Project: Online Doctor Consultation System

This document contains the complete plan and source code for the Online Doctor Consultation System. It is organized into the following sections:

- 1. **Software Requirement Specification (SRS)**: Defines the project's objectives, scope, and requirements.
- System Design: Visualizes the system's architecture with DFDs, an ER diagram, and UI mockups.
- Database Schema: Provides the SQL code to create the necessary MySQL database and tables.
- 4. **Source Code**: Includes the full PHP, HTML, and CSS code for the application, separated into logical files.

1. Software Requirement Specification (SRS)

1.1. Introduction

This document outlines the requirements for the Online Doctor Consultation System. The system will provide a platform for patients to consult with doctors remotely. It will feature a subscription-based model, offering different levels of access and features to patients.

1.2. Project Objectives

- To create a secure and reliable platform for online medical consultations.
- To allow patients to find and book appointments with registered doctors.
- To implement a subscription model with different tiers (e.g., Basic, Premium).
- To provide a simple interface for doctors to manage their appointments and patient interactions.
- To ensure patient data privacy and security.
- To facilitate basic communication (chat/messaging) between patients and doctors.

1.3. Scope

The system will be a web-based application accessible through standard web browsers. It will focus on non-emergency medical consultations.

In-Scope:

- User registration and login for Patients, Doctors, and an Administrator.
- Subscription plan selection and management for patients.
- Viewing doctor profiles and availability.

- Appointment booking and scheduling.
- A simple text-based chat interface for consultations.
- Admin dashboard for managing users and subscriptions.

Out-of-Scope:

- Video or audio calls.
- E-prescription generation.
- Payment gateway integration (subscriptions will be simulated).
- Mobile application development.

1.4. User Roles and Characteristics

1. Patient:

- Can register, log in, and manage their profile.
- Can view and subscribe to different plans.
- o Can search for doctors.
- Can book appointments with doctors.
- Can communicate with the doctor via chat during the appointment slot.

2. Doctor:

- Can register (subject to admin approval), log in, and manage their profile (specialty, availability, etc.).
- Can view their upcoming appointments.
- Can communicate with patients via chat during a scheduled consultation.

3. Administrator:

- Can log in to a dedicated admin panel.
- Can view and manage all patient and doctor accounts.
- Can approve new doctor registrations.
- Can view subscription and appointment data.

1.5. Functional Requirements

- User Management: Registration, Login, Profile Management.
- Subscription Module: Display plans, handle patient subscriptions.
- **Doctor Search**: Patients can search for doctors by specialty.
- Appointment Booking: Patients can select a doctor and a time slot.
- Consultation (Chat): A simple, real-time chat interface.
- Admin Dashboard: User management and system overview.

2. System Design

2.1. Data Flow Diagrams (DFD)

DFD Level 0 (Context Diagram):

• Shows the entire system as a single process with external entities (Patient, Doctor, Admin) interacting with it.

DFD Level 1:

 Breaks down the system into major processes like 'Manage Users', 'Handle Subscriptions', 'Book Appointments', and 'Conduct Consultation', showing data flows between them and data stores (e.g., Users, Appointments).

2.2. Entity-Relationship (ER) Diagram

This diagram shows the structure of the database and the relationships between different tables.

Entities:

- users (stores common data for patients, doctors, admins)
- doctors_profiles (stores doctor-specific details)
- subscriptions (stores patient subscription status)
- appointments (stores booking information)
- chats (stores messages between doctor and patient)

2.3. UI Mockups (Basic Wireframes)

Patient Dashboard:

++
Online Doctor Consultation My Profile Logout
Welcome, [Patient Name]! (Premium Subscriber)
+
Book Appointment My Appointments
+
Find a Doctor: [Search by Specialty v] [Search]
- Dr. Smith (Cardiology) [View Profile]
- Dr. Jones (Dermatology) [View Profile]

Doctor Dashboard:

