Clinic Management System

Complete Documentation & Setup Guide

Project Overview

The Clinic Management System is a comprehensive web-based application designed to streamline healthcare operations. It provides separate interfaces for doctors and receptionists, enabling efficient patient management, appointment scheduling, prescription handling, and billing.

Key Features

• Dual Role Authentication (Doctor & Receptionist)
• Patient Registration with Token Management
• Real-time Patient Queue System
• Electronic Prescription Management
• Automated Billing & Invoice Generation
• PDF Bill Generation with Cloud Storage
• Comprehensive Activity Logging
• Responsive Design for All Devices
• Real-time Data Synchronization
• Secure Firebase Authentication

Technology Stack

Frontend: HTML5, CSS3, JavaScript
Backend: Firebase (Firestore, Auth, Storage)
PDF Generation: jsPDF Library
Styling: Custom CSS with Modern Gradients

Installation & Setup

Prerequisites:
• Web browser (Chrome, Firefox, Safari, Edge)
• Firebase project with enabled services
• Text editor (VS Code recommended)

Firebase Configuration:

Update the Firebase configuration in script.js with your credentials.

Required Firebase Services:
• Authentication (Email/Password)
• Firestore Database
• Storage (for PDF files)

Database Structure

Firestore Collections:
• users (stores user profiles)
• patients (patient records)
• bills (billing information)
• logs (activity logs)
• settings (system settings)

Required Indexes:
• patients: status (Ascending), tokenNumber (Ascending)
• patients: status (Ascending), completedAt (Descending)

User Roles & Permissions

Doctor Dashboard:
• View patient queue in real-time
• Select patients for examination
• Create and submit prescriptions
• Set consultation fees
• View patient history

Receptionist Dashboard:
• Register new patients
• Generate unique token numbers
• Manage billing operations
• Generate PDF bills
• View completed consultations

How to Operate the System

Initial Setup:

1. Open the application in a web browser

2. You will see two login cards: Doctor Login and Receptionist Login

3. If this is your first time, click "Register as Doctor" or "Register as Receptionist"

4. Fill in the registration form with email, password, full name, and user type

5. Click "Register" button to create your account

6. After successful registration, you will be redirected to login

For Receptionists - Daily Operations:

Step 1: Login

1. Enter your email and password in the "Receptionist Login" section

2. Click "Login as Receptionist" button

3. You will be taken to the Receptionist Dashboard

Step 2: Register New Patients

1. In the "Token Generation" section, you will see the current token number

2. Fill in the patient registration form:

   - Patient Name (required)

   - Age (required)

   - Phone number (required)

   - Chief Complaint (required)

3. Click "Register Patient" button

4. System will automatically generate the next token number

5. Patient will appear in the doctor's queue

Step 3: Generate Bills

1. In the "Billing Management" section, you will see completed consultations

2. Each bill shows patient details, consultation fee, and registration fee

3. Click "Generate Bill" button for any patient

4. System will create a PDF bill and save it to cloud storage

5. Success message will confirm bill generation

For Doctors - Daily Operations:

Step 1: Login

1. Enter your email and password in the "Doctor Login" section

2. Click "Login as Doctor" button

3. You will be taken to the Doctor Dashboard

Step 2: View Patient Queue

1. In the "Patient Queue" section, you will see all waiting patients

2. Patients are displayed with:

   - Token number

   - Patient name

   - Age and phone number

   - Chief complaint

3. Queue is automatically sorted by token number

Step 3: Examine Patients

1. Click on any patient in the queue to select them

2. Patient details will appear in the right panel

3. A prescription form will appear below patient details

4. Fill in the prescription form:

   - Diagnosis (required)

   - Prescription details (required)

      - Consultation Fee (default ₹500, can be modified)

5. Click "Submit Prescription" button

6. Patient will move from queue to billing section

Important Operating Tips:

• Always logout when finishing your shift using the "Logout" button

• Patient tokens are generated automatically and cannot be manually changed

• Queue updates in real-time - refresh is not needed

• Bills can only be generated after doctor completes prescription

• PDF bills are automatically saved to cloud storage

• All actions are logged for audit purposes

• System works best with Chrome or Firefox browsers

Configuration Options

Customizable Settings:

• Hospital Name: Update in PDF generation function

• Registration Fee: Currently set to ₹50

• Default Consultation Fee: ₹500

• Token Number Format: 3-digit padded numbers

Security Features

• Firebase Authentication with email/password

• Role-based access control

• Secure data transmission (HTTPS)

• Activity logging for audit trails

• Input validation and sanitization

• Session management

Firebase Security Rules

Firestore Rules:

```
rules_version = "2";
service cloud.firestore {
  match /databases/{database}/documents {
    match /{document=**} {
      allow read, write: if request.auth != null;
    }
  }
}
```

Storage Rules:

```
rules_version = "2";
service firebase.storage {
  match /b/{bucket}/o {
    match /{allPaths=**} {
      allow read, write: if request.auth != null;
    }
  }
}
```

File Structure

```
clinic-management-system/
%%%  index.html         # Main HTML structure
%%%  style.css          # Custom styling
%%%  script.js          # Application logic
%%%  README.pdf         # This documentation
```

Troubleshooting

Common Issues:

• Index Errors: Create required Firestore indexes

• Authentication Fails: Check Firebase config

• PDF Not Generating: Verify jsPDF library loading

• Storage Upload Fails: Check Firebase Storage rules

Important Notes:

• Always backup your Firebase data regularly

• Monitor Firebase usage to avoid quota limits

• Keep Firebase SDK updated for security

• Test thoroughly before production deployment

Future Enhancements

• Appointment scheduling system

• SMS notifications for patients

• Medical history tracking

• Inventory management

• Analytics dashboard

• Multi-language support

• Mobile app development

Support & Contact

Developer: Clinic Management System Team
Version: 1.0.0
Last Updated: July 2025
License: MIT License