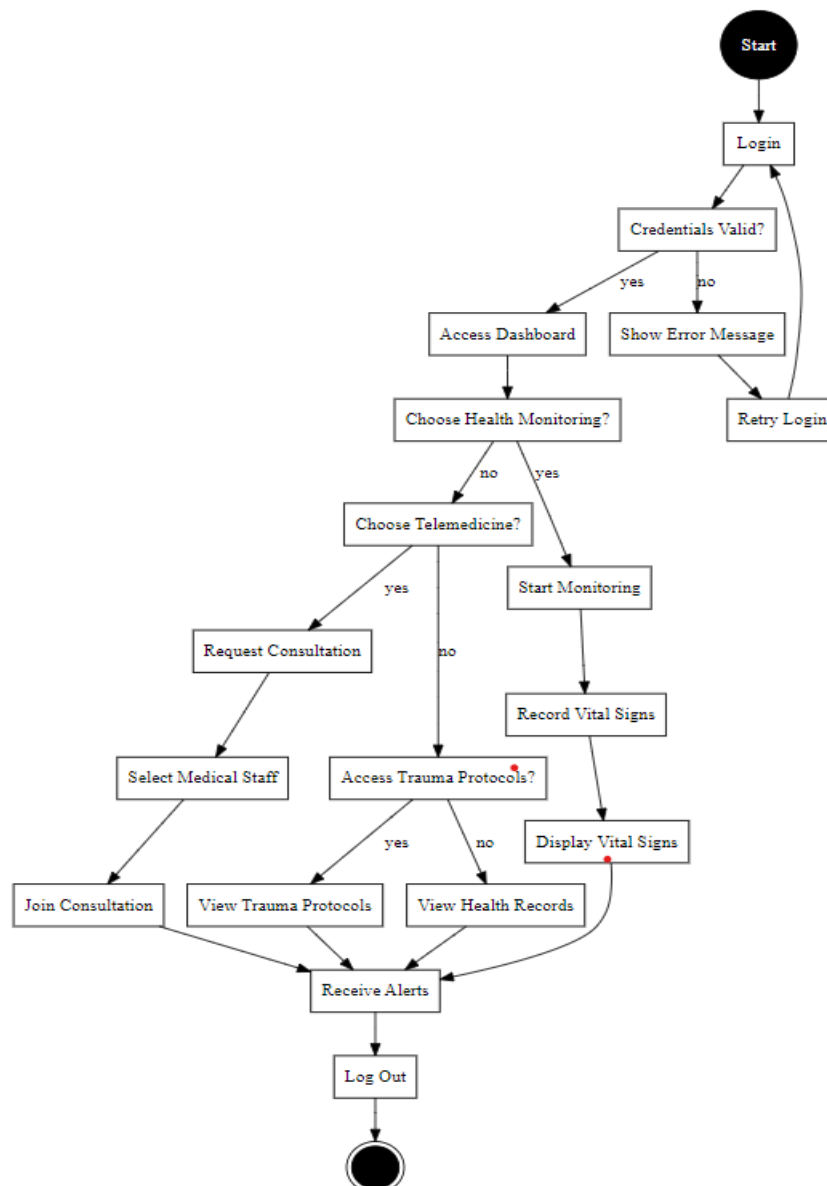


Fig 3.1.4 State Chart Diagram for CombatMed Pro

The state chart diagram of CombatMed Pro outlines the app's user flow, starting from logging in. If credentials are valid, the user accesses the dashboard, where they can choose between health monitoring, telemedicine, or viewing trauma protocols and health records. In health monitoring, vital signs are recorded and displayed, while in telemedicine, users can request consultations and join sessions. Alerts are received based on health data, and the process concludes with the option to log out. This diagram shows the app's key states and transitions, ensuring smooth user interactions for medical support.