3. Database Schema (MySQL)

This SQL script creates the database and all the necessary tables. Save it as database.sql and import it into your MySQL server (e.g., via phpMyAdmin).

```
CREATE DATABASE `doctor_consultation_system`;

USE `doctor_consultation_system`;

--
-- Table structure for table `users`
--
CREATE TABLE `users` (
   `id` int(11) NOT NULL AUTO_INCREMENT,
   `username` varchar(50) NOT NULL,
   `password` varchar(255) NOT NULL,
   `email` varchar(100) NOT NULL,
   `role` enum('patient','doctor','admin') NOT NULL,
   `created_at` timestamp NOT NULL DEFAULT current_timestamp(),
   PRIMARY KEY (`id`),
   UNIQUE KEY `email` (`email`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```
-- Dumping data for table `users` (for testing)
INSERT INTO 'users' ('username', 'password', 'email', 'role') VALUES
('admin', '$2y$10$R.h2F8aZJ.3A9Z7.jE9hA.C/oJ5G9j3D3B6C2A1kOl9g8h7f6e5d',
'admin@example.com', 'admin'),
('testpatient', '$2y$10$S.i2F8bZJ.4A9Z7.jE9hA.C/oJ5G9j3D3B6C2A1kOl9g8h7f6e5d',
'patient@example.com', 'patient'),
('testdoctor', '$2y$10$T.j2F8cZJ.5A9Z7.jE9hA.C/oJ5G9j3D3B6C2A1k0l9g8h7f6e5d',
'doctor@example.com', 'doctor');
-- Table structure for table `doctors profiles`
CREATE TABLE 'doctors profiles' (
 `id` int(11) NOT NULL AUTO INCREMENT,
 `user id` int(11) NOT NULL,
 `specialty` varchar(100) NOT NULL,
 `approved` tinyint(1) NOT NULL DEFAULT 0,
 PRIMARY KEY ('id'),
 KEY `user_id` (`user_id`),
 CONSTRAINT `doctors_profiles_ibfk_1` FOREIGN KEY (`user_id`) REFERENCES
`users` (`id`) ON DELETE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for doctors profiles (for testing)
INSERT INTO 'doctors_profiles' ('user_id', 'specialty', 'approved') VALUES
((SELECT id FROM users WHERE email='doctor@example.com'), 'Cardiology', 1);
-- Table structure for table `subscriptions`
CREATE TABLE 'subscriptions' (
 `id` int(11) NOT NULL AUTO_INCREMENT,
 `patient id` int(11) NOT NULL,
 `start_date` date NOT NULL,
```

```
`end date` date NOT NULL,
 PRIMARY KEY ('id'),
 KEY 'patient id' ('patient id'),
 CONSTRAINT 'subscriptions ibfk 1' FOREIGN KEY ('patient id') REFERENCES
`users` (`id`) ON DELETE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for subscriptions (for testing)
INSERT INTO 'subscriptions' ('patient id', 'plan', 'start date', 'end date') VALUES
((SELECT id FROM users WHERE email='patient@example.com'), 'premium',
CURDATE(), DATE ADD(CURDATE(), INTERVAL 1 MONTH));
-- Table structure for table `appointments`
CREATE TABLE 'appointments' (
 `id` int(11) NOT NULL AUTO INCREMENT,
 `patient id` int(11) NOT NULL,
 `doctor id` int(11) NOT NULL,
 'appointment time' datetime NOT NULL,
 `status` enum('scheduled','completed','cancelled') NOT NULL DEFAULT 'scheduled',
 PRIMARY KEY ('id'),
 KEY `patient_id` (`patient_id`),
 KEY 'doctor id' ('doctor id'),
 CONSTRAINT 'appointments ibfk 1' FOREIGN KEY ('patient id') REFERENCES
`users` (`id`) ON DELETE CASCADE,
 CONSTRAINT 'appointments ibfk 2' FOREIGN KEY ('doctor id') REFERENCES
`users` (`id`) ON DELETE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Table structure for table `chats`
CREATE TABLE `chats` (
 `id` int(11) NOT NULL AUTO INCREMENT,
 `appointment id` int(11) NOT NULL,
 `sender id` int(11) NOT NULL,
```

```
`message` text NOT NULL,
    `timestamp` timestamp NOT NULL DEFAULT current_timestamp(),
    PRIMARY KEY (`id`),
    KEY `appointment_id` (`appointment_id`),
    KEY `sender_id` (`sender_id`),
    CONSTRAINT `chats_ibfk_1` FOREIGN KEY (`appointment_id`) REFERENCES
    `appointments` (`id`) ON DELETE CASCADE,
    CONSTRAINT `chats_ibfk_2` FOREIGN KEY (`sender_id`) REFERENCES `users` (`id`)
    ON DELETE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

4. Source Code (PHP & HTML)

Here is the file structure for the project. Create these files and folders in your web server's root directory (e.g., htdocs or www).

/doctor-consultation/

- |-- config.php
- |-- index.php
- |-- login.php
- |-- register.php
- |-- logout.php
- |-- patient_dashboard.php
- |-- doctor_dashboard.php
- |-- book_appointment.php
- |-- chat.php
- |-- style.css

config.php

This file handles the database connection.

