# **Functional & Performance Testing Template**

**Model Performance Test**

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| Date | 21 February 2025 |
| Team ID | LTVIP2025TMID54121 |
| Project Name | revolutionizing liver care |
| Maximum Marks |  |

## 📌 What Is a Functional & Performance Testing Template?

A **Functional & Performance Testing Template** is a structured framework used to **validate whether a liver care application or system works as intended** (functional) and whether it can **handle expected loads efficiently and reliably** (performance). This is critical in healthcare where **accuracy, speed, and reliability** can impact patient outcomes.

## ⚙️ Functional Testing Examples

* **Login functionality** (secure login for patients and doctors)
* **Diet recommendation logic** (based on lab inputs like ALT, AST)
* **Appointment scheduling** (with hepatologist or dietitian)
* **EHR integration** (fetching lab reports or medication history)

## 🚀 Performance Testing Examples

* **Load testing**: Can the app handle 1000+ users during a public health campaign?
* **Stress testing**: Does the AI model still work with large imaging data (e.g., MRI)?
* **Response time**: Are liver disease predictions shown in <3 seconds?
* **Scalability testing**: How well does the system grow with more hospitals/users?

## 📈 Benefits in Liver Care Transformation

* Ensures **clinical accuracy** of recommendations and diagnoses.
* Improves **user experience** for both patients and healthcare providers.
* Validates **AI reliability** before integration into hospital workflows.
* Enhances **patient safety** and trust in digital health platforms.

📋 Functional & Performance Testing Template – Liver Care

| **Test Type** | **Test Scenario** | **Expected Result** | **Test Status** | **Remarks** |
| --- | --- | --- | --- | --- |
| **Functional Testing** | User logs into liver care app | Successful login with correct credentials | Pass/Fail |  |
|  | Patient inputs liver test data (e.g., ALT, AST) | Data saved and visualized correctly | Pass/Fail |  |
|  | System recommends a liver-friendly diet plan based on user profile | Personalized plan shown with meal details | Pass/Fail |  |
|  | Doctor updates patient diagnosis in portal | Patient record updates reflect in real time | Pass/Fail |  |
|  | Patient receives alert for high-risk condition (e.g., cirrhosis alert) | Immediate notification triggered | Pass/Fail |  |
|  | Appointment booking with hepatologist | Slot selected, confirmation message sent | Pass/Fail |  |
|  | Integration with EHR or lab reports | Automatic data import from external systems | Pass/Fail |  |
| **Performance Testing** | Load 1000 concurrent users during peak hours | App remains responsive (response time < 2 seconds) | Pass/Fail | Stress/load testing required |
|  | Model processes 100 patient records in batch mode | All predictions generated within 10 seconds | Pass/Fail |  |
|  | Real-time liver risk prediction on mobile app | Results shown within 3 seconds | Pass/Fail |  |
|  | Large image (e.g., liver scan) uploaded | Upload completes successfully within time limits | Pass/Fail |  |
|  | Weekly health summary generation | Report generated without errors and delivered on time | Pass/Fail |  |
| **Security Testing** | Patient data encrypted during transmission | End-to-end encryption verified | Pass/Fail |  |
|  | Access control – doctor vs patient permissions | Role-based access correctly enforced | Pass/Fail |  |