NOVABYTE TECHNOLOGY

Lab Management System

User Manual

This manual explains how to use every part of Lab Management System: signing in, registering patients, creating test orders, entering results, billing, reports and administration.

It is written for everyone who uses the system day to day: reception staff, laboratory technologists and administrators.

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1. Introduction

Lab Management System is a desktop application for a medical laboratory. Reception staff register patients and create test orders, laboratory staff enter the results, and the system keeps track of billing and produces a branded report for the patient. Everything is stored in one shared database on your lab's own network.

1.1 What the system does

- **Patients** – register patients once with an automatic patient number, search them, and see their order history.
- **Orders** – choose tests from categories, enter a sample ID, apply a discount and save. Each order has an order number.
- **Results** – enter results test by test; save part-way and finish later. Results outside the normal range are shown in red.
- **Billing** – discount by amount or percentage, payment status (Pending, Paid, Partial), printed receipts and "delivered" tracking.
- **Reports** – a printed result report with your lab name, address, phone and logo, or send the report to the patient as a PDF on WhatsApp.
- **Test catalogue** – categories, tests, units, prices and normal ranges, with CSV import.
- **Users and settings** – Admin, Reception and Lab users, and your lab profile.

1.2 Who uses what

Each person signs in with their own user name. The role decides which screens appear in the left-hand menu.

Role	Screens
Reception	Register Patient, New Order, Patient Search, Billing
Lab	Enter Results, Test Categories, Test Management
Admin	Everything above, plus User Management and Settings

1.3 How an order moves through the lab

1 REGISTER
Patient is added or found

2 ORDER
Tests chosen, sample ID entered

3 RESULTS
Entered in the lab (Pending → Partial → Completed)

4 REPORT
Printed or sent on WhatsApp

5 DELIVERED
Marked in Billing

2. Getting started

2.1 Signing in

1. Start **Lab Management System** from the desktop icon or the Start menu.
2. Enter your **Username** and **Password** and press **LOGIN**.
3. Tick **Remember password** if you want this computer to fill in your password next time. Your user name is always remembered. Do not tick it on a shared computer.

> **First time:** a new installation has one user, `admin` with password `admin123`. Change that password straight away (section 2.5), then create a user for each person (section 5.1).

The database status card

Under the sign-in box a card shows whether the lab database can be reached. It must say **Database connected** before you can sign in. If it does not, see section 6 (Several computers). The card has two buttons: **DB SETTINGS** to enter or change the server details, and **CHECK AGAIN** to test the connection again. If the database is missing on a computer that should hold it, an install / repair button appears.

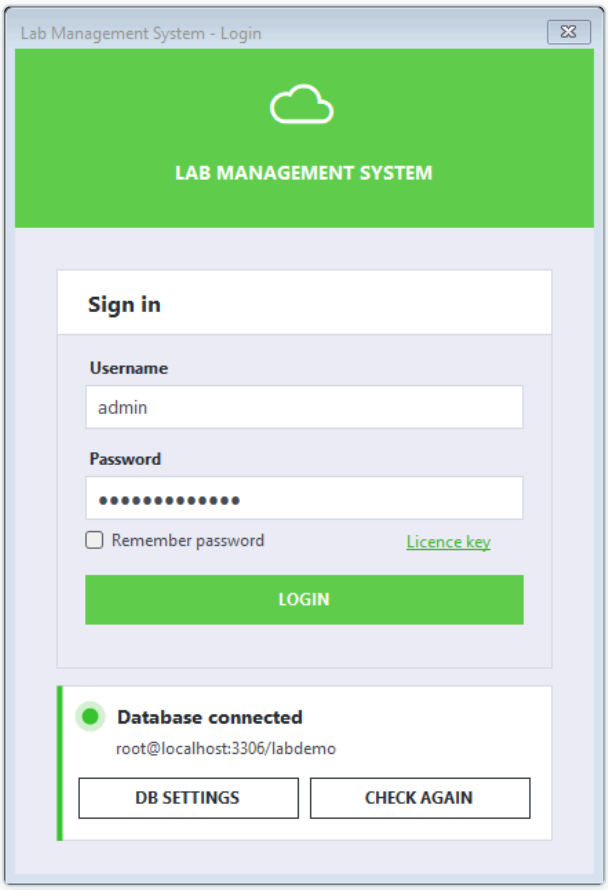


Figure 1 - The sign-in screen with the database status card and the Licence key link

2.2 Licence key

Lab Management System needs a licence key from NovaByte Technology. Lab keys start with `LB-`, for example `LB-7KQ4-M2XD-9HTP-W3RC`.

1. The first time you press **LOGIN** on a computer, the **Activate Lab Management System** window opens.
2. Type or paste your key and press **ACTIVATE**. The computer needs an internet connection for this step.
3. A message confirms the activation. You are not asked again on this computer.

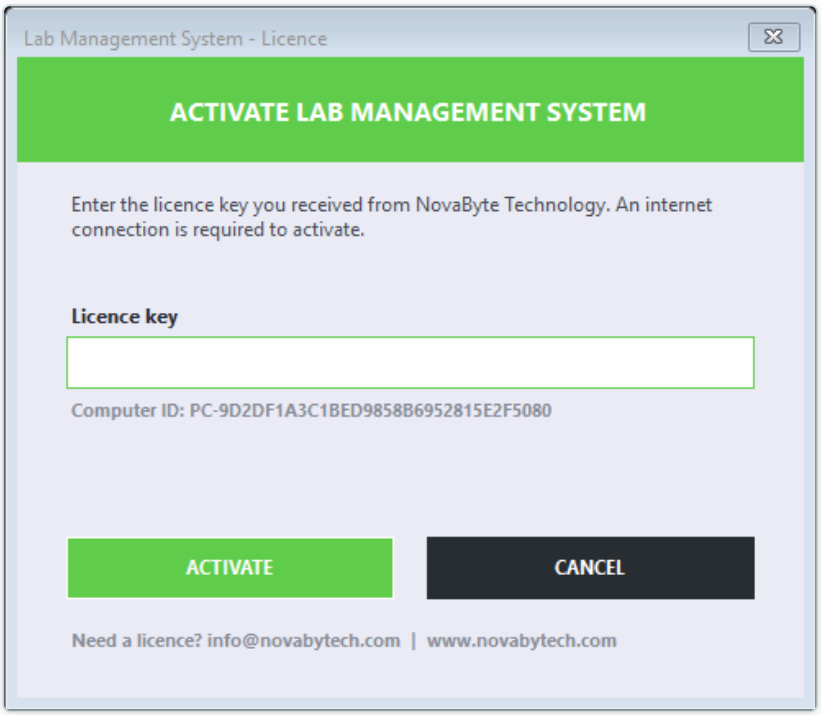


Figure 2 - The licence activation window

- A key is locked to the **first computer** that activates it. The window shows this computer's **Computer ID**. To move a licence to another computer, contact NovaByte Technology.
- Each time you sign in, the licence is checked online. If the internet is down, the app keeps working for up to **7 days** after the last successful check. Connect to the internet at least once in that time.
- To enter a different key later, click **Licence key** on the sign-in screen, next to *Remember password*.
- Keys work in one product only. A key for another NovaByte product (for example NovaPharma, which starts with `NP-`) is refused.