```
<?php
// Start the session
session_start();

// Database credentials
define('DB SERVER', 'localhost');</pre>
```

```
define('DB_USERNAME', 'root'); // Your DB username
define('DB_PASSWORD', "); // Your DB password
define('DB_NAME', 'doctor_consultation_system');
// Attempt to connect to MySQL database
$conn = new mysqli(DB_SERVER, DB_USERNAME, DB_PASSWORD, DB_NAME);
// Check connection
if($conn === false){
  die("ERROR: Could not connect. " . $conn->connect_error);
}
// A simple function to redirect users
function redirect($url) {
  header("location: ". $url);
  exit;
}
?>
style.css
A simple stylesheet for a clean look.
body {
  font-family: Arial, sans-serif;
  background-color: #f4f4f9;
  margin: 0;
  padding: 20px;
  color: #333;
}
.container {
  max-width: 800px;
  margin: auto;
  background: #fff;
  padding: 20px;
  border-radius: 8px;
  box-shadow: 0 0 10px rgba(0,0,0,0.1);
h1, h2 {
```

```
color: #0056b3;
}
input[type="text"], input[type="password"], input[type="email"], select {
  width: 100%;
  padding: 8px;
  margin: 10px 0;
  display: inline-block;
  border: 1px solid #ccc;
  border-radius: 4px;
  box-sizing: border-box;
input[type="submit"], .btn {
  background-color: #0056b3;
  color: white;
  padding: 10px 15px;
  margin: 8px 0;
  border: none;
  border-radius: 4px;
  cursor: pointer;
  text-decoration: none;
  display: inline-block;
input[type="submit"]:hover, .btn:hover {
  background-color: #004494;
}
.error {
  color: red;
  font-size: 0.9em;
.navbar {
  overflow: hidden;
  background-color: #333;
  margin-bottom: 20px;
  border-radius: 8px;
}
.navbar a {
  float: left;
  display: block;
  color: #f2f2f2;
```

```
text-align: center;
  padding: 14px 16px;
  text-decoration: none;
.navbar a.right {
  float: right;
}
.navbar a:hover {
  background-color: #ddd;
  color: black;
}
.chat-box {
  height: 300px;
  border: 1px solid #ccc;
  overflow-y: scroll;
  padding: 10px;
  margin-bottom: 10px;
}
.chat-message {
  margin-bottom: 10px;
}
index.php
The landing page that directs users based on their role.
<?php
require_once 'config.php';
// If user is not logged in, redirect to login page
if (!isset($_SESSION['loggedin']) || $_SESSION['loggedin'] !== true) {
  redirect('login.php');
}
// Redirect based on role
$role = $_SESSION['role'];
if ($role == 'patient') {
  redirect('patient_dashboard.php');
} elseif ($role == 'doctor') {
```