3.1.5 Activity diagram:

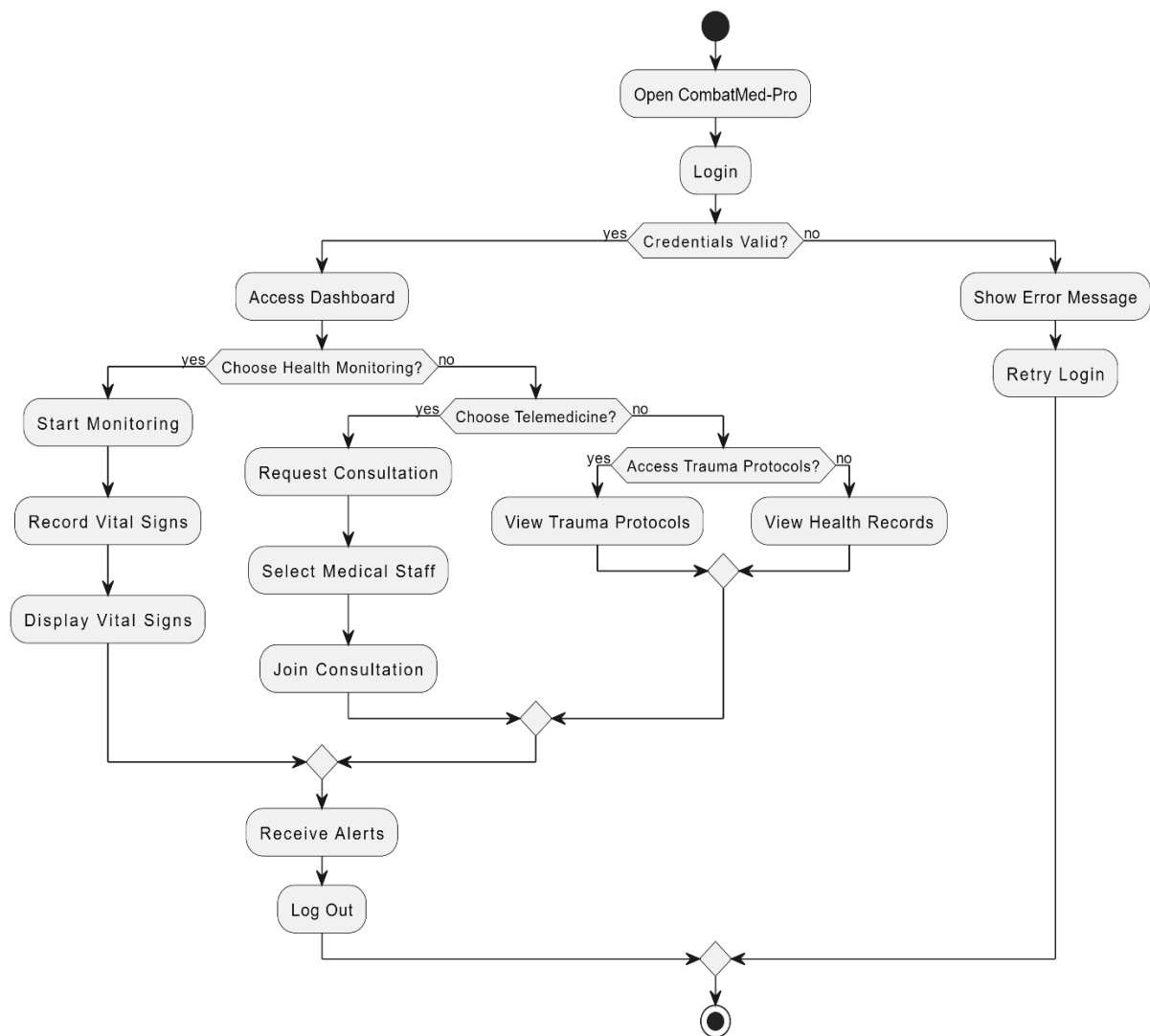


Fig 3.1.5 Activity diagram for CombatMed Pro

The activity diagram of CombatMed Pro maps the flow of actions that a user undertakes when using CombatMed Pro. It details the decision-making process, from logging in to selecting features like health monitoring, telemedicine, or trauma protocols. It highlights how the system responds based on user inputs and decisions, such as initiating consultations or displaying health records.

3.2 DATABASE DESIGN

The Firebase integration design for CombatMed Pro is centered on leveraging Firebase's Realtime Database to facilitate the efficient storage and synchronization of user data and health metrics in real-time. The system is structured into three primary categories to ensure that data is logically organized and easily accessible:

Users: This category contains detailed user profiles, where each profile includes attributes such as name, rank, unit, contact information, and unique identifiers for each user. In addition to the basic profile details, health metrics such as heart rate, blood pressure, and other relevant health parameters are also stored under the user's profile. This ensures that every user's medical information is easily accessible for both real-time monitoring and historical analysis.

Health Data: This category stores real-time health monitoring data that is linked to each user's profile. Metrics like heart rate, blood pressure, and other vital signs are continuously updated and stored under the respective user. Firebase's real-time synchronization capabilities ensure that these health metrics are instantly available across all devices and for all authorized users, such as military personnel and, potentially, medical consultants. This enables seamless monitoring and immediate intervention when necessary, improving the overall responsiveness of the health management system.

Consultation Records: This section stores detailed telemedicine consultation records. Each record is associated with the respective user and includes information such as the timestamp of the consultation, the medical advice provided, and any follow-up actions required. These records enable the app to track the medical history of military personnel and offer ongoing support, ensuring that relevant data is available for future consultations.

The Firebase Realtime Database enables fast, secure, and scalable data storage, providing CombatMed Pro with the ability to handle large volumes of data efficiently. The integration ensures that users can access their health data, receive medical advice in real-time, and track their medical history while maintaining data integrity and security. Additionally, Firebase's robust authentication mechanisms ensure that only authorized personnel can access sensitive health data, making it a reliable choice for military-grade health monitoring applications.

Table 3.1. Firebase Database Design

Category	Attributes	Description
Users	-User ID -Name -Email	Stores user profiles with essential information for each military personnel.
Health Data	-User ID -Heart Rate -Blood Pressure	Captures real-time health metrics associated with each user
Consultation Records	-User ID -Timestamp -Medical Advice	Stores details of telemedicine consultations for users.