> **Test licences** have an end date. A reminder appears in the last days. When the date passes, sign-in stops with a message; contact NovaByte Technology to continue with a full licence.

2.3 The main screen

- **Top bar (green)** – your lab's logo and name on the left, a **search box** in the middle, and your name on the right with a menu for **Change password** and **Logout**.

- **Menu (dark, left)** – the screens your role can use. Click one to open it.
- **Page title strip** – shows the name of the current page and a short hint. A back arrow returns to the previous page.
- **Search box** – type a name, patient number, phone number or order number and press Enter. It opens Patient Search (or Enter Results for lab-only users) with your text filled in.

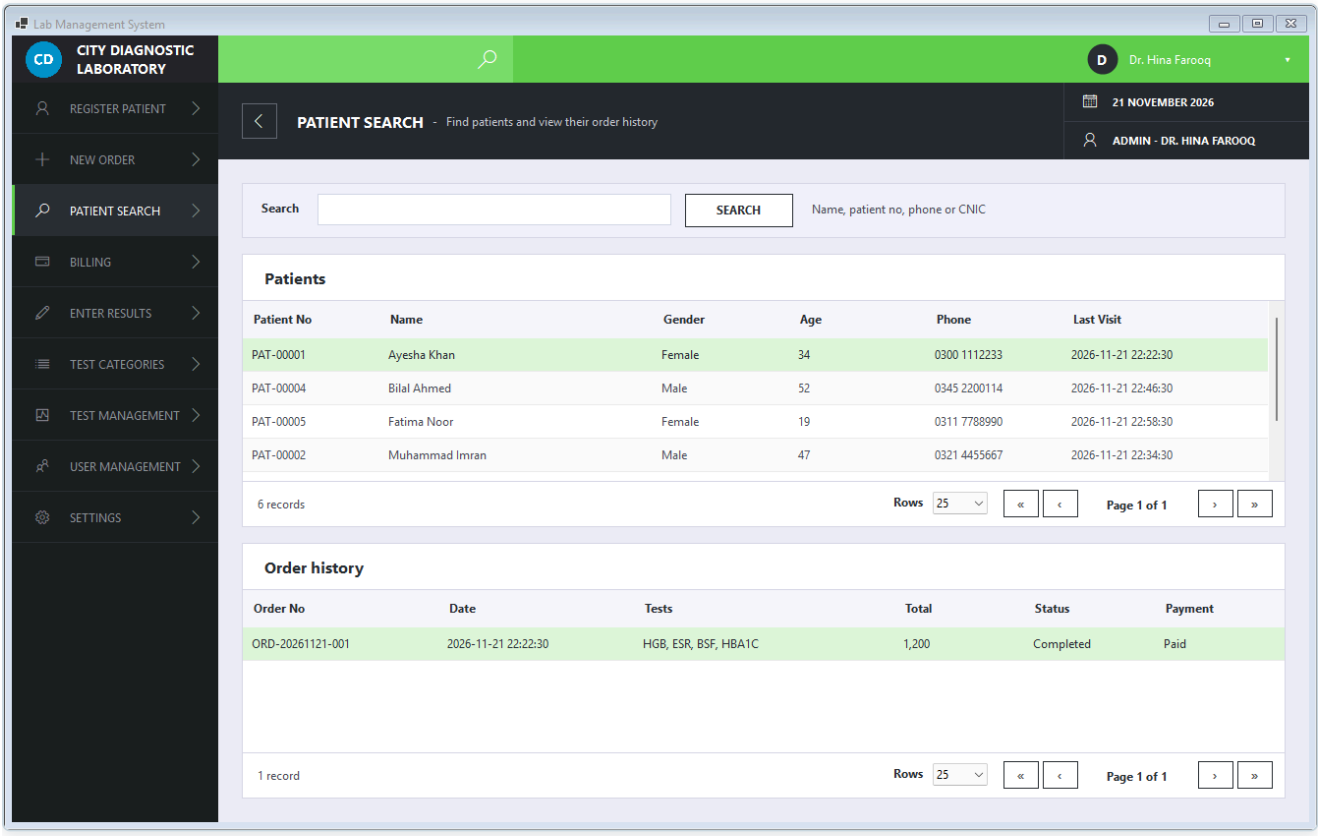


Figure 3 - The main screen: top bar with search and user menu, the menu on the left, and the page title strip

2.4 Logging out

Open your name menu at the top right and choose **Logout**. The sign-in screen appears again for the next person.

2.5 Changing your password

1. Open your name menu → **Change password**.
2. Enter your current password, then the new password (at least 6 characters) twice, and press CHANGE PASSWORD.

If you had ticked **Remember password**, the remembered password is updated too.

3. Reception

Reception users (and Admins) see Register Patient, New Order, Patient Search and Billing.

3.1 Register Patient

Use this page to add and edit patient records. The lower half lists existing patients.

Field	Notes
Full name	Required.
Father name	Optional.
Phone	Choose the country code from the drop-down (your default country is set in Settings), then type the number. Tick **Change country code** to pick a different code for one patient. The phone number is needed to send reports on WhatsApp.
Gender	Male, Female or Other.
Age	A whole number of years.
CNIC	Optional national ID number.
Address	Optional.

1. Fill in the form and press **SAVE PATIENT**. The patient gets a number such as `PAT-00001` and a confirmation message shows it.
2. To edit a patient, click their row in the list. The form shows *Editing PAT-…*; change the details and save. Press **NEW / CLEAR** to start a new record.
3. Use the **Search** box above the list to filter by name, number, phone or CNIC.

