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Course Title : Software Design &

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Department : Software Engineering

Project Title: Online Psychological Consultation System

Introduction:

1. Purpose

The purpose of this project is to develop an Online Psychological Consultation System that connects patients seeking mental health support with professional psychologists through an easy-to-use web platform. The system allows patients to register, book sessions, attend online consultations via video or audio, make secure payments, and receive prescriptions or therapy notes after the session. Psychologists can manage appointments, conduct sessions, and maintain patient records, while an admin monitors overall system activity and user management.

2. Scope

This system provides an online space for safe and efficient psychological consultations. It includes three main user panels:

- **Admin Panel**: It manages users, payments, and system operations.
- **Psychologist Panel**: It allows professionals to handle appointments, provide therapy, and create prescriptions.
- **Patient Panel:** It enables patients to book sessions, join consultations, and give feedback.

The system supports secure login, online payment, notification alerts, and a feedback mechanism. It aims to simplify the process of finding and consulting psychologists, especially for users who prefer privacy or remote access.

3. Users of the System

1. **Admin:** Oversees the platform, manages users, verifies psychologists, and handles payments.
2. **Psychologist:** Conducts therapy sessions, manages schedules, and provides prescriptions.
3. **Patient:** Books appointments, attends sessions, and gives feedback.

4. Technologies Used

- **Backend:** PHP (Laravel Framework)
- **Frontend:** HTML, CSS, JavaScript
- **Database:** MySQL

Functional Requirements:

a. Admin Panel

The Admin Panel is responsible for managing the overall system operations and ensuring a secure, organized environment for users and activities.

Functionalities:

1. **Authentication and Access Control**
   • Admin logs in securely using valid credentials.
   • Unauthorized users are restricted from accessing the system.

2. **User Management**
   • Admin can add, edit, and remove user accounts (patients and psychologists).
   • Monitor user activity and manage active/inactive account status.

3. **Psychologist Verification**
   • Review psychologist profiles before approval.
   • Verify uploaded qualifications and ensure authenticity before activation.

4. **Appointment Monitoring**
   • Track all appointments — pending, confirmed, completed, or cancelled.
   • Observe patterns such as repeated cancellations or missed sessions.

5. **Payment Oversight**
   • Access complete transaction history and verify financial accuracy.
   • Handle payment disputes or refund requests if necessary.

6. **Feedback Monitoring**
   • Review feedback submitted by patients regarding sessions.
   • Remove inappropriate or misleading reviews to maintain system integrity.

7. **Notification and Communication**
   • Send important announcements, reminders, or updates to users.
   • Alert psychologists about new appointments or system policies.

8. **Report Generation**
   • Generate periodic reports on appointments, payments, and user activity.
   • Analyze system trends to support administrative decisions.

9. **Data Security and Backup**
   • Maintain encrypted database backups regularly.
   • Ensure quick recovery of data in case of system or server failure.

b. Psychologist Panel

The Psychologist Panel enables verified professionals to manage their consultations, schedules, and patient interactions efficiently.

Functionalities:

1. **Registration and Profile Setup**
   • Psychologists register by entering personal and professional details.
   • Upload certifications and specify areas of expertise.

2. **Login and Authentication**
   • Access the panel using secure credentials to maintain confidentiality.

3. **Profile Management**
   • Update bio, experience, consultation fee, and contact details.
   • Edit qualifications and adjust availability as required.

4. **Availability Scheduling**
   • Set available days and time slots for online sessions.
   • Modify schedules dynamically to manage workload or personal breaks.

5. **Appointment Management**
   • View all upcoming, ongoing, and completed appointments.
   • Confirm, reschedule, or cancel appointments when needed.

6. **Conduct Online Sessions**
   • Use integrated audio/video tools to conduct virtual consultations.
   • Communicate securely with patients within the platform.

7. **Session Notes and Diagnosis**
   • Record key details, observations, and follow-up recommendations.
   • Maintain digital session records for future reference.