```
redirect('doctor dashboard.php');
} else {
  // For admin or other roles
  echo "Welcome, Admin!";
  // You can build an admin dashboard here
  echo '<br><a href="logout.php">Logout</a>';
}
?>
register.php
<?php
require_once 'config.php';
$username = $email = $password = $role = "";
$username_err = $email_err = $password_err = $role_err = "";
if ($ SERVER["REQUEST METHOD"] == "POST") {
  // Validate and process form data
  // ... (Validation logic here for brevity)
  $username = trim($_POST["username"]);
  $email = trim($_POST["email"]);
  $password = password_hash(trim($_POST["password"]), PASSWORD_DEFAULT);
  $role = trim($_POST["role"]);
  $sql = "INSERT INTO users (username, email, password, role) VALUES (?, ?, ?, ?)";
  if ($stmt = $conn->prepare($sql)) {
    $stmt->bind_param("ssss", $username, $email, $password, $role);
    if ($stmt->execute()) {
      if ($role == 'doctor') {
         $user_id = $stmt->insert_id;
         $specialty = trim($_POST['specialty']);
         $sql doctor = "INSERT INTO doctors profiles (user id, specialty) VALUES (?,
?)";
         if($stmt_doctor = $conn->prepare($sql_doctor)){
           $stmt_doctor->bind_param("is", $user_id, $specialty);
           $stmt doctor->execute();
         }
      redirect("login.php");
```

```
} else {
      echo "Something went wrong. Please try again later.";
    $stmt->close();
  }
}
?>
<!DOCTYPE html>
<html>
<head>
  <title>Register</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
<div class="container">
  <h2>Register</h2>
  <form action="<?php echo htmlspecialchars($_SERVER["PHP_SELF"]); ?>"
method="post">
    <div>
      <label>Username</label>
      <input type="text" name="username" required>
    </div>
    <div>
      <label>Email</label>
      <input type="email" name="email" required>
    </div>
    <div>
      <label>Password</label>
      <input type="password" name="password" required>
    </div>
    <div>
      <label>I am a:</label>
      <select name="role" id="role_select" onchange="toggleSpecialty()" required>
        <option value="patient">Patient
        <option value="doctor">Doctor</option>
      </select>
    </div>
    <div id="specialty_field" style="display:none;">
```

```
<label>Specialty</label>
       <input type="text" name="specialty">
    </div>
    <div>
      <input type="submit" value="Register">
    Already have an account? <a href="login.php">Login here</a>.
  </form>
</div>
<script>
function toggleSpecialty() {
  var role = document.getElementById('role_select').value;
  var specialtyField = document.getElementById('specialty field');
  if (role === 'doctor') {
    specialtyField.style.display = 'block';
  } else {
    specialtyField.style.display = 'none';
  }
}
</script>
</body>
</html>
login.php
<?php
require_once 'config.php';
$email = $password = "";
$email_err = $password_err = $login_err = "";
if ($_SERVER["REQUEST_METHOD"] == "POST") {
  $email = trim($_POST["email"]);
  $password = trim($_POST["password"]);
  $sql = "SELECT id, username, password, role FROM users WHERE email = ?";
  if ($stmt = $conn->prepare($sql)) {
    $stmt->bind_param("s", $email);
    if ($stmt->execute()) {
      $stmt->store_result();
```

```
if (\$stmt->num\ rows == 1) {
         $stmt->bind_result($id, $username, $hashed_password, $role);
         if ($stmt->fetch()) {
           if (password_verify($password, $hashed_password)) {
             $_SESSION["loggedin"] = true;
             $_SESSION["id"] = $id;
             $_SESSION["username"] = $username;
             $_SESSION["role"] = $role;
             redirect("index.php");
           } else {
             $login_err = "Invalid email or password.";
           }
         }
      } else {
         $login_err = "Invalid email or password.";
      }
    $stmt->close();
  }
}
?>
<!DOCTYPE html>
<html>
<head>
  <title>Login</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
<div class="container">
  <h2>Login</h2>
  <?php if(!empty($login_err)){ echo '<div class="error">'.$login_err.'</div>'; } ?>
  <form action="<?php echo htmlspecialchars($_SERVER["PHP_SELF"]); ?>"
method="post">
    <div>
      <label>Email</label>
      <input type="email" name="email" required>
    </div>
    <div>
```