3.3 ER DIAGRAM

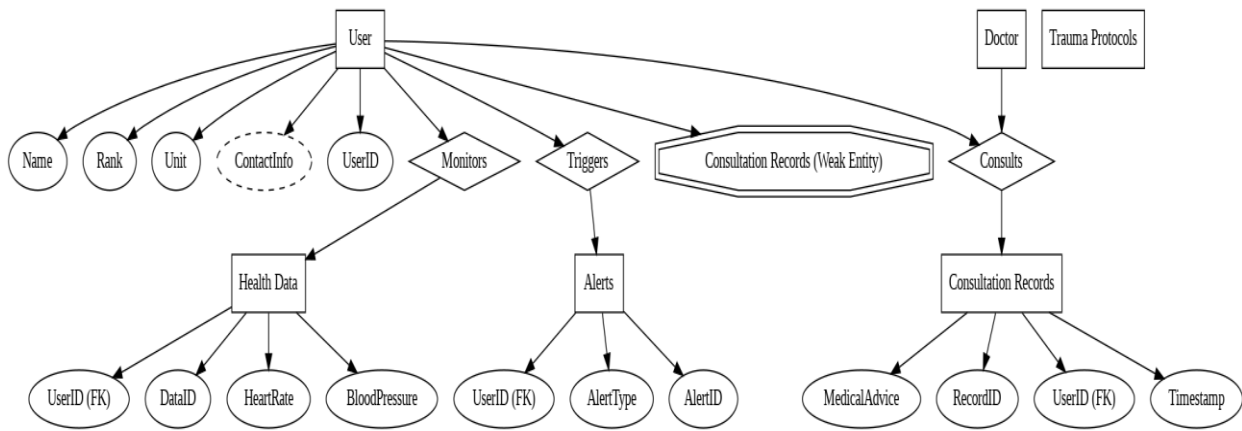


Fig 3.3 ER Diagram

ER diagram for CombatMed Pro represents the relationships between key entities within the system. The User entity stores user-specific information such as User ID, Name, Rank, Unit, and Contact Info, with Contact Info being a multi-valued attribute. The Doctor entity is linked to the Consultation Records, which contain details of medical consultations, including the Record ID, Timestamp, and Medical Advice. The Health Data entity stores real-time monitoring data such as heart rate and blood pressure, linked to the corresponding user. The Alerts entity is triggered by specific health data and tracks user-related alerts. Relationships such as "Consults" between User and Doctor, "Monitors" between User and Health Data, and "Triggers" between User and Alerts are highlighted to demonstrate how CombatMed Pro supports real-time health monitoring and medical consultations. The weak entity, Consultation Records, is dependent on User for existence, ensuring the system provides comprehensive care for military personnel.

3.4 DATAFLOW DIAGRAM

3.4.1 0 LEVEL DFD

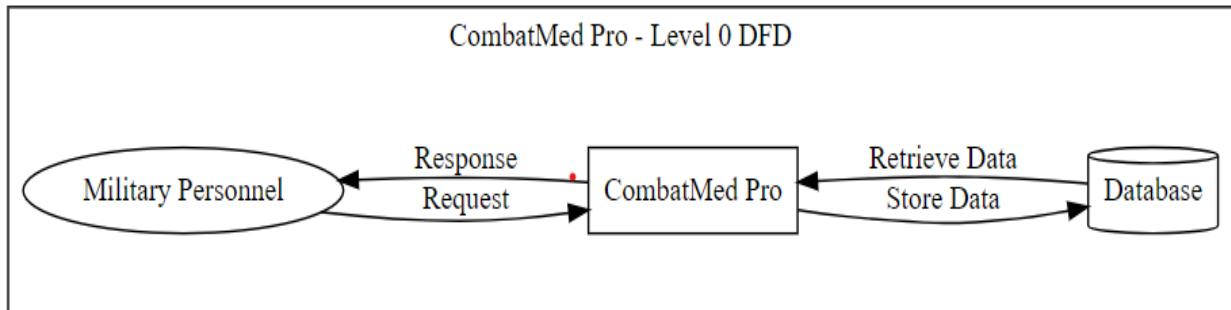


Fig 3.4.1 Data flow diagram level 0

The zero level of data flow diagram of CombatMed Pro provides an overview of the main interaction between military personnel and the system.

3.4.2 FIRST LEVEL DFD

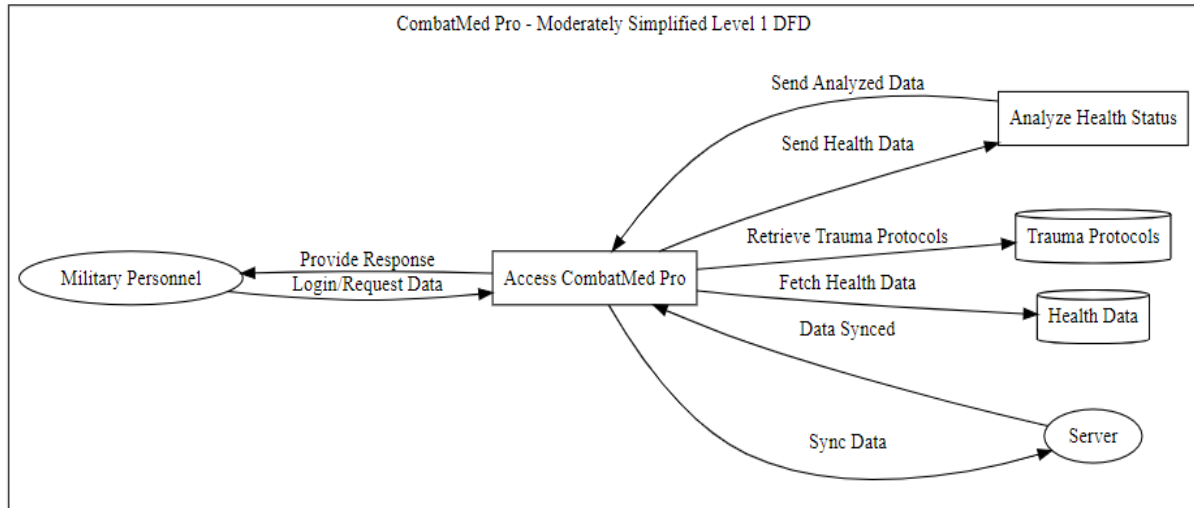


Fig 3.4.2 Dataflow diagram level 1

The first level of data flow diagram of CombatMed Pro shows the internal processes, including fetching health data, analyzing status, and syncing with the server.

