

# 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.
- **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.

- **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.**

### ➤ 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.

### ➤ 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.

### ➤ 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**".

### ➤ 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.

### ➤ Queue Details Panel (Right Panel):

- **Three-Tab Navigation:**
  - **Main Dashboard**.
  - **Ongoing Tasks**.
  - **Failed Tasks**.

- **Main Dashboard:**

- ◆ Queue Header:
  - Doctor's name.
  - Total number of patients.
  - Toast Alerts & Notifications (WhatsApp Session Status).

- ◆ 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**.

◆ **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.

◆ 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).

• **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**".

• **Failed Tasks:**

◆ A "**Retry {x} Selected**" button above the table.

◆ Same table structure as "Ongoing Tasks".

➤ **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).

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