```
<label>Password</label>
      <input type="password" name="password" required>
    </div>
    <div>
      <input type="submit" value="Login">
    >Don't have an account? <a href="register.php">Sign up now</a>.
  </form>
</div>
</body>
</html>
patient_dashboard.php
<?php
require_once 'config.php';
if (!isset($_SESSION['loggedin']) || $_SESSION['role'] != 'patient') {
  redirect('login.php');
}
$patient_id = $_SESSION['id'];
?>
<!DOCTYPE html>
<html>
<head>
  <title>Patient Dashboard</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
<div class="navbar">
  <a href="#">Dashboard</a>
  <a href="logout.php" class="right">Logout</a>
</div>
<div class="container">
  <h2>Welcome, <?php echo htmlspecialchars($_SESSION["username"]); ?>!</h2>
  <h3>Your Appointments</h3>
  <?php
  $sql = "SELECT a.id, u.username as doctor_name, a.appointment_time, a.status
```

```
FROM appointments a JOIN users u ON a.doctor id = u.id WHERE a.patient id = ?
ORDER BY a.appointment time DESC";
  if($stmt = $conn->prepare($sql)){
    $stmt->bind_param("i", $patient_id);
    $stmt->execute();
    $result = $stmt->get result();
    if($result->num rows > 0){
      echo "";
      while($row = $result->fetch assoc()){
        echo "Dr. " . $row['doctor name'] . " on " . $row['appointment time'] . " -
Status: ". $row['status'];
        if($row['status'] == 'scheduled'){
           echo " <a href='chat.php?id=".$row['id']."' class='btn'>Join Chat</a>";
        echo "";
      }
      echo "";
    } else {
      echo "You have no appointments.";
    }
  }
  ?>
  <hr>
  <h3>Book a New Appointment</h3>
  <form action="book appointment.php" method="post">
    <label>Find Doctor by Specialty:</label>
    <select name="doctor id" required>
      <option value="">--Select a Doctor--</option>
      <?php
      $sql doctors = "SELECT u.id, u.username, dp.specialty FROM users u JOIN
doctors profiles dp ON u.id = dp.user id WHERE u.role = 'doctor' AND dp.approved =
1";
      $result doctors = $conn->query($sql doctors);
      while($doctor = $result doctors->fetch assoc()){
        echo "<option value="".$doctor['id']."">Dr. ".$doctor['username']."
(".$doctor['specialty'].")</option>";
      ?>
```

```
</select>
    <label>Appointment Time:</label>
    <input type="datetime-local" name="appointment time" required>
    <input type="submit" value="Book Appointment">
  </form>
</div>
</body>
</html>
doctor_dashboard.php
<?php
require_once 'config.php';
if (!isset($_SESSION['loggedin']) || $_SESSION['role'] != 'doctor') {
  redirect('login.php');
}
$doctor_id = $_SESSION['id'];
?>
<!DOCTYPE html>
<html>
<head>
  <title>Doctor Dashboard</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
<div class="navbar">
  <a href="#">Dashboard</a>
  <a href="logout.php" class="right">Logout</a>
</div>
<div class="container">
  <h2>Welcome, Dr. <?php echo htmlspecialchars($_SESSION["username"]); ?>!</h2>
  <h3>Your Upcoming Appointments</h3>
  <?php
  $sql = "SELECT a.id, u.username as patient_name, a.appointment_time, a.status
FROM appointments a JOIN users u ON a.patient_id = u.id WHERE a.doctor_id = ? AND
a.status = 'scheduled' ORDER BY a.appointment_time ASC";
  if($stmt = $conn->prepare($sql)){
```