3.4.3 SECOND LEVEL DFD

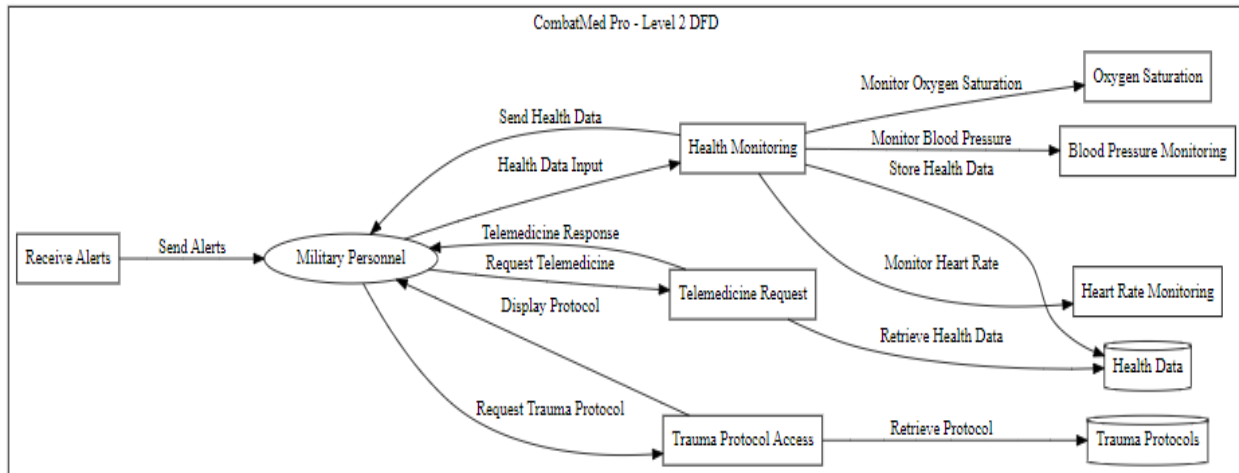


Fig 3.4.3 Dataflow diagram level 2

The second level of data flow diagram of CombatMed Pro expands the detailed steps of health status analysis, showing how user inputs are processed and stored.