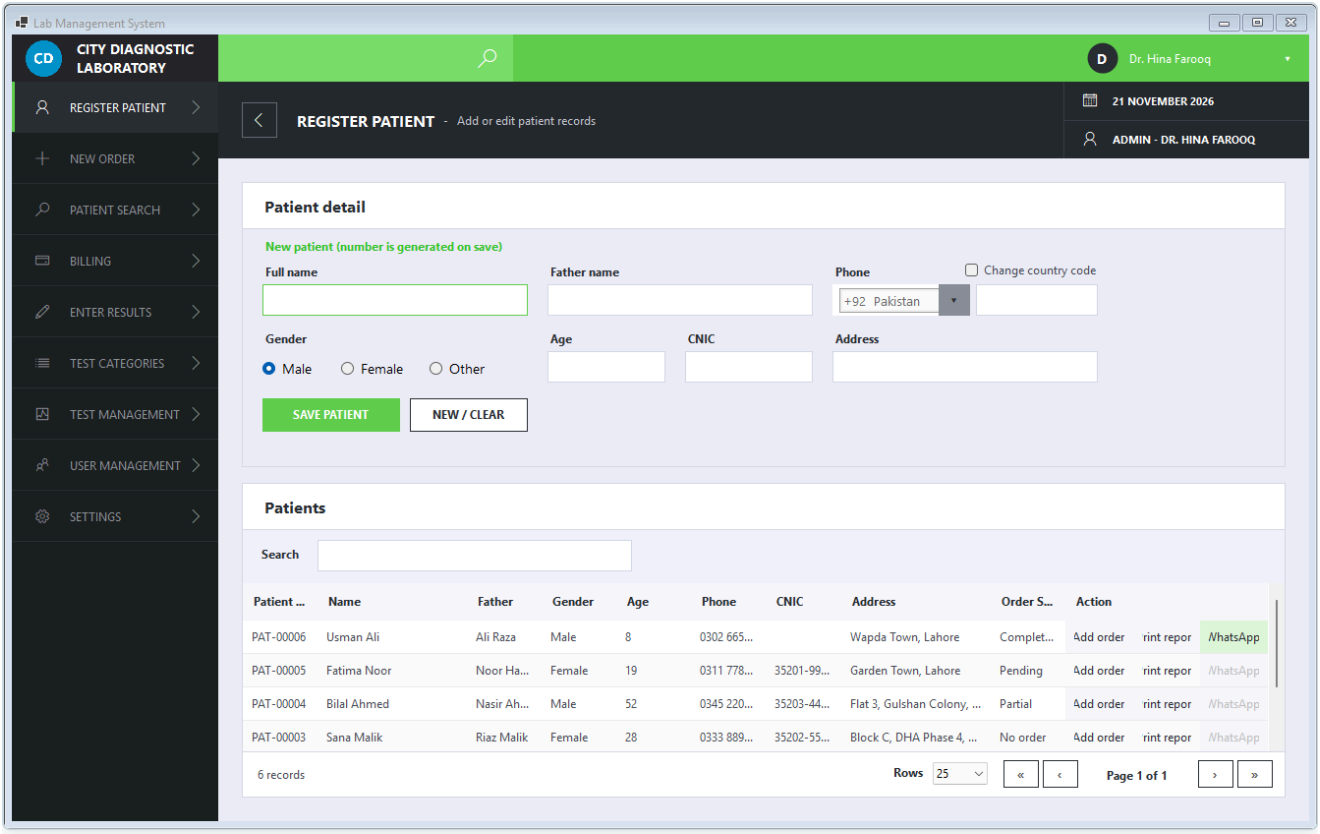


Figure 4 - Register Patient: the form on top, the patient list below

Buttons on each patient row

Button	What it does
Add order	Opens New Order with this patient already selected.
Print report	Opens a print preview of the report for the patient's latest order that has results. If there are no completed results yet you are told so.
WhatsApp	Sends the report PDF on WhatsApp (see section 3.5). It is greyed out until the patient's latest order is Completed or Delivered.

3.2 New Order

1. **Choose the patient.** Type part of the name, number or phone in **Search patient** and press SEARCH, then pick the patient from **Select patient**. For a new patient press + NEW PATIENT, enter the full name, gender, age and phone, and save; the patient is selected for you.
2. **Choose the tests.** The **Available tests** list groups tests by category, each with its price. Tick the tests the patient needs. They appear in the **Order** list on the right with their prices.
3. **Sample ID.** Enter the sample ID once; it applies to every test in the order. You may leave it empty at reception and let the lab enter it (results cannot be saved without one).
4. **Discount and payment.** Enter any discount and set **Payment status** (Pending, Paid or Partial). The summary shows the number of tests, the total, and the **Net** amount.

5. Press **SAVE ORDER**. The order gets a number such as `ORD-20261119-001` (date and a daily sequence). Press **CLEAR** to start over without saving.

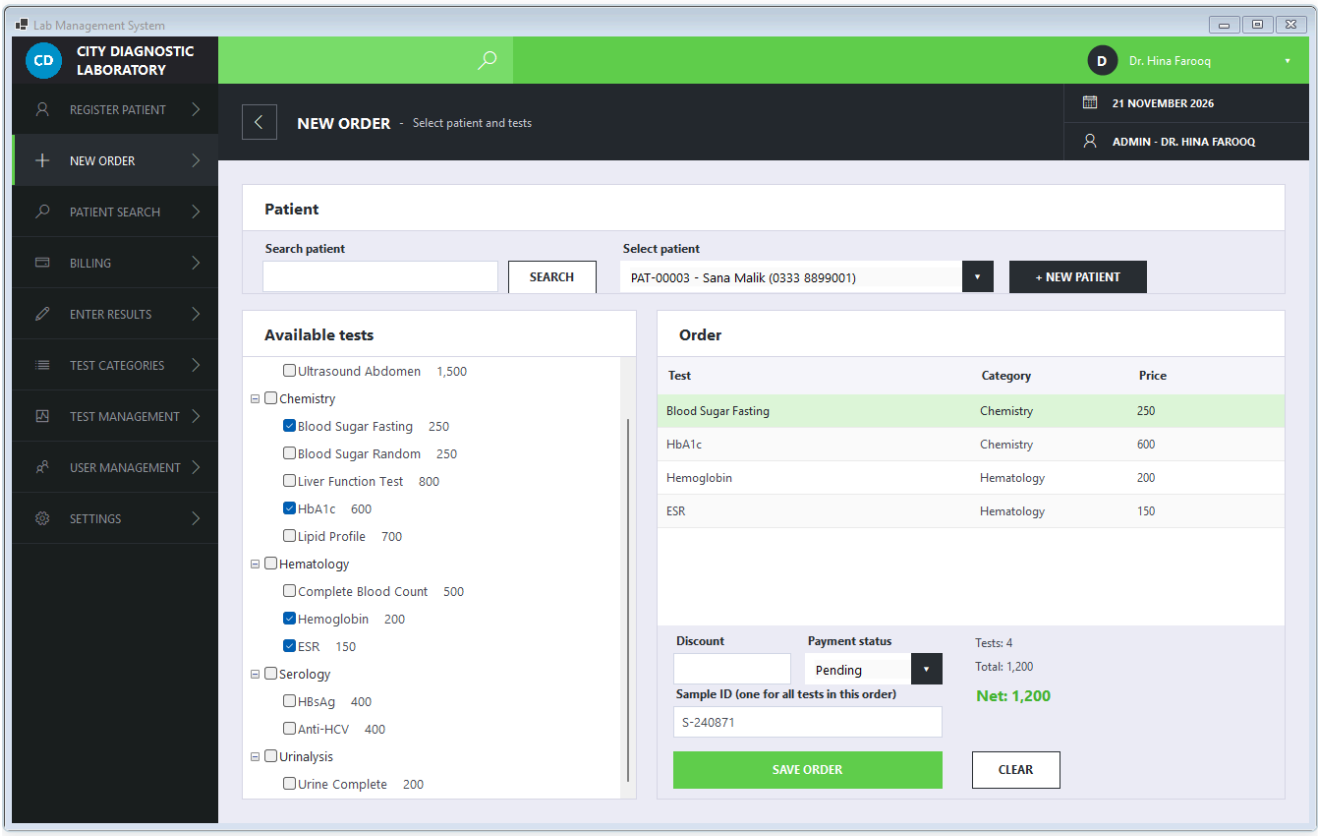


Figure 5 - New Order: patient, tests grouped by category, the order summary and the sample ID

> You can also start an order from **Register Patient** or **Patient Search** results; the patient is already selected.