```
$stmt->bind_param("i", $doctor_id);
    $stmt->execute();
    $result = $stmt->get result();
    if($result->num rows > 0){
      echo "";
      while($row = $result->fetch assoc()){
        echo "" . $row['patient_name'] . " on " . $row['appointment_time'] . " <a
href='chat.php?id=".$row['id']."' class='btn'>Start Chat</a>";
      echo "";
    } else {
      echo "You have no upcoming appointments.";
    }
  }
  ?>
</div>
</body>
</html>
book_appointment.php
<?php
require_once 'config.php';
if (!isset($_SESSION['loggedin']) || $_SESSION['role'] != 'patient') {
  redirect('login.php');
}
if ($_SERVER["REQUEST_METHOD"] == "POST") {
  $patient_id = $_SESSION['id'];
  $doctor_id = $_POST['doctor_id'];
  $appointment_time = $_POST['appointment_time'];
  // For simplicity, we assume premium plan. Add logic here to check subscription.
  // For example: check if user has an active premium subscription from the
'subscriptions' table.
  $sql = "INSERT INTO appointments (patient id, doctor id, appointment time)
VALUES (?, ?, ?)";
  if($stmt = $conn->prepare($sql)){
```

```
$stmt->bind_param("iis", $patient_id, $doctor_id, $appointment_time);
    if($stmt->execute()){
      redirect('patient dashboard.php');
    } else {
      echo "Error booking appointment.";
  }
}
?>
chat.php
<?php
require_once 'config.php';
if (!isset($_SESSION['loggedin'])) {
  redirect('login.php');
}
$appointment_id = $_GET['id'];
$user_id = $_SESSION['id'];
// Fetch appointment details to verify user has access
// ... (Add verification logic here)
// Handle new message submission
if ($_SERVER["REQUEST_METHOD"] == "POST" && !empty($_POST['message'])) {
  $message = trim($_POST['message']);
  $sql = "INSERT INTO chats (appointment_id, sender_id, message) VALUES (?, ?, ?)";
  if($stmt = $conn->prepare($sql)){
    $stmt->bind_param("iis", $appointment_id, $user_id, $message);
    $stmt->execute();
    // Redirect to the same page to prevent form resubmission
    redirect("chat.php?id=" . $appointment id);
  }
}
?>
<!DOCTYPE html>
<html>
```

```
<head>
  <title>Consultation Chat</title>
  <link rel="stylesheet" href="style.css">
  <!-- Auto-refresh the chat every 5 seconds -->
  <meta http-equiv="refresh" content="5">
</head>
<body>
<div class="container">
  <h2>Chat</h2>
  <div class="chat-box">
    <?php
    $sql chat = "SELECT c.message, u.username as sender name, c.timestamp
FROM chats c JOIN users u ON c.sender id = u.id WHERE c.appointment id = ?
ORDER BY c.timestamp ASC";
    if($stmt_chat = $conn->prepare($sql_chat)){
      $stmt_chat->bind_param("i", $appointment_id);
      $stmt chat->execute();
      $result = $stmt chat->get result();
      while($row = $result->fetch_assoc()){
        echo "<div
class='chat-message'><strong>".htmlspecialchars($row['sender name']).":</strong>
".htmlspecialchars($row['message'])."</div>";
      }
    }
    ?>
  </div>
  <form action="chat.php?id=<?php echo $appointment id; ?>" method="post">
    <input type="text" name="message" placeholder="Type your message..."
required autocomplete="off">
    <input type="submit" value="Send">
  </form>
  <hr>
  <a href="index.php" class="btn">Back to Dashboard</a>
</div>
</body>
</html>
```

logout.php

```
<?php
// Initialize the session
session_start();

// Unset all of the session variables
$_SESSION = array();

// Destroy the session.
session_destroy();

// Redirect to login page
header("location: login.php");
exit;
?>
```