

Patient Messaging and Queue Management System

❖ System Requirements

- The system must support user roles: Primary Admin (Single), Secondary Admin, Moderator, and User.
 - The system uses the same login page for pre-created users no matter what their role is.
 - The Login Page has username and password textboxes.
 - The system language will be mainly in **Arabic**.
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- **Admins Privileges & Permissions:**
 - Only the **Primary Admin** can create Secondary Admins.
 - Both Primary and Secondary Admins can manage:
 - Add, Delete or Reset Password of moderators and users.
 - Queue and message quotas for moderators.
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- **Primary Admin** (System Owner):
 - Has **full control** over all users and data.
 - Can:
 - ◆ Create, manage, and delete **Secondary Admins, Moderators, and Users**.
 - ◆ Set and edit **privileges** for all other roles.
 - ◆ Limit the number of:
 - **Messages sent** per moderator/user.
 - **Queues** a moderator can create.
 - ◆ Manage all **message templates** and **queues**.
 - ◆ View, edit, and delete **all queues, patients, messages, and users**, regardless of creator.
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- **Secondary Admin:**
 - Can:
 - ◆ Create and delete **Moderators and Users**.
 - ◆ Set:
 - Message quotas
 - Queue limits
 - ◆ Manage all **message templates** and **queues**.
 - ◆ View, edit, and delete **all queues, patients, messages, and users**, regardless of creator.
 - **Cannot create or manage other Secondary Admins or the Primary Admin.**
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- **Moderators:**
 - Can add **new users**.
 - Can add **new queues (doctors)**.
 - Can **edit** and **delete** message templates.
 - Can manage all user actions on only the users he created or under his authority.
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- **Users:**
 - Have all moderator privileges except:
 - Can **add** messages but **cannot edit or delete** them.
 - **Cannot add new queues**.
 - Note that no user at any level (User, Moderator, Primary or Secondary Admin) can promote or demote another user to a higher role or modify the privileges of anyone above them, due to hierarchy restrictions.
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- **Main UI Structure:**
 - **Two-Panel Layout:**
 - **Left Panel (1:4 width):** Navigation menu:
 - ◆ "Queues".
 - ◆ "Messages".
 - ◆ "Management" (based on role).
 - **Right Panel (3:4 width):** Content Area:
 - ◆ Based on selected queue or menu item.
 - ◆ Sub-navigation: **"Main Dashboard", "Ongoing Tasks", "Failed Tasks"**.
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- **Queues Panel (Left Panel Option 1):**
 - Header: **"Queues":**
 - **WhatsApp Session Status** (appears only for Users and Moderators).
 - **'+' button** (Moderators only, to belong to a moderator not an admin, as it is limited):
 - ◆ Add new queues (doctor sessions).
 - List of existing queues:
 - ◆ Displays **doctors names** and their **patient count**.
 - ◆ **Edit** queue name and **Delete** the entire queue **icons** (Moderators only).
 - ◆ Clicking on any queue loads details in the Right Panel.
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- **Queue Details Panel (Right Panel):**
 - **Three-Tab Navigation:**
 - **Main Dashboard.**
 - **Ongoing Tasks.**
 - **Failed Tasks.**
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- **Main Dashboard:**
 - ◆ Queue Header:
 - Doctor's name.
 - Total number of patients.
 - Toast Alerts & Notifications (WhatsApp Session Status).
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- ◆ Buttons:
 - **Add Patient Manually:**
 - Inputs in a slot:
 - Position (auto-filled, editable).
 - Full Name.
 - Phone Number (with country code dropdown, default: Egypt).
 - Option to add more slots for additional patients, up to 50 patients at once.
 - **Upload Patients File:**
 - Select Excel file → preview parsed data → confirm add.
 - Only a pre-defined Excel template is supported to work smoothly.
 - Sample template preview is displayed below the upload button.
 - **Delete {x} Selected Patients:**
 - Deletes all selected patients after confirmation.
 - **Message Selection:**
 - Select default message (from template titles dropdown).
 - Optionally add up to **5 specified conditions**:
 - Each condition is either:

- ◆ A **range** (e.g., 2–5 patients remaining).
- ◆ A **less than / greater than** clause.
- ◆ Each condition maps to a **message template**.
- **Send to {x} Selected Patients:**
 - Opens **preview table**:
 - Position.
 - Name.
 - Phone Number.
 - **Final Message**.
- **Current Queue Position (CQP):**
 - The number which indicates which patient has the turn to enter the session.
 - A number which is **manually editable**, and can also be either incremented or decremented by the following buttons:
 - **+ button:** Used to increase the value of CQP by one.
 - **- button:** Used to decrease the value of CQP by one.
 - In case of attempting to send messages **Twice** with the same CQP, a confirmation message pops-up making sure that you are making that action intentionally.
- **Estimated Time per Session (ETS):** Editable number that should be specified in case of using this variable in the **Messages panel**.