3.3 Patient Search

Type a name, patient number, phone number or CNIC (or press **SEARCH**). The patient list shows number, name, gender, age, phone and **Last Visit**. Select a patient (or double-click) to see their **Order history** underneath: order number, date, tests, total, status and payment.

3.4 Billing

Billing is where you settle an order, print the receipt and mark it delivered.

1. Search by order number, patient name, patient number or phone and select the order. Its tests and prices appear under **Order items**.
2. In the **Payment** card enter the **Discount**. Choose **Type**: *Amount* or *Percent %*. The **Net** amount updates as you type.
3. Set **Payment status** to *Pending*, *Paid* or *Partial* and press **SAVE BILLING**.
4. Press **PRINT RECEIPT** to preview and print a receipt with your lab's header, the tests, the total and net amount.

5. When the patient has collected the report, press **MARK DELIVERED**. This works only when all results are entered (status Completed); otherwise you are told the results are not complete yet.

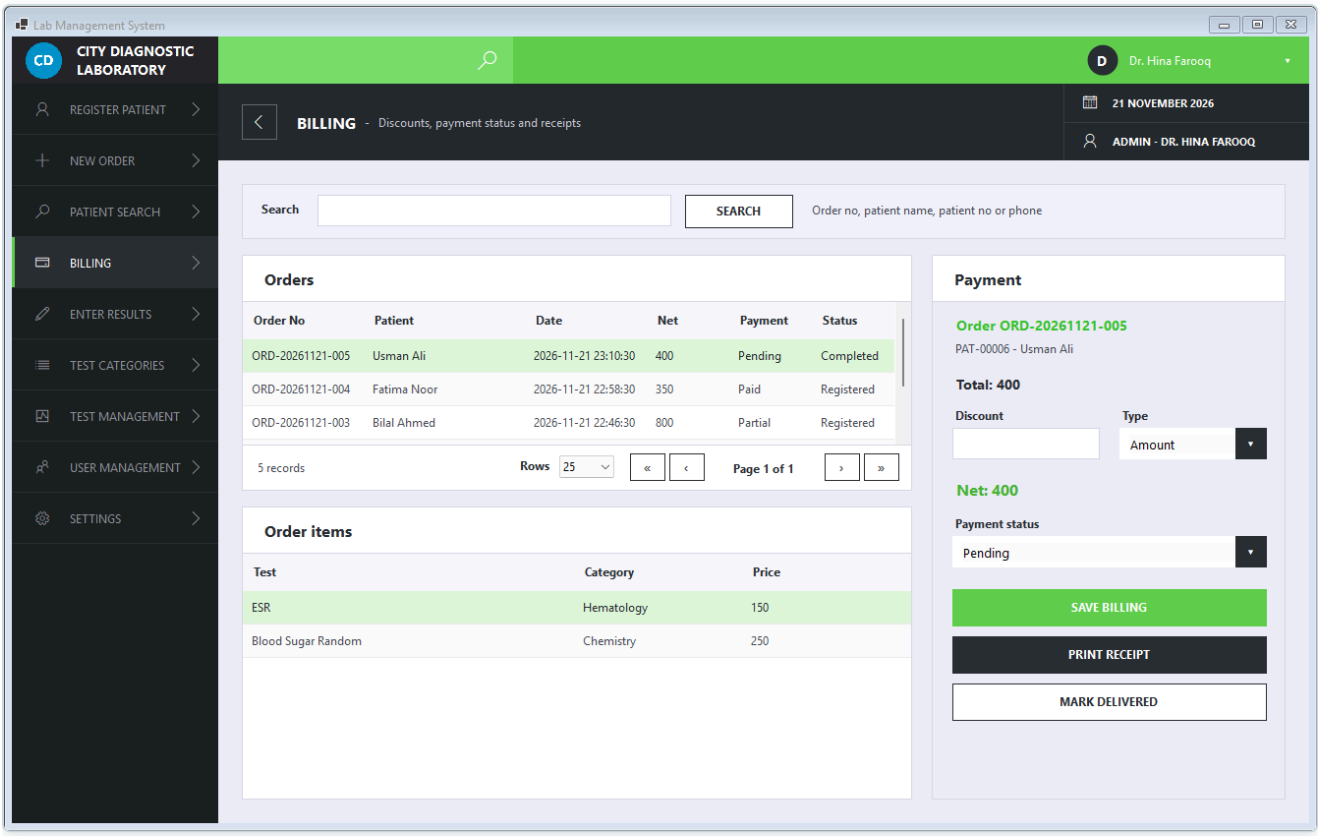


Figure 6 - Billing: orders, items, discount, payment status, and the receipt and delivery buttons

3.5 Giving the report to the patient

Print

On **Register Patient**, press **Print report** next to the patient. A preview opens; print it on any printer, or choose *Microsoft Print to PDF* to save a copy. The report carries your lab name, address, phone and logo, the patient's details, the results with units and normal ranges, and your thank-you note.

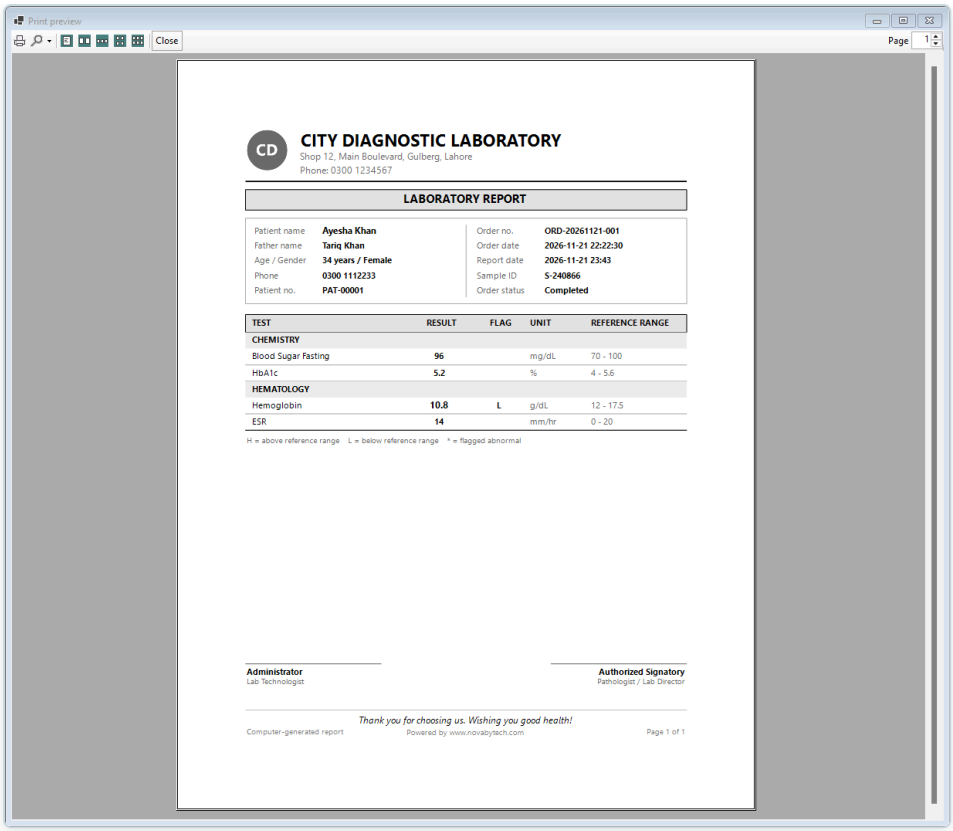


Figure 7 - The print preview of a laboratory report (abnormal results carry an L or H flag)

WhatsApp

1. Make sure the **WhatsApp desktop app** is installed and signed in on this computer, and that the patient has a valid phone number.
2. Press **WhatsApp** next to the patient. The app creates the report PDF in `Documents\LabReports` (it uses Windows' built-in *Microsoft Print to PDF* printer).
3. Confirm the message that appears. WhatsApp opens the patient's chat with a ready-made message and the PDF attached.
4. Wait a few seconds without touching the keyboard or mouse. When the attachment preview appears, press **Enter** (or **Send**).