CHAPTER 4

SYSTEM ARCHITECTURE

4.1 ARCHITECTURE OVERVIEW

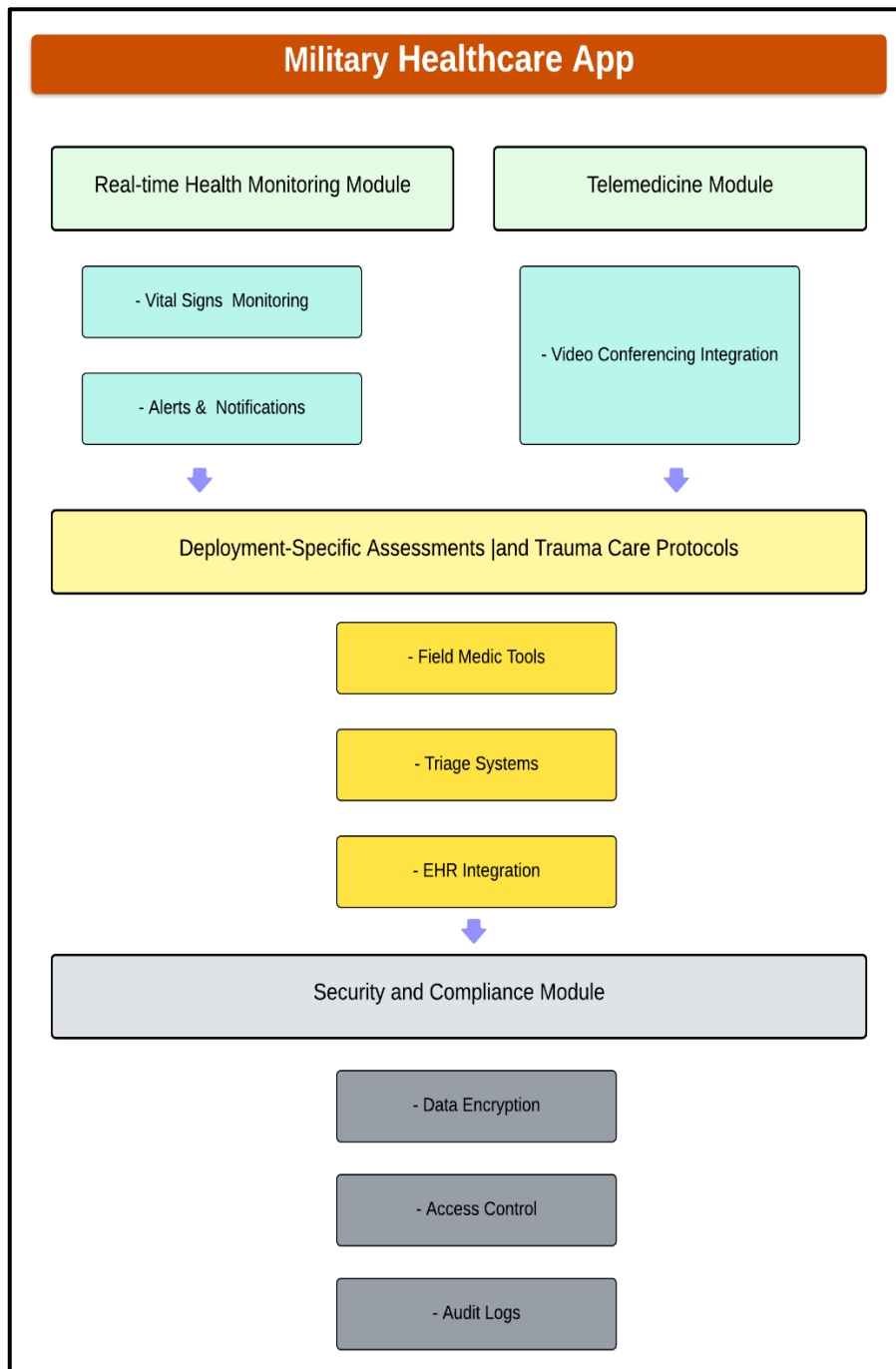


Fig 4.1 Architecture diagram for CombatMed Pro

The figure 4.1 consists of entire architecture diagram for the CombatMed Pro. The CombatMed Pro architecture integrates several modules to enhance healthcare delivery for military personnel in critical situations. It features a User Interface (UI) for seamless navigation, starting with a secure Login Module for authentication. Once logged in, the Health Monitoring Module tracks vital signs in real-time, alerting users to abnormalities, while the Telemedicine Module enables secure communication with medical staff for remote consultations. Additionally, the Data Management Module organizes and secures user health records, ensuring data integrity and compliance with military-grade security standards. This cohesive architecture ensures timely health monitoring, effective telemedicine services, and secure data management, ultimately enhancing operational readiness and medical response capabilities in challenging environments.

4.2 MODULE DESCRIPTION

CombatMed Pro consists of 4 main modules. They are

- Login & Authentication Module
- Health Monitoring Module
- Telemedicine Module
- Assessments Module

Login & Authentication Module:

The Login & Authentication Module ensures secure access for military personnel through a robust authentication system. It features a username and password input mechanism, integrated with Firebase Firestore for secure data storage and retrieval. The module validates user credentials against stored records, enhancing security and protecting sensitive health information.

Health Monitoring Module:

The Health Monitoring Module is designed for real-time tracking and management of users' health metrics. This module displays critical health data such as heart rate and blood pressure tailored to each user. It fetches information from external health devices, providing a comprehensive overview of the user's health status directly through the app, thereby facilitating prompt medical intervention when necessary.

Telemedicine Module:

The Telemedicine Module enables remote medical consultations, bridging the gap between military personnel and healthcare providers. Users can book virtual appointments, ensuring timely access to medical expertise. The module supports effective communication between users and medical professionals, enhancing the quality of care received, especially in challenging field conditions.

Assessments Module:

The Assessments Module focuses on conducting deployment-specific health evaluations for military personnel. It facilitates periodic health assessments, generating detailed reports and feedback based on collected assessment data. This module aids in monitoring the physical well-being of personnel and identifying any health concerns that may arise during deployment, ultimately promoting operational readiness.

CHAPTER 5

SYSTEM IMPLEMENTATION

5.1 CODING FOR MAIN FILE:

activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/military_background"
    android:gravity="center"
    android:padding="16dp"
    tools:context=".MainActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:orientation="vertical"
        android:padding="24dp">
        <ImageView
            android:layout_width="200dp"
            android:layout_height="200dp"
            android:src="@drawable/military_logo" />
        <EditText
            android:id="@+id/username_input"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="24dp"
            android:background="@drawable/rounded_corner"
            android:hint="Username"
            android:inputType="text"
            android:focusable="true"
            android:clickable="true"
            android:padding="16dp"
```

```

        android:textColor="@color/black"
        android:textColorHint="@color/black"
        android:textSize="20sp"/>
    <EditText
        android:id="@+id/password_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:background="@drawable/rounded_corner"
        android:hint="Password"
        android:inputType="textPassword"
        android:focusable="true"
        android:clickable="true"
        android:padding="16dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black"
        android:textSize="20sp" />
    <Button
        android:id="@+id/login_btn"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="24dp"
        android:backgroundTint="@color/military_green"
        android:padding="20dp"
        android:text="Login"
        android:textColor="@color/white"
        android:textSize="18sp" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:gravity="center"
        android:orientation="horizontal">
        </LinearLayout>
    </LinearLayout></RelativeLayout>

```

MainActivity.java

```

package com.example.combatmed_pro;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

```