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- ◆ **Patients Table:**
 - Selection Checkbox (top-level select all).
 - Position.
 - Full Name.
 - Phone Number.
 - Actions:
 - **WhatsApp Icon:** Opens the web browser redirecting to patient’s WhatsApp chat.
 - **Edit:** Opens editable patient form.
 - **Delete:** Removes patient.

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- ◆ On editing the position of any user, there are two cases:
 - Assume that the queue has 10 patients:
 - When updating the position of that patient to any number greater than 10 (i.e. 15), it repositions the number to 11 automatically to:
 - Stick to the queue arrangement.
 - Avoid wrong data in **Estimated Time Remaining (ETR)** variable in **Messages panel**.
 - When updating the position of that patient to any number already assigned to a patient, it will automatically replace the intended position, and the below positions will be increased by 1 value. (i.e. edit is on position 10 to be 5, so the patient that was having 5 will be 6, and 6 will be 7 and so on).

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- **Ongoing Tasks:**
 - ◆ **Progress Indicator:** (i.e. Processed 15 of 50, with 2 failed).
 - ◆ **Queue Status Table:**
 - Selection Checkbox (top-level select all).
 - Position.
 - Full Name.
 - Phone Number.
 - Status.
 - Message (single-lined, truncated (ends) with “...”).
 - Actions:
 - Edit (Name & Phone Number).
 - Delete.
 - ◆ **Top Right:**
 - **Show/Hide Messages** toggle.
 - ◆ **Status States:**
 - **Pending (Grey):** Queued to be sent.
 - **Processing (Yellow):** Currently sending.
 - **Done (Green):** Successfully delivered.
 - **Failed (Red):** click to view failure reason:
 - Invalid Phone Number.
 - Can't Access WhatsApp Session.
 - Invalid Message Characters.
 - Server Error.
 - Unknown Error.
 - ◆ Ongoing queues appear as separate vertical tables (labeled with time and session ID).
 - ◆ Completed messages auto-disappear.
 - ◆ Failed rows move to **“Failed Tasks”**.

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- **Failed Tasks:**
 - ◆ A **“Retry {x} Selected”** button above the table.
 - ◆ Same table structure as “Ongoing Tasks”.




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- **Messages Panel (Left Panel Option 2):**
 - Header: **“Messages”:**
 - **‘+’ button:**
 - ◆ Opens a form with:
 - Message Title.
 - Message Description.
 - **Variables Section:** Includes clickable variables to be used in message title or description:
 - Variables:
 - **Current Queue Position (CQP):** Inserts the position (number) of the patient having the turn now.
 - **Patient Queue Position (PQP):** Inserts the position (number) of the patient receiving the message.
 - **Estimated Time per Session (ETS):** A value that is inserted manually in the **Main Dashboard**.
 - **Estimated Time Remaining (ETR):** Inserts a result of calculating the number of positions remaining for the receiving message patient and the **Estimated Time per Session (ETS)**.
 - **Patient Name (PN):** Inserts the name of the patient receiving the message.
 - Message List:
 - ◆ Title.
 - ◆ Description.
 - ◆ **Edit/Delete** buttons (Moderators only).

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- **Management Panel (Left Panel Option 3):**
 - **Left Panel Hierarchy:**
 - **Primary Admin View:**

- ◆ Account Settings (Primary Admin).
- ◆ All Secondary Admins.
- ◆ All Moderators.
- ◆ All Users (with moderators mentioned).
- **Secondary Admin View:**
 - ◆ Account Settings (Secondary Admin).
 - ◆ All Moderators.
 - ◆ All Users (with their moderators mentioned).
- **Moderator View:**
 - ◆ Account Settings (Moderator).
 - ◆ Users (under that moderator only).
- **User View:**
 - ◆ Account Settings (User).

▪ **Right Panel Layout:**

- **Account Settings View (Option 1):**
 - **Admin View:**
 - When an **Admin logs in**, the right panel includes:
 - ◆ **Editable Account Info:**
 - First Name.
 - Last Name.
 - Username (Login ID).
 - Change Password:
 - Toggle expands into 3 fields:
 - Current Password.
 - New Password.
 - Retype New Password.

- **Moderator View:**
 - When a **Moderator logs in**, the right panel includes:
 - ◆ **Quota Summary (Read-Only):**
 - **Total Consumed:**
 - X Messages.
 - Y Queues.
 - **Total Remaining:**
 - A Messages.
 - B Queues.
 - ◆ **WhatsApp Authentication Section:**
 - **Displayed only for Moderators.**
 - **Purpose:**
 - Required for WhatsApp session validation to enable message sending.
 - **Components:**
 - **Session Status Display:**
 - Session Status: [Connected  | Disconnected 
 - **Authenticate WhatsApp Session Button:**
 - Button: 
 - ◆ Authenticate WhatsApp Session
 - Action:
 - ◆ Opens a QR code modal for the moderator to scan via WhatsApp on their device.
 - **Last Authenticated Timestamp** (read-only).
 - **Session Timeout Warning** (if applicable):
 - “Your session will expire in X minutes. Please re-authenticate to avoid interruption.”
 - ◆ **Editable Account Info:**
 - Same details as that in ‘Admin View’.