If WhatsApp says the number is not on WhatsApp, that phone has no account or the number on file is wrong. If *Microsoft Print to PDF* is missing, enable it in Windows: Settings → Optional features → More Windows features → Microsoft Print to PDF.

4. Laboratory

Lab users (and Admins) see Enter Results, Test Categories and Test Management.

4.1 Enter Results

The order list

The list shows every order with its order number, patient, **Sample ID**, date, **Results** progress (for example *2 / 5* = results entered / tests ordered) and **Status**.

- **Search** by name, patient number, phone, order number or sample ID.
- **Status** filter: All, Pending (no results yet), Partial (some results entered), Completed (all entered) or Delivered.
- The button at the end of each row says **Enter results** (Pending), **Continue** (Partial) or **View / edit** (Completed or Delivered). Double-clicking a row also opens it.

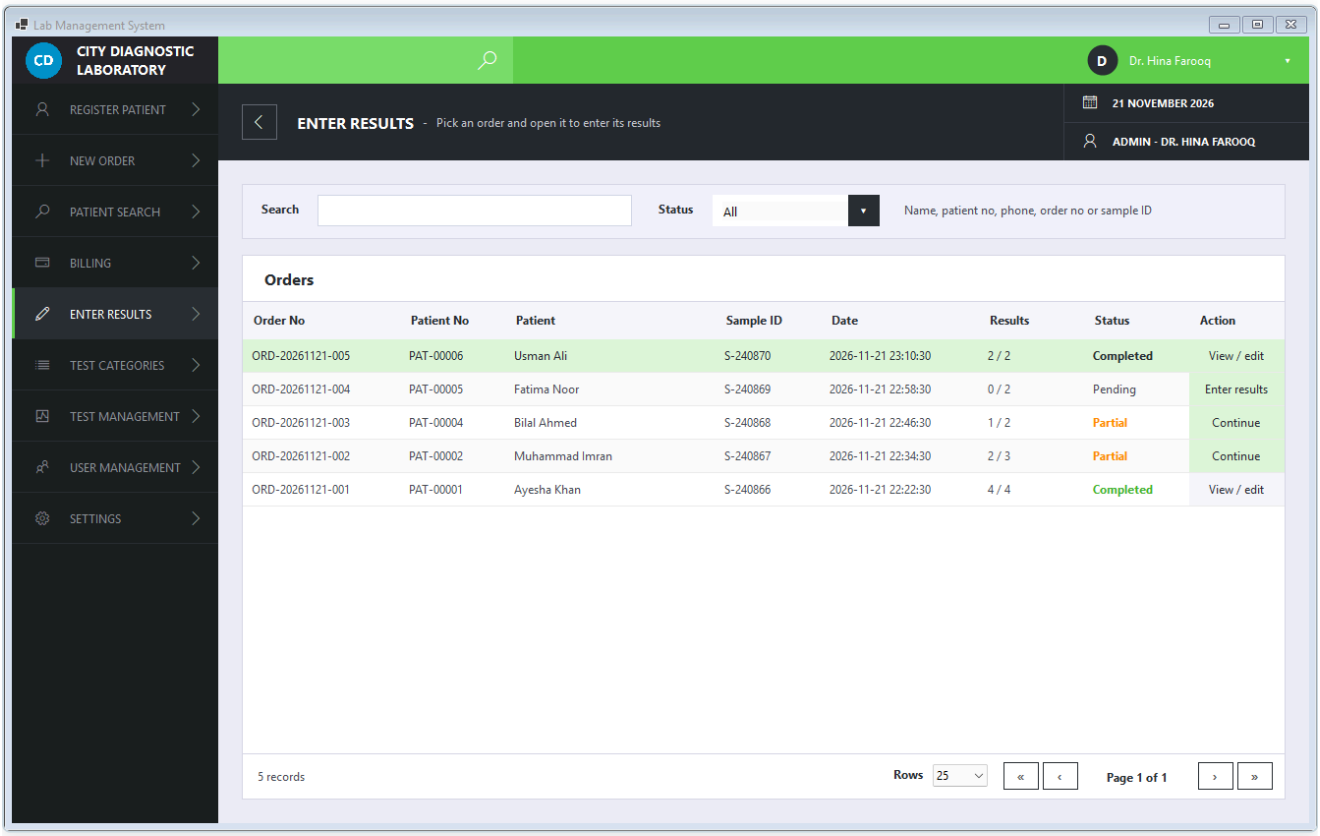


Figure 8 - The Enter Results list with status, progress and the action button

Entering results

1. Open the order. The top shows the patient, age and gender, and order details, a progress bar and *Results entered: x of y*.
2. Enter the **Sample ID** if it is not already there. It applies to every test in the order and must be filled in before results can be saved.

3. In **Tests in this order**, type each value in the yellow **Result** column. The **Unit** and **Normal Range** are shown beside it. Results outside the normal range turn **red**. Qualitative tests (for example *Non-reactive*) are compared with their normal text.
4. Press **SAVE RESULTS**. You can save part-way: blank results stay *To enter* and the order shows as **Partial**. When every result is entered, the order becomes **Completed**.
5. Press **BACK TO LIST** to return.