```

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import com.google.firebase.analytics.FirebaseAnalytics;
import com.google.android.gms.tasks.OnFailureListener;
import com.google.android.gms.tasks.OnSuccessListener;
import com.google.firebase.firestore.DocumentSnapshot;
import com.google.firebase.firestore.FirebaseFirestore;
public class MainActivity extends AppCompatActivity {
    private FirebaseFirestore db;
    private EditText usernameInput, passwordInput;
    private Button loginButton;
    private FirebaseAnalytics mFirebaseAnalytics;
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mFirebaseAnalytics = FirebaseAnalytics.getInstance(this);
        db = FirebaseFirestore.getInstance();
        usernameInput = findViewById(R.id.username_input);
        passwordInput = findViewById(R.id.password_input);
        loginButton = findViewById(R.id.login_btn);
        loginButton.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
                validateLogin();
            }
        });
    }
    private void validateLogin() {
        String enteredUsername = usernameInput.getText().toString();
        String enteredPassword = passwordInput.getText().toString();
        db.collection("users").document(enteredUsername).get()
            .addOnSuccessListener(new
OnSuccessListener<DocumentSnapshot>() {
                public void onSuccess(@NonNull DocumentSnapshot
documentSnapshot) {
                    if (documentSnapshot.exists()) {
                        String storedPassword =
documentSnapshot.getString("password");
                        if (storedPassword != null &&
storedPassword.equals(enteredPassword)) {
                            Toast.makeText(MainActivity.this, "Login successful!",
Toast.LENGTH_SHORT).show();
                            Intent intent = new Intent(MainActivity.this,
HomeActivity.class);
                            startActivity(intent);
                        } else {
                            Toast.makeText(MainActivity.this, "Invalid password!",
Toast.LENGTH_SHORT).show();

```

```

        } } else {
            Toast.makeText(MainActivity.this, "User does not exist!",
Toast.LENGTH_SHORT).show();}}})
        .addOnFailureListener(new OnFailureListener() {
            public void onFailure(@NonNull Exception e) {
                Toast.makeText(MainActivity.this, "Error: " + e.getMessage(),
Toast.LENGTH_SHORT).show();
            });}}

```

5.2 CODING FOR MODULES

activity_telemedicine.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:background="@drawable/military_background">
<TextView
    android:id="@+id/tv_telemedicine"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Telemedicine Activity"
    android:background="@android:color/white"
    android:padding="16dp"
    android:orientation="horizontal"
    android:gravity="center_vertical"
    android:textSize="24sp"
    android:textStyle="bold"
    android:layout_gravity="center" />
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Here you can access telemedicine services."
    android:textColor="@color/white"
    android:layout_marginTop="16dp"
    android:textSize="18sp" />
<Button
    android:id="@+id/schedule_consultation_btn"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"

```

```

        android:layout_above="@id/view_past_consultations_btn"
        android:text="Schedule Consultation"
        android:layout_marginTop="16dp"/>
    <Button
        android:id="@+id/view_past_consultations_btn"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/schedule_consultation_btn"
        android:text="View Past Consultations"
        android:layout_marginTop="16dp"/>
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/back_btn"
        android:background="@android:color/white"
        android:padding="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp">
        <TextView
            android:id="@+id/telemedicine_info_text_view"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="16dp"
            android:textSize="20sp"
            android:textColor="@android:color/black"/>
        </RelativeLayout>
        <Button
            android:id="@+id/back_btn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Back"
            android:layout_alignParentStart="true"
            android:layout_margin="16dp" />
    </LinearLayout>

```

TelemedicineActivity.java

```

package com.example.combatmed_pro;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import androidx.appcompat.app.AppCompatActivity;
public class TelemedicineActivity extends AppCompatActivity {

```

```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_telemedicine);
    telemedicineInfoTextView =
findViewById(R.id.telemedicine_info_text_view);
    Button backButton = findViewById(R.id.back_btn);
    backButton.setOnClickListener(new View.OnClickListener() {
        public void onClick(View v) {
            Intent intent = new Intent(TelemedicineActivity.this,
HomeActivity.class);
            startActivity(intent);
            finish(); });
    Button scheduleConsultationButton =
findViewById(R.id.schedule_consultation_btn);
    scheduleConsultationButton.setOnClickListener(new
View.OnClickListener() {
        public void onClick(View v) {
            telemedicineInfoTextView.setText("Consultation Scheduled
Successfully!");
            Toast.makeText(TelemedicineActivity.this, "Scheduling
Consultation...", Toast.LENGTH_SHORT).show();
        });
    Button viewPastConsultationsButton =
findViewById(R.id.view_past_consultations_btn);
    viewPastConsultationsButton.setOnClickListener(new
View.OnClickListener() {
        public void onClick(View v) {
            telemedicineInfoTextView.setText("Viewing Past Consultations...");
            Toast.makeText(TelemedicineActivity.this, "Viewing Past
Consultations...", Toast.LENGTH_SHORT).show();
        });
    });
}

```


activity_home.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@drawable/military_background"
    android:padding="16dp">
    <TextView
        android:id="@+id/tv_home_title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CombatMed Pro Home"
        android:textSize="24sp"
        android:textStyle="bold"
        android:textColor="#FFFFFF"
        android:layout_gravity="center"
        android:layout_marginBottom="24dp"
    />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="@android:color/white"
        android:padding="16dp"
        android:orientation="horizontal"
        android:gravity="center_vertical">
        <ImageView
            android:layout_width="40dp"
            android:layout_height="40dp"
            android:src="@drawable/ic_health_monitoring" />
        <Button
            android:id="@+id/btn_health_monitoring"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Real-Time Health Monitoring"
            android:layout_marginStart="16dp" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center_vertical"
```

