Software Requirements Specification (SRS) Document for AIDoc

1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to outline the requirements for the AIDoc application, an AI-powered medical chatbot. This document serves as a foundation for the design, development, and testing of the application.

1.2 Scope

AIDoc will provide features such as:

- Symptom analysis and disease prediction
- Treatment and medicine recommendations
- Medical test suggestions
- Doctor recommendations with contact details and locations
- Health record management
- Medication reminders
- Emergency assistance features
- AI-powered health tips and lifestyle suggestions
- Multi-language support
- Integration with wearable devices
- Availability on web, mobile, and desktop platforms

Target users include individuals seeking medical guidance, patients experiencing symptoms, and healthcare enthusiasts.

1.3 Definitions, Acronyms, and Abbreviations

- **AIDoc:** The AI-powered medical chatbot being developed.
- **User:** Any individual utilizing the application.
- **Doctor:** Medical professionals recommended by the system.
- **API:** Application Programming Interface.

2. Overall Description

2.1 Product Perspective

AIDoc is an independent application that integrates AI-driven analysis to assist users in understanding their health conditions. It provides a user-friendly interface for accessing medical information and recommendations.

2.2 Product Functions

- **Symptom Analysis:** Users input symptoms, and the AI processes the information to suggest potential diseases.
- **Treatment and Medicine Suggestions:** Provides recommendations based on identified syndromes.
- **Medical Test Recommendations:** Suggests necessary tests for further diagnosis.
- **Doctor Recommendation System:** Displays a list of well-known doctors with contact details and locations.
- **Health Record Management:** Allows users to store and manage past diagnoses, treatments, and test results.
- **Medication Reminder System:** Sends notifications for taking prescribed medicines and upcoming medical appointments.
- **Emergency Assistance:** Provides emergency contact features and access to nearby hospitals.
- **AI-Powered Health Tips:** Suggests personalized health, diet, and lifestyle tips based on user history.
- **Multi-Language Support:** Supports multiple languages for diverse user accessibility.
- **Integration with Wearable Devices:** Connects with smartwatches and fitness trackers for real-time health monitoring.
- **Cross-Platform Compatibility:** Available on web, mobile, and desktop applications.

2.3 Operating Environment

- Mobile devices (iOS and Android)
- Web browsers (Chrome, Firefox, Safari)
- Desktop applications (Windows, macOS)
- Integration with medical databases and external APIs

3. Specific Requirements

3.1 Functional Requirements

3.1.1 Symptom Analysis

- **FR1:** The system shall allow users to input symptoms for analysis.
- **FR2:** The AI shall provide possible disease predictions based on symptoms.

3.1.2 Treatment and Medicine Recommendations

- **FR3:** The system shall suggest treatments for identified conditions.

- **FR4:** The AI shall provide a list of recommended medicines based on the diagnosis.

3.1.3 Medical Test Recommendations

- **FR5:** The system shall recommend relevant medical tests for further diagnosis.

3.1.4 Doctor Recommendation System

- **FR6:** The system shall provide a list of doctors relevant to the diagnosed condition.
- **FR7:** The system shall display doctor contact details and locations.

3.1.5 Health Record Management

- **FR8:** The system shall allow users to maintain a digital health record including past diagnoses, treatments, and medical test results.
- **FR9:** Users shall be able to upload medical reports for AI-based analysis and recommendations.

3.1.6 Medication Reminder System

- **FR10:** The system shall allow users to set reminders for taking prescribed medications.
- **FR11:** The system shall provide notifications for upcoming medical tests and doctor appointments.

3.1.7 Emergency Assistance

- **FR12:** The system shall provide an emergency button to connect users with nearby hospitals or emergency services.
- **FR13:** The system shall allow users to store emergency contact details to notify a family member in case of critical health alerts.

3.1.8 AI-Powered Health Tips & Lifestyle Suggestions

- **FR14:** The system shall provide daily health tips based on user medical history and lifestyle.
- **FR15:** The system shall suggest diet and exercise plans for disease prevention and recovery.

3.1.9 Multi-Language Support

- **FR16:** The system shall provide medical guidance in multiple languages to support diverse user bases.

3.1.10 Integration with Wearable Devices

- **FR17:** The system shall integrate with smartwatches and fitness trackers to monitor vital signs like heart rate, blood pressure, and oxygen levels.
- **FR18:** The AI shall analyze real-time health data from wearables to provide proactive health recommendations.

3.2 Non-Functional Requirements

3.2.1 Usability

- **NFR1:** The application shall have an intuitive user interface for easy navigation.

3.2.2 Performance

- **NFR2:** The system shall process and display recommendations within five seconds.

3.2.3 Security

- **NFR3:** User health data shall be encrypted and protected to comply with healthcare regulations.

3.2.4 Reliability

- **NFR4:** The application shall maintain 99.9% uptime for uninterrupted access.

3.2.5 Scalability

- **NFR5:** The application shall support up to 50,000 simultaneous users.

4. System Features

4.1 User Registration and Profile Management

- Users can register, manage their profiles, and customize preferences.

4.2 Data Visualization

- The application shall provide graphical representations of health data and diagnosis results.

4.3 Communication with Doctors

- Users shall be able to contact doctors through integrated messaging or appointment booking features.

5. Other Requirements

5.1 Legal and Regulatory Compliance

- The application must comply with local and international healthcare data protection laws.

5.2 Documentation

- Comprehensive user manuals and technical documentation must be created and maintained.

6. Conclusion

This SRS document outlines the essential features and requirements for the AIDoc application. By adhering to these specifications, the development team can ensure that the application effectively meets the needs of its users and enhances medical guidance accessibility.