

PROJECT ABSTRACT

Diagnostic Lab Report Download Portal

A patient portal for diagnostic labs with secure signed-PDF report downloads, reference-range result views, trend charts and a staff release console. Built-to-order with source code, database, report, PPT and viva kit.

01. Title

Diagnostic Lab Report Download Portal — a built-to-order web application where patients download digitally signed lab reports, view results against reference ranges, and staff release verified reports through a controlled queue.

02. Introduction / Background

Patients still collect lab reports as paper printouts or wait for a WhatsApp photo from the lab. Paper gets lost, photos are unreadable, and there is no way to see how a value changed since the last test. This project builds a proper report portal. Patients log in with their hospital ID and see every report as a downloadable, digitally signed PDF; inside the portal each test result is shown against its reference range with a visual marker, and key values are charted across visits. On the staff side, technicians import analyser output, the system flags out-of-range and critical values, a pathologist verifies, and only then is the report published. Sharing with a doctor happens through expiring secure links, not forwarded PDFs. The project is scoped honestly: it is a document-delivery and workflow system, not a diagnostic tool — it shows results and never interprets them.

03. Problem Statement

Labs lose patient trust to lost printouts, unreadable WhatsApp photos and no historical view of results, while staff juggle verification over phone calls and paper. The project addresses this with a controlled release pipeline — import, flag, verify, publish — and a patient library of signed PDFs with reference-range context and trend charts, keeping the lab, the patient and the doctor on the same page.

04. Objectives

- Provide a patient report library with date-wise listing, flag summaries and signed-PDF downloads.
- Render each result against its reference range with a visual position marker; highlight out-of-range values.
- Chart key parameters (haemoglobin, HbA1c, cholesterol) across visits.
- Implement a staff release queue: analyser CSV import, auto-flagging, critical-value protocol, pathologist verification.
- Enable expiring, OTP-gated secure links for sharing reports with doctors.
- Let patients raise discrepancy queries routed back to the lab queue.

05. Proposed Methodology

The system is developed in three stages. (1) Result ingestion: the technician imports the analyser CSV against the accession number; each parameter value is stored and auto-compared to configured reference ranges. (2) Verification workflow: flagged and critical values route to the pathologist queue; the documented protocol requires critical values to be phoned through before release, and the call is logged with a timestamp. (3) Publication: on verification the report is signed, rendered to PDF, and published to the patient's library with a notification; trend charts recompute from the full history.

06. System Architecture / Working

A PHP backend with session auth and role separation (patient, technician, pathologist, admin) sits on a MySQL schema of roughly eight tables (patients, accessions, panels, results, verifications, shares, queries, users). PDFs are rendered server-side per published report. Share links carry a random token, a 7-day expiry and an OTP gate. Patients can only access rows keyed to their own UHID; staff roles separate upload from verify/publish.

07. Software Requirements

- PHP 8, MySQL 8, Apache (standard LAMP / shared hosting)
- Server-side PDF generation library
- Modern browser; mobile-responsive patient views
- SMS/OTP provider account of the buyer's choice for share-link OTPs
- Reference-range configuration ships for CBC, lipid, thyroid, LFT/KFT, HbA1c

08. Expected Outcomes

- Patients downloading signed PDFs and viewing reference-range context per result.
- Trend charts for key parameters across the retained history.
- A staff queue with flagging, critical-value logging and verification before publish.
- Secure doctor sharing without forwarding PDFs over chat.
- A complete student kit: source code, anonymized sample data, report, PPT and viva Q&A.;

09. Applications

- Diagnostic labs and pathology centres
- Hospital outpatient report delivery
- Health-checkup camp result distribution
- College project demonstrating document workflows and privacy-aware design

10. Future Scope

- Direct analyser/LIS integration (HL7) instead of CSV import
- Government-certified digital signature (DSC) integration
- Family accounts managing reports for dependents
- Integration with appointment and billing modules