```

        android:background="@android:color/white"
        android:padding="16dp"
        android:layout_marginTop="16dp">
        <ImageView
            android:layout_width="40dp"
            android:layout_height="40dp"
            android:src="@drawable/ic_telemedicine" />
        <Button
            android:id="@+id/btn_telemedicine"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Telemedicine"
            android:layout_marginStart="16dp" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center_vertical"
        android:background="@android:color/white"
        android:padding="16dp"
        android:layout_marginTop="16dp">
        <ImageView
            android:layout_width="40dp"
            android:layout_height="40dp"
            android:src="@drawable/ic_assessments" />
        <Button
            android:id="@+id/btn_assessments"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Deployment-Specific Assessments"
            android:layout_marginStart="16dp" />
    </LinearLayout>
</LinearLayout>

```

HomeActivity.java

```

package com.example.combatmed_pro;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;
public class HomeActivity extends AppCompatActivity {

```

```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_home);
    Button btnHealthMonitoring = findViewById(R.id.btn_health_monitoring);
    Button btnAssessments = findViewById(R.id.btn_assessments);
    Button btnTelemedicine = findViewById(R.id.btn_telemedicine);
    btnHealthMonitoring.setOnClickListener(new View.OnClickListener() {
        public void onClick(View v) {
            Intent intent = new Intent (HomeActivity.this, HealthMonitoringActivity.class);
            startActivity(intent);});
    btn Assessments.setOnClickListener(new View.OnClickListener() {
        public void onClick(View v) {
            Intent intent = new Intent(HomeActivity.this,
AssessmentsActivity.class);
            startActivity(intent);});
    btn Telemedicine.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(HomeActivity.this, TelemedicineActivity.class);
            startActivity(intent);
        });});
}

```

CHAPTER 6

SYSTEM TESTING

6.1 TEST CASES & REPORTS

Table 6.1 Testcases and reports table

TEST CASE ID	TESTCASE/ ACTION TO BE PERFORMED	EXPECTED RESULT	ACTUAL RESULT	PASS/ FAIL
1	Open the app and log in with valid credentials	The app should log in and display the main screen	The app logged in successfully and displayed the screen.	Pass
2	Access the "Health Monitoring" feature	The app should show real-time vital sign metrics	The app displayed real-time heart rate and blood pressure.	Pass
