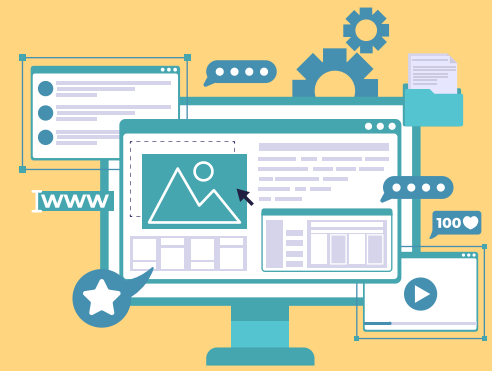


Low Level Design



OVERVIEW

The low-level design of the Oncology Management System delves into the detailed implementation of individual components, modules, and functionalities to realize the system's high-level architecture and objectives effectively.

1

2

UI COMPONENTS

PATIENT DASHBOARD

Displays patient demographics, vital signs, pathology history, and radiology history in a user-friendly interface.



CHEMOTHERAPY PLAN MANAGER

Allows healthcare professionals to create, update, and schedule chemotherapy plans for patients, with options to add cycles, medications, and dosages.

MEDICATION TRACKER

CYCLE DOCUMENTATION INTERFACE

Enables healthcare professionals to document treatment cycles, recording timestamps, dosages administered, medications, pre-medications, notes, and observed side effects.

Tracks prescribed medications, dosages, frequencies, and administration instructions, providing alerts for missed doses or adverse reactions.



AUTHENTICATION INTERFACE

Provides login and registration forms for user authentication, with password hashing and encryption for security.

3 MODULES & COMPONENTS

AUTHENTICATION AND AUTHORIZATION MODULE



- Implements token-based authentication using JSON Web Tokens (JWT) for secure user sessions.
- Utilizes bcrypt for password hashing and encryption to protect user credentials.
- Integrates role-based access control (RBAC) to enforce access permissions based on user roles and privileges.

PATIENT INFORMATION MANAGEMENT MODULE

- Stores patient data in a relational database, organized by unique patient identifiers.
- Implements CRUD operations for adding, updating, retrieving, and deleting patient records securely.
- Includes data validation checks to ensure the integrity and accuracy of patient information.

CHEMOTHERAPY PLAN AND CYCLE MANAGEMENT MODULE

- Designs relational database schema to store chemotherapy plans, cycles, medications, and dosages.
- Implements business logic for creating, updating, and scheduling chemotherapy plans and cycles.
- Integrates calendar and scheduling functionalities to manage treatment sessions efficiently.

MEDICATION AND DOSAGE TRACKING MODULE

- Implements medication tracking functionality using relational database tables to store medication records.
- Utilizes data validation and error handling to ensure accurate recording and tracking of medication dosages and administration details.
- Provides alerts and notifications for missed doses, medication interactions, and adverse reactions.

CYCLE DOCUMENTATION MODULE



- Develops user interface components for documenting treatment cycles, including forms for entering timestamps, dosages, medications, and notes.
- Integrates rich text editing capabilities for adding detailed notes and observations during treatment sessions.
- Stores cycle documentation data securely in the database, linked to patient and treatment plan identifiers.

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DATA FLOW

- User interacts with the application interface, accessing various modules and functionalities.
- Authentication module validates user credentials and generates authentication tokens for authorized sessions.
- Patient information, chemotherapy plans, medications, and cycle documentation are retrieved from the database based on user requests.
- CRUD operations are performed on data records through user interfaces, triggering corresponding database transactions.
- Data validation checks are applied to user inputs and database transactions to ensure data integrity and accuracy.
- Updated data records are securely stored in the database, maintaining referential integrity and compliance with data protection regulations.

PROJECT INTERNAL STRUCTURE

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