8. **Prescription Creation**
   • Generate and assign prescriptions or therapy notes to patients.
   • Store prescriptions securely in the database for patient access.

9. **Feedback Review**
   • Review ratings and comments from patients.
   • Use feedback to enhance consultation quality.

10. **Earnings and Payment History**
    • View detailed earning reports and payment confirmations.
    • Track income generated through consultation sessions.

c. Patient Panel

The Patient Panel offers a user-friendly interface for patients to search, book, and attend psychological consultations conveniently.

Functionalities:

1. **User Registration and Login**
   • Patients register by entering personal details and creating credentials.
   • Secure login system protects sensitive information.

2. **Profile Management**
   • Update personal data, contact details, and medical history.
   • Manage account settings and preferences easily.

3. **Search and View Psychologists**
   • Browse verified psychologists by specialty, experience, rating, or consultation fee.
   • View detailed psychologist profiles before making a booking.

4. **Book Appointments**
   • Select a psychologist, preferred date, and available time slot.
   • Choose between video or audio consultation modes.
   • Confirm appointment instantly with automated booking confirmation.

5. **Payment Integration**
   • Make payments securely using online methods such as debit/credit card, PayPal, or JazzCash.
   • View receipts and transaction details after successful payment.

6. **Attend Online Sessions**
   • Join consultations through the integrated secure audio/video system.
   • Communicate in real-time with the psychologist.

7. **View Prescriptions and Notes**
   • Access therapy notes and digital prescriptions uploaded by the psychologist.
   • Download records for personal reference.

8. **Feedback and Ratings**
   • Provide ratings and write feedback after each session.
   • Share overall experience to help future patients choose wisely.

9. **Notifications and Reminders**
   • Receive timely reminders for upcoming sessions and payment alerts.
   • Get notified of changes or cancellations in booked appointments.

10. **View History**
   • Access past appointment records, payment history, and prescriptions anytime.
   • Keep track of ongoing treatment and progress.

Non-Functional Requirements:

1. **Performance:**
   The system should handle multiple users simultaneously without lag.

2. **Security:**
   Sensitive data like passwords and payment information must be encrypted and secured.

3. **Usability:**
   The interface should be simple, intuitive, and accessible for all types of users.

4. **Availability:**
   The system should be available 24/7 with minimal downtime.

5. **Scalability:**
   It must be flexible enough to accommodate a growing number of users and sessions.

6. **Reliability:**
   The system should maintain accurate data, especially for appointments and payments.

7. **Maintainability:**
   Code structure should allow easy updates and bug fixes.

General System Functionalities:

These features support the overall working of the platform and are shared among all users.

1. Secure Authentication

- Ensures every user logs in safely; all passwords are encrypted.
- Users must enter valid login credentials to access the system.
- Passwords are stored securely in encrypted form to protect user data.

2. Data Management

- All information (profiles, appointments, feedback) is stored and retrieved efficiently from the MySQL database.
- Data operations like storing, updating, and retrieving are handled properly.
- The system maintains relationships between different entities for smooth access.

3. Responsive Interface

- The system adjusts automatically for desktop and mobile screens.
- Interface layout adapts based on device size and type.
- All options remain clear and easy to use on any device.

4. Notification System

- Sends alerts for new bookings, reminders, and updates.
- Users receive timely notifications for upcoming sessions or changes.
- Notifications help keep all users informed of important actions.

5. Search and Filter

- Helps patients find suitable psychologists quickly based on need and availability.
- Patients can search psychologists by name, specialty, or time slot.
- Filters refine search results to match user requirements.