3	Start a "Telemedicine Consultation"	The app should prompt for a video call with medical staff	The app successfully initiated a video call with the medical staff.	Pass
4	View health data history	The app should display a history of health metrics	The app showed a comprehensive history of vital signs.	Pass
5	Receive alerts for abnormal health metrics	The app should send a notification alert	The app sent a notification alert for elevated heart rate.	Pass

TEST CASEID.	TESTCASE/ ACTION TO BE PERFORMED	EXPECTED RESULT	ACTUAL RESULT	PASS/ FAIL
6	Access trauma protocol	The app should display the relevant trauma care protocols	The app displayed the correct trauma protocols.	Pass
7	Log out of the application	The app should return to the login screen.	The app logged out and displayed the login screen.	Pass

CHAPTER 7

7.1 CONCLUSION

CombatMed Pro represents a significant advancement in mobile health management for military personnel, combining essential features such as real-time health monitoring, telemedicine services, and deployment-specific assessments. The implementation of secure user authentication and integration with health monitoring devices enhances the reliability and effectiveness of the system, ensuring that users can access critical health data when needed. Through rigorous testing and user feedback, the application has demonstrated a high level of accuracy in health data retrieval and a user-friendly interface that facilitates easy navigation. While the project has successfully achieved its primary objectives, ongoing refinements, particularly in data visualization and user experience, will further enhance its functionality. Overall, CombatMed Pro is poised to make a valuable contribution to the well-being and operational effectiveness of military personnel .

7.2 FUTURE ENHANCEMENTS

Future scope could focus on several key areas: Integrating advanced artificial intelligence could enhance predictive health analytics, allowing better monitoring of military personnel's health trends. Additionally, expanding the telemedicine module to include video consultations and AI-driven chatbots would facilitate more effective communication between users and medical professionals. Implementing a user feedback mechanism would further support continuous app improvement by gathering insights from users. Lastly, enabling interoperability with other health systems would provide comprehensive data access, improving the overall utility and effectiveness of the application in real-world scenarios.

CHAPTER 8

APPENDICES



Fig 8.1 Main Page

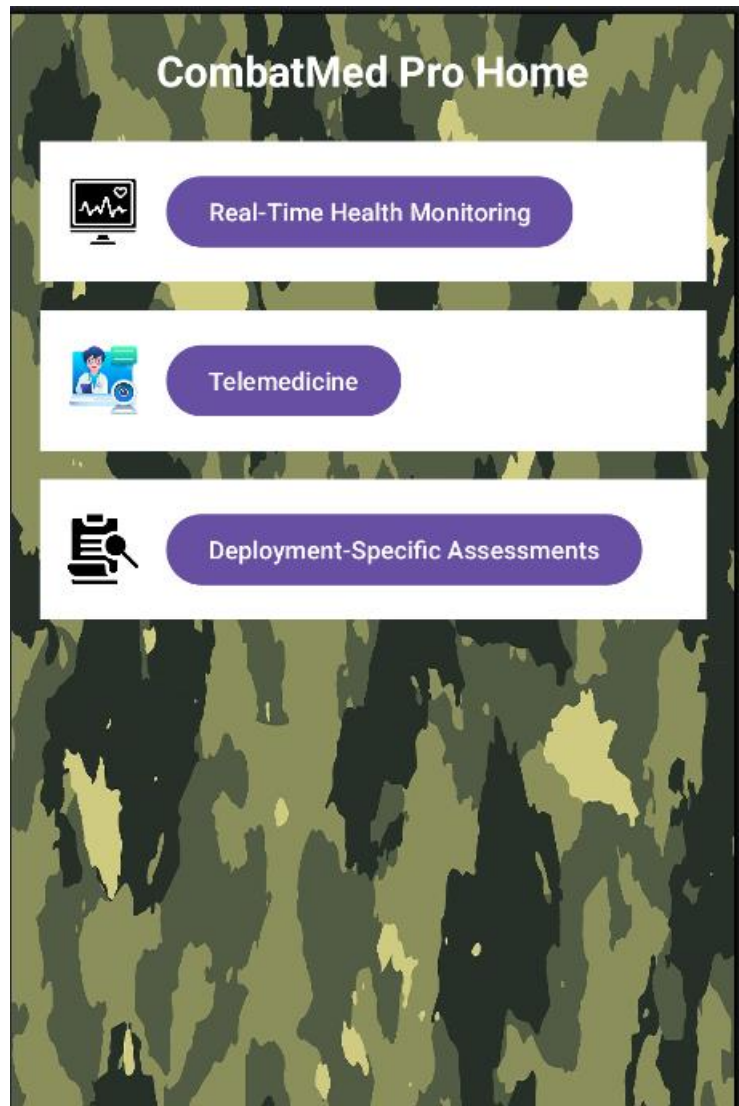


Fig 8.2 Home Page

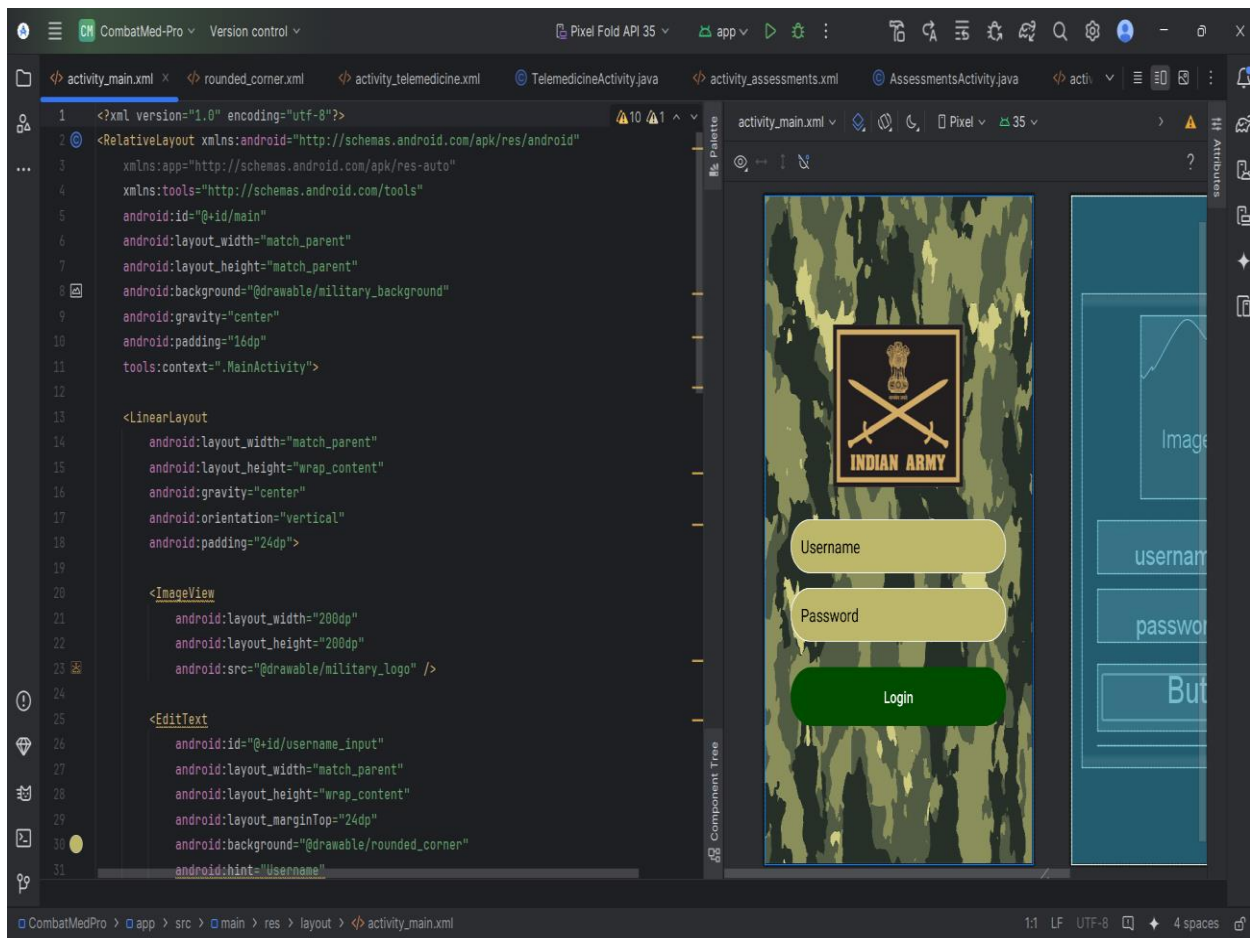


Fig 8.3 Sample Outlook of Project

CHAPTER 9

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