- **User View (Account Settings View):**
 - When a **User logs in**, the right panel includes:
 - ◆ **Quota Summary (Read-Only):**
 - **Under the linked Moderator.**
 - **Total Consumed:**
 - X Messages.
 - Y Queues.
 - **Total Remaining:**
 - A Messages.
 - B Queues.
 - ◆ **WhatsApp Authentication Section:**
 - Same WhatsApp session as their assigned Moderator.
 - Users can view and manage the same session, including re-authentication.
 - Components are identical to the Moderator section:
 - Session Status.
 - Authenticate Button.
 - Timestamp.
 - Toast Alerts.
 - ◆ **Editable Account Info:**
 - Same details as that in ‘Admin View’.

- **Remaining Options View (based on role):**
 - ◆ **Top:**
 - Title (e.g., "Moderators").
 - Count (e.g., “4 Moderators”).
 - ◆ **Buttons:**
 - Add User.
 - Edit User.
 - Delete User (with confirmation).
 - ◆ **User Table Columns:**
 - **User ID** (Auto-incremented, non-editable).
 - **Full Name.**
 - Username.
 - **Appears Only for Users table.**
 - Moderator:
 - Displays assigned moderator.
 - **Appears Only for Moderators table.**
 - Remaining Quota:
 - Shows:
 - ◆ No. of messages.
 - ◆ No. of queues.
 - WhatsApp Session Status:
 - Whether Connected or Disconnected.

- Last Authenticated Timestamp:
 - Contains last time WhatsApp authentication is done (e.g., 2025-07-22 08:45 AM).
- Actions:
 - **Manage Quota:**
 - **Only for Moderators table.**
 - Managed by **Admins only**.
 - Opens a modal showing:
 - ◆ Moderator Name.
 - ◆ Dropdown or radio button: Select "Messages" or "Queues".
 - ◆ Input field: Amount to add.
 - Admins can **add quota only** (including negative values to correct overuse).
 - Total Consumed & Total Remaining will appear here (as in moderator view).
 - **Edit** (Username, Full Name, Reset Password).
 - **Delete** (with confirmation).

❖ Use Cases

Use Case ID	Title	Actor	Description
UC-01	Add Queue	Moderator	Add a new queue (doctor) using '+' button in Queues panel.
UC-02	View Queue Patients	User / Moderator	Click on a queue to display all associated patients.
UC-03	Add Patient Manually	User / Moderator	Enter patient name and phone manually. Patient ID is auto-generated and editable.
UC-04	Upload Patient List	User / Moderator	Import patient data from a predefined Excel format with preview before adding.
UC-05	Edit Patient	User / Moderator	Modify patient data (name and phone) via the edit button.
UC-06	Delete Patient	User / Moderator	Delete individual patient record with confirmation.
UC-07	Delete Multiple Patients	User / Moderator	Bulk delete selected patients via checkboxes and confirmation.
UC-08	Message Selection	User / Moderator	Choose a default message and configure up to 5 conditional rules mapped to different templates.
UC-09	Send Messages	User / Moderator	Preview message assignments and send to selected patients.
UC-10	Add Message Template	User / Moderator	Create new message templates with title and description.
UC-11	Edit Message Template	Moderator	Edit any existing template.
UC-12	Delete Message Template	Moderator	Remove any message template with confirmation.
UC-13	Add Secondary Admins & Moderators	Primary Admin	Create new secondary admins and moderators. Assign quotas and privileges.
UC-14	Add Moderators	Primary / Secondary Admin	Create moderators and set their quotas.
UC-15	Add Users	Moderator	Add new users under the moderator's authority.
UC-16	Manage Quota	Primary / Secondary Admin	Adjust message and queue quotas for moderators. Allows increasing/decreasing limits.
UC-17	View Quota Summary	Moderator / User	View current usage and remaining quota for messages and queues.
UC-18	WhatsApp Session Authentication	Moderator / User	Scan QR code to establish or re-authenticate WhatsApp session. Shared per moderator.
UC-19	Show Session Status	Moderator / User	View WhatsApp session status and last authenticated timestamp.
UC-20	Receive Session Disconnect Alerts	Moderator / User	Receive toast alert in Dashboard and Queue View when session is disconnected.
UC-21	Background Session Health Monitoring	System (Auto)	Background checker validates WhatsApp session health and notifies user/moderator on failure.
UC-22	Edit Account Information	All Users	Edit own full name, username, and password.
UC-23	Change Password	All Users	Use 3-field form: current password, new password, confirm new password.
UC-24	View and Manage Users	Admins / Moderator	View, add, edit, and delete users based on role privileges and hierarchy.
UC-25	View WhatsApp Session in User Table	Primary / Secondary Admin	View session status and last authenticated timestamp for each moderator.
UC-26	Shared Session Control via User	User / Moderator	Initiate or re-authenticate the WhatsApp session that belongs to their assigned moderator.