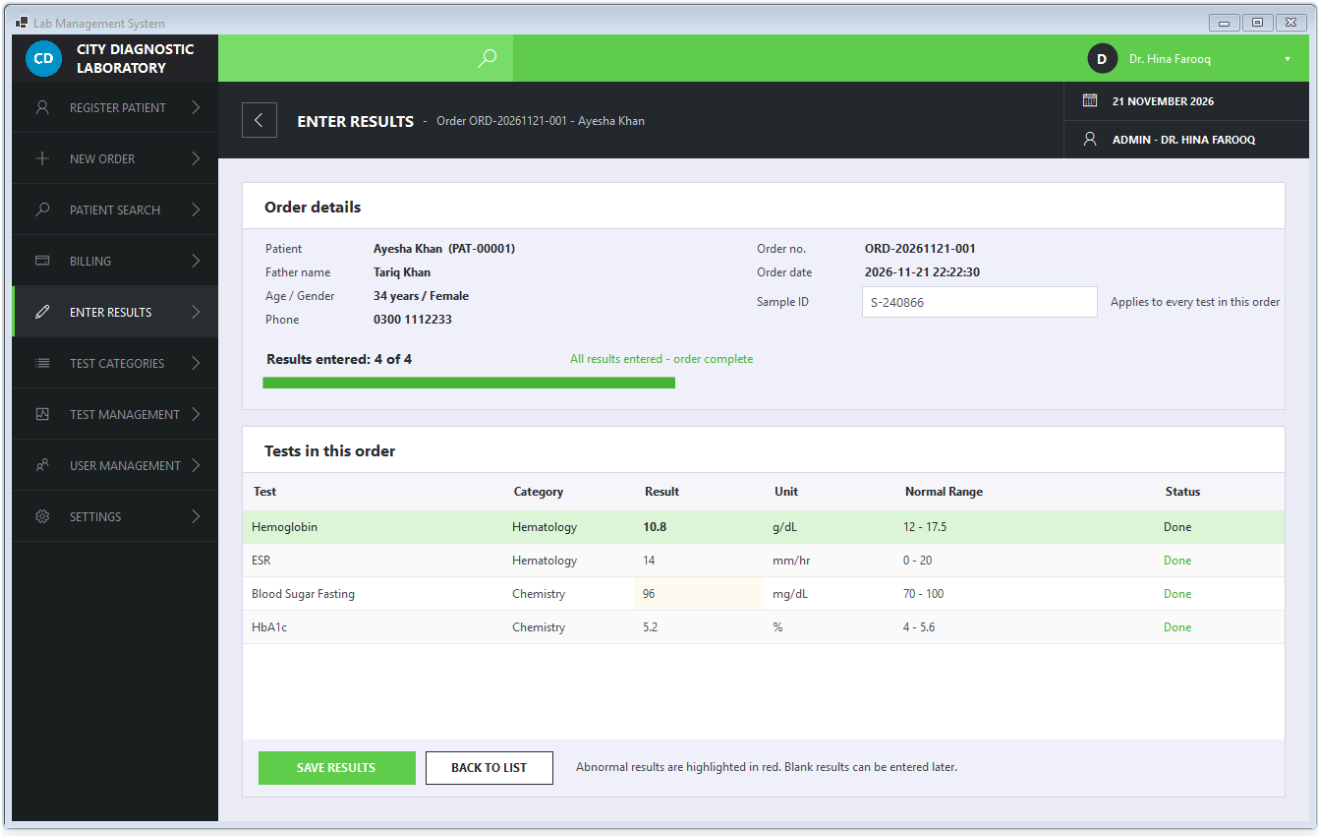


Figure 9 - Entering results for one order (abnormal values are shown in red)

> Typing a result changes the row to *Done* straight away, and the line at the bottom shows *Unsaved changes* until you save. Leaving the page with unsaved changes asks you first.

4.2 Test Categories

Categories are your lab's departments (a new installation includes Radiology, Pathology, Chemistry, Hematology, Microbiology, Serology and Urinalysis).

- Fill in **Name** (required, must be unique), **Description** and **Sort order**, then press **SAVE**. Click a category in the list to edit it, or press **NEW** for a new one.
- **DELETE** removes the selected category. A category that still contains tests cannot be deleted; move or remove its tests first.

4.3 Test Management

This page holds the test catalogue: every test you offer, its price and its normal range. Filter the list by category or search by name or code.

Field	Notes
Category	Required. Create categories first.
Test name / Test code	The name is required. The code is a short unique code such as CBC or LFT.
Unit	Pick a unit (mg/dL, g/dL, mmol/L, U/L, %, mm/hr ...) or type your own.
Normal min / Normal max	For numeric tests. Results below the minimum or above the maximum are flagged red.
Normal text (qualitative)	For tests such as *Non-reactive* or *Negative*. A result that differs from this text is flagged.
Price	Used for order totals.
Active	Untick to stop offering a test without deleting it.

Press **SAVE** to store a test, **CLEAR** to start a new one, **DELETE** to remove the selected test.

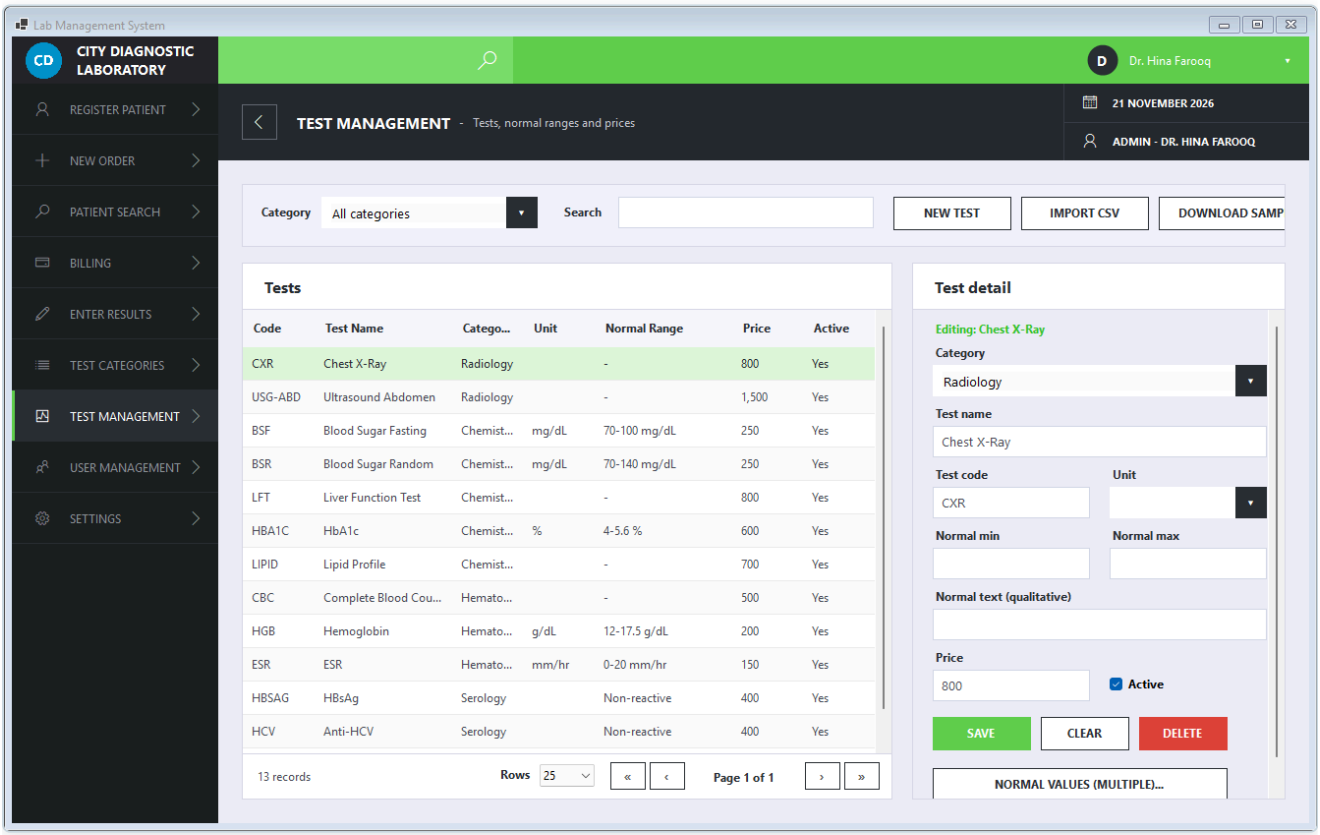


Figure 10 - Test Management: the catalogue and the test form

Tests with several parameters

A test such as a complete blood count has many parameters (haemoglobin, WBC, platelets …). Save the test, then press **NORMAL VALUES (MULTIPLE)…**. In the window, add one row per parameter with its unit and normal minimum / maximum, or normal text; set **Gender** to Male or Female when the range differs. Press **SAVE**. The test then shows how many parameters it has.

