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| **Team ID** | NM2025TMID06277 |
| **Project Name** | Apply Leftover Food to Poor |
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# 5. Performance