6. Error Handling

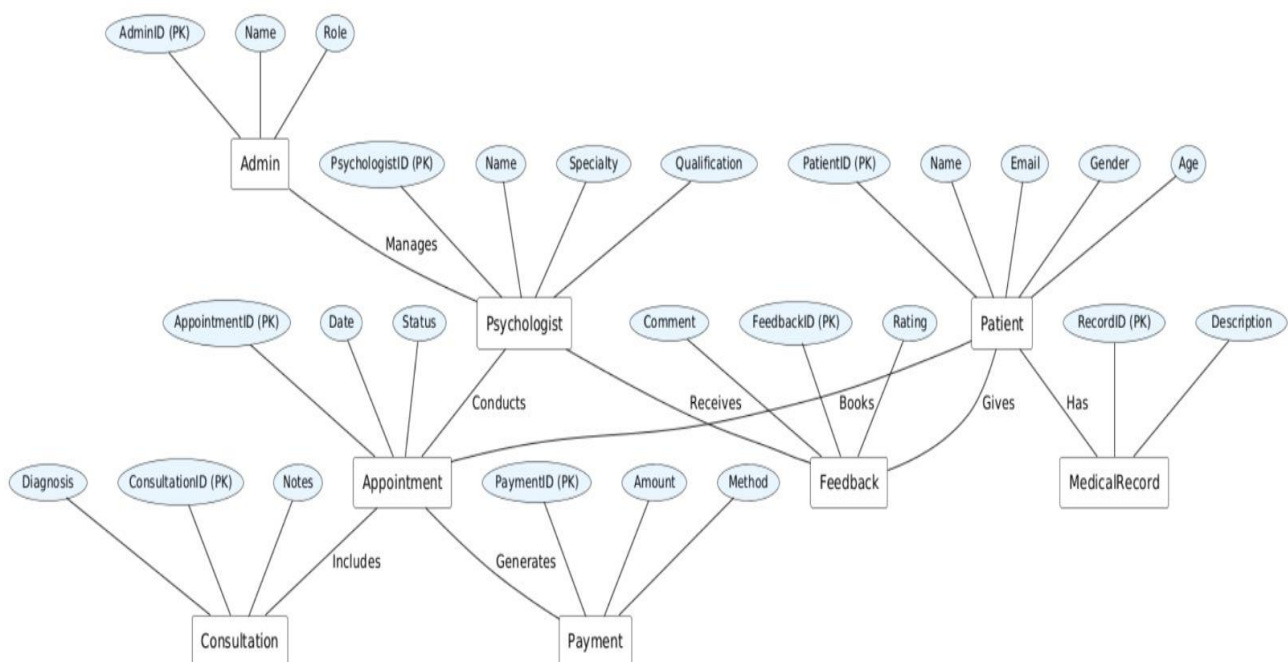- Provides user-friendly error messages and prevents system crashes.
- The system identifies errors and displays understandable messages.
- Error management ensures stable and smooth functioning.

7. Data Backup

- Regular database backups ensure data safety and recovery.
- Backups protect the system from data loss or corruption.
- Stored backups can be used to restore information when required.

ER Diagram:

Class Diagram:

Admin
- adminID : int
- name : string
- email : string
- role : string
- password : string
- login()
- managePsychologists()
- managePatients()
- viewReports()

1
manages
*

Psychologist
- psychologistID : int
- name : string
- email : string
- specialty : string
- qualification : string
- password : string
- login()
- conductConsultation()
- updatePatientRecord()
- viewAppointments()

Patient
- patientID : int
- name : string
- email : string
- gender : string
- age : int
- password : string
- register()
- login()
- bookAppointment()
- viewMedicalHistory()
- giveFeedback()

1   1   receives   conducts gives   books   has

Feedback
- feedbackID : int
- rating : int
- comment : string
- date : Date
- submitFeedback()
- viewFeedback()

Appointment
- appointmentID : int
- date : Date
- time : Time
- mode : string ' online/offline
- status : string
- scheduleAppointment()
- cancelAppointment()
- updateStatus()

MedicalRecord
- recordID : int
- description : string
- createdDate : Date
- addRecord()
- viewRecord()

1   1
includes   generates
1   1

Consultation
- consultationID : int
- notes : string
- diagnosis : string
- recordConsultation()
- viewConsultation()

Payment
- paymentID : int
- amount : double
- paymentDate : Date
- method : string
- makePayment()
- generateInvoice()