Import tests from a CSV file

1. Press **DOWNLOAD SAMPLE** and save `tests_sample.csv`. Open it in Excel.
2. Replace the sample rows with your tests (columns in section 8.4) and save as CSV.
3. Press **IMPORT CSV** and choose the file. If any row has a problem, nothing is imported and the problems are listed so you can fix them. Otherwise a summary shows how many tests were added or updated.

> Rows that share a **TestCode** belong to the same test. Category, test name and price are read from its first row; the other rows add parameters. Close the file in Excel before importing.

5. Administration

Only Admin users see **User Management** and **Settings**.

5.1 User Management

1. Enter **Username** (must be unique), **Full name**, **Password** and choose a **Role**: Admin, Lab or Reception. Keep **Active** ticked.
2. Press SAVE. Press NEW to add another user.
3. To change a user, click them in the list. Leave the password empty to keep the current one. Untick **Active** to stop someone signing in without deleting their history.

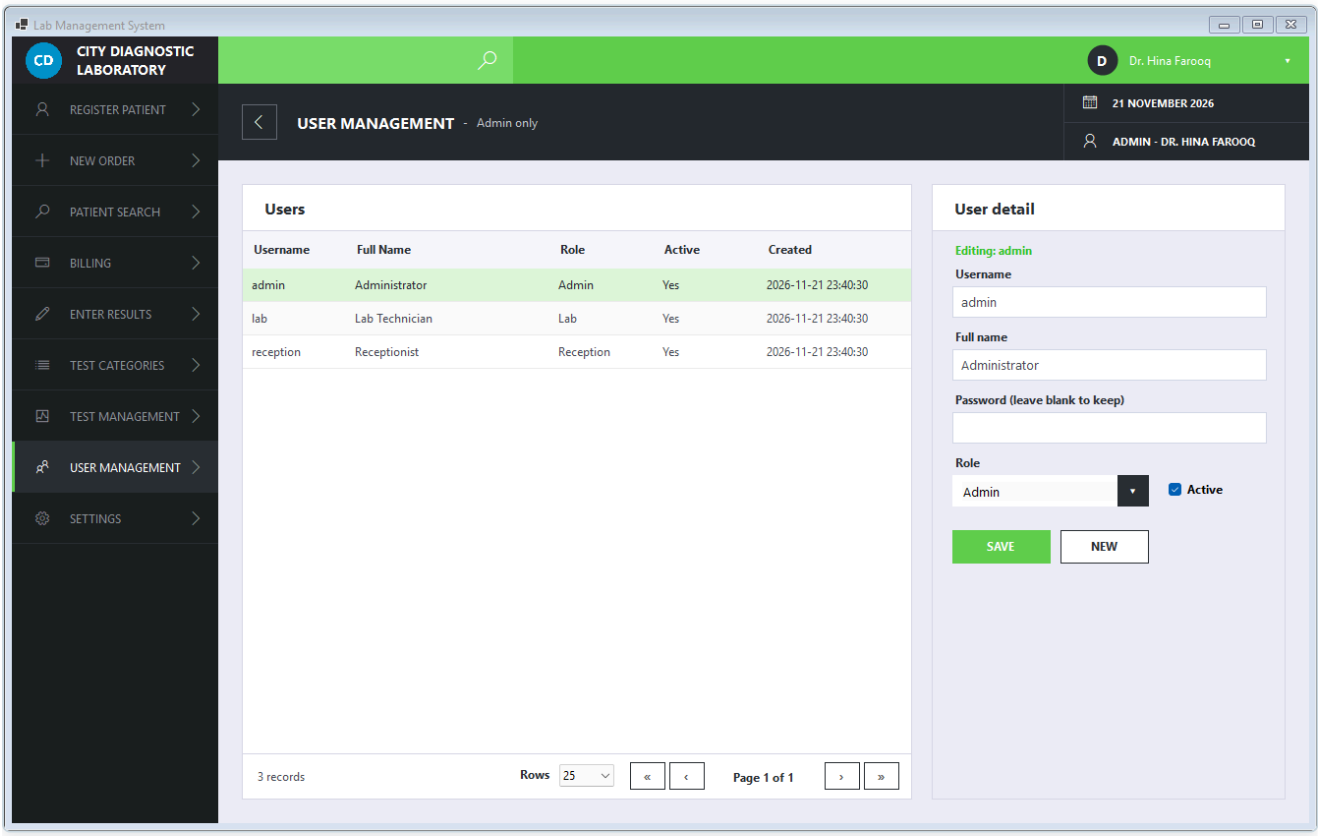


Figure 11 - User Management

> You cannot deactivate or demote your own account, so there is always an Admin who can sign in.

5.2 Settings

Your lab profile is shown in the top-left of the main screen and on printed reports and receipts.

Setting	Notes
Lab name	Required.

Address, Phone number	Printed in the header of reports and receipts.
Thank-you note	Printed in the footer. The footer also prints "Powered by www.novabytech.com".
Default country	The phone code used for new patients and for WhatsApp, so a local number such as 0300… becomes an international number.
Logo	Press **UPLOAD LOGO** and pick a PNG, JPG, BMP or GIF image. **REMOVE** deletes it.

Press **SAVE SETTINGS** to apply. Changes appear immediately in the top bar.

