User Guide – Hospital E-Prescription System

1. Starting the Application

1. Make sure:
   - MySQL is running and `hospital_rx` database is created from `schema.sql`.
   - `Database.java` has correct URL, username, and password for your MySQL.
   - The MySQL Connector/J JAR is on the classpath.
1. Run the app (example command):

```
java -cp "out/production/e-Prescription System:/path/to/mysql-connector-j.jar"
com.hospitalrx.Main
```

You will see the Login window.

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2. Login & Signup

2.1 Login

1. Enter:
   - Username
   - Password
1. Click Login.
1. If credentials are valid, you'll be taken to a screen based on your role:
   - Doctor → Doctor Workspace
   - Pharmacist → Pharmacist Console
   - Patient → Patient View

Demo users created by `schema.sql`:

- Doctor: `doctor01` / `doctor01`
- Pharmacist: `pharm01` / `pharm01`
- Patient: `patient01` / `patient01`

2.2 Sign Up as a New User

1. On the Login window, click Sign Up.
1. In the Sign Up dialog fill in:
   - Full Name

- Username
- Password
- Role (Doctor, Pharmacist, or Patient)

1. Notes:
    - The top option in the Role dropdown is blank; you must choose a role.
    - All fields, including role, must be filled.
    - If the username already exists, you'll see an error.
1. Click Create Account.
1. If successful, you'll see a confirmation message; close the dialog and log in with the new credentials.

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3. Doctor Module – Creating Prescriptions

After logging in as a Doctor:

3.1 Screen Layout

- Top area:
    - Select Patient: a dropdown listing registered patients.
    - Notes: a text area for general notes (optional).
- Middle left – "Add Medicine" panel:
    - Medicine dropdown listing medicines from inventory with remaining stock.
    - Quantity spinner.
    - Dosage Instructions text field.
    - Add button to add the item to the prescription.
- Middle right – "Prescription Items" panel:
    - List of medicines you've added.
    - Remove Selected button.
- Bottom:
    - Save Prescription button
        - If you cannot see it, maximize or increase the height of the window.

3.2 Creating a Prescription

1. Select Patient from the dropdown (required).
1. In Add Medicine:
    - Choose a Medicine.
        - If the stock is zero, you'll get an error and can't add it.
    - Set Quantity (1 up to current stock).

- Optionally type Dosage Instructions.
- Click Add.

1. Repeat step 2 for all medicines you want to add.
1. Optionally enter overall Notes at the top.
1. Click Save Prescription at the bottom.
1. On success:
    - A popup shows a 3-digit Secure Token (e.g., `042`, `789`).
    - Status is stored as PENDING.
    - The token is what the patient shows to the pharmacist.

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4. Patient Module – Viewing Prescriptions (Mobile View)

After logging in as a Patient:

4.1 Screen Layout

- Window size is fixed to about 360×640, simulating a mobile phone screen.
- Top: “Your Prescriptions” label.
- Center: List of prescriptions (tokens and statuses).
    - PENDING prescriptions may be visually highlighted.
- Bottom: Details area with:
    - Status
    - Token
    - Date
    - Items list

4.2 Viewing Prescriptions

1. Log in as a Patient.
1. In the main list, select a prescription.
1. The Details panel shows:
    - Status: PENDING or DISPENSED.
    - Token: 3-digit code to give to the pharmacist.
    - Date: when it was created.
    - Items: each medicine with quantity (and dosage text as part of the item text).

You cannot edit anything as a patient; this view is read-only.

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5. Pharmacist Module – Lookup, Dispense, and Inventory

After logging in as a Pharmacist:You get a window with tabs:

5.1 Tab 1 – Prescription Lookup

- Top:
  - Secure Token text field
  - Lookup button
- Center:
  - Read-only text area showing prescription details once found
- Bottom:
  - Dispense button

5.1.1 Lookup Prescription by Token

1. Ask the patient for their 3-digit Secure Token.
1. Enter the token in the Secure Token field.
1. Click Lookup.
1. If found, you'll see:
   - Token
   - Status
   - Items (medicine name and quantity)
1. If not found, you'll see a message saying so.

5.1.2 Dispense Prescription

1. Perform a Lookup first.
1. If the status is DISPENSED, you'll be notified that it's already dispensed.
1. Otherwise, click Dispense:
   - The system:
     - Re-checks stock and subtracts the quantities from the `medicines` table.
     - Updates the prescription's status to DISPENSED.
   - A popup confirms success.
1. You can re-lookup the same token to verify the status is DISPENSED.

5.2 Tab 2 – Inventory Management

- Top: "Medicine Inventory Management" label.
- Center: Table listing:
  - ID
  - Medicine Name

    - Description
    - Stock
    - Unit
- Bottom: Buttons:
    - Refresh
    - Update Stock

5.2.1 Viewing Inventory

1. Go to the Inventory Management tab.
1. The table automatically loads the current inventory when the pharmacist screen opens.
1. Click Refresh at any time to reload from the database.

5.2.2 Updating Stock

1. In the table, click a row for the medicine you want to update.
1. Click in the Stock cell for that row and edit the number.
1. With the row still selected, click Update Stock.
1. Validation:
    - If the value is not a valid number → you get an error.
    - If the number is negative → you get an error (“Stock cannot be negative”).
1. On success:
    - You get a confirmation message.
    - The table reloads with updated stock.

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6. Error Handling & Tips

- Database errors: If MySQL is down or credentials are wrong, login or any DB operation may show a “DB error: …” message. Fix the DB configuration and retry.
- Username already exists: Shown in Signup when you try to create a user with a duplicate username.
- Validation errors:
    - Signup: All fields, including Role, must be filled.
    - Doctor: You must select a patient and add at least one medicine.
    - Pharmacist inventory: Stock must be a non-negative integer.
- UI visibility:
    - If you can’t see a button (like Save Prescription), maximize or resize the window. The Doctor and Pharmacist UIs are intended for desktop sizes; the Patient UI is intentionally small for “mobile”.

If you tell me your OS screen resolution and how the Doctor window looks on your screen, I can suggest an exact size/placement so the Save Prescription button is always visible.