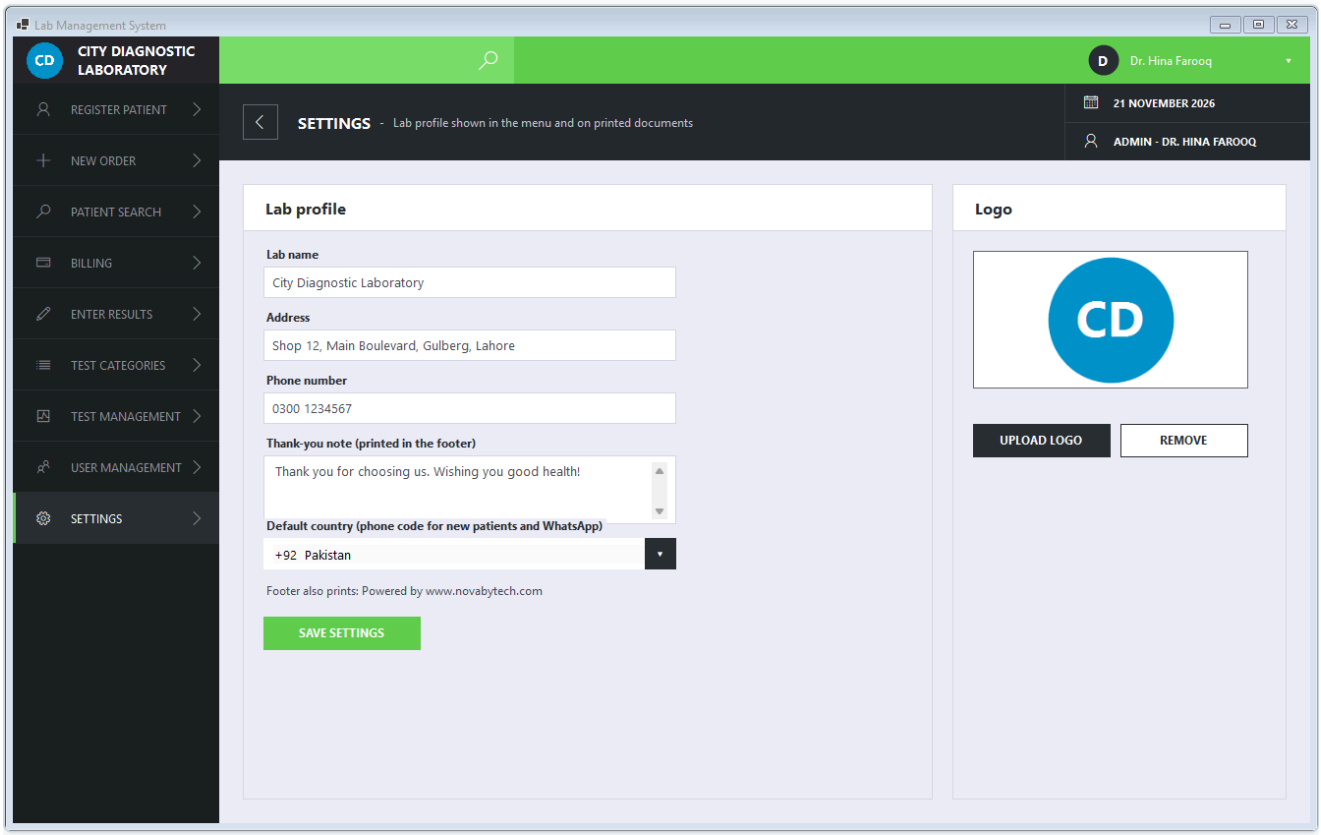


Figure 12 - Settings: lab profile and logo

6. Several computers

All computers in the lab share **one database**, which lives on one computer called the **server**. The other computers are **workstations**. The installer asks which kind each computer is.

Computer	What to do
Server	Run the installer and choose **Lab SERVER** (on one computer only). Setup installs the database, creates the lab database and login, and opens the firewall for your local network. Keep this computer switched on while the lab works. A summary window shows the details other computers need; write them down.
Workstation	Run the installer and choose **WORKSTATION**. Start the app, click **DB SETTINGS** on the sign-in screen and enter the server details below.

Database setting	Value
Server	The server's fixed IP address or computer name (for example 192.168.1.10)
Port	3306
Database	labdb
User	labuser
Password	The password from the server's setup summary

- The server's login is saved on the server computer. On it, **DB SETTINGS** → **Load saved login** shows the details again.
- Give the server a **fixed IP address** (or a reservation on your router). If it changes, workstations lose the connection.
- Each computer is activated separately with its own licence key (section 2.2).
- The full step-by-step guide is on the website: novabytech.com/installation-guide-lab.html

7. Tips and troubleshooting

Problem	What to do
Sign-in screen says *Database not connected*	Check that the server computer is on. Press **CHECK AGAIN**. In **DB SETTINGS** compare server, port, database, user and password with the server's setup summary. On the server, the Start menu item **Set Up Database Server** repairs the database and the firewall rule.
It worked yesterday, now it cannot connect	The server's IP address probably changed. Give the server a fixed IP, or enter its computer name instead of the IP.
"This licence key is for NovaPharma …"	You entered a key for another product. Use the key that starts with `LB-`.
"This licence is already activated on another computer"	A key is locked to one computer. Contact NovaByte Technology to move it.
"Your test licence has ended" / "account is inactive"	Contact NovaByte Technology to continue.
"Cannot reach the licence server"	The computer has no internet. Within 7 days of the last successful check you can still sign in. Otherwise connect once and sign in again.
"Enter the Sample ID for this order before saving results"	Type the sample ID at the top of the result page. It applies to the whole order.
The WhatsApp button is grey	The patient's latest order is not Completed yet. Enter the remaining results.
Import CSV says nothing was imported	Read the listed problems, fix those rows, and import again. Close the file in Excel first.
A category cannot be deleted	It still contains tests. Move or delete the tests first.

Good habits

- **Back up the database** regularly. On the server it is in `C:\ProgramData\LabManagementSystem\data`. It is kept when you upgrade or uninstall the app. Copy it to an external drive and test restoring it.
- Give every person their own login and a strong password; do not share the `admin` account.
- Never forward the database port (3306) on your router or expose it to the internet.
- Keep the date and time on every computer correct; order numbers and reports use it.

8. Quick reference

8.1 Order status

Status	Meaning
Pending	The order is saved; no results entered yet.
Partial	Some results are entered; the rest are still to enter.
Completed	Every result is entered. The report can be printed or sent.
Delivered	Marked in Billing after the patient collected the report.

8.2 Payment status

Status	Meaning
Pending	Nothing paid yet.
Partial	Part of the net amount is paid.
Paid	Paid in full.

8.3 Numbers and files

Item	Format / location
Patient number	`PAT-00001`, `PAT-00002` …
Order number	`ORD-YYYYMMDD-NNN` (date and a daily sequence)
Report PDFs for WhatsApp	Documents\LabReports
Database (server)	C:\ProgramData\LabManagementSystem\data
Saved database login (server)	C:\ProgramData\LabManagementSystem\dbinfo.txt

8.4 CSV columns for importing tests

Column	Notes
Category	Category name (first row of each test).
TestCode	Unique code. Rows with the same code belong to the same test.
TestName	Test name (first row of each test).

Price	Price (first row of each test).
Parameter	Parameter name for multi-parameter tests; leave empty for a simple test.
Gender	Any, Male or Female (for parameter rows).
Unit	Unit of measurement.
NormalMin, NormalMax	Numeric normal range.
NormalText	Normal text for qualitative results, e.g. *Non-reactive*.

8.5 Roles and screens

Screen	Reception	Lab	Admin
Register Patient, New Order, Patient Search, Billing	✓	–	✓
Enter Results, Test Categories, Test Management	–	✓	✓
User Management, Settings	–	–	✓
Change password, Logout	✓	✓	✓

9. Getting help

NovaByte Technology provides installation, training and support for Lab Management System.

Email	info@novabytech.com
WhatsApp	+92 301 8816770
Website	www.novabytech.com
Installation guide	novabytech.com/installation-guide-lab.html

When you contact us, please tell us your lab name, your licence key (`LB-…`), the version of the app, and what you were doing when the problem appeared. A photo of any message on the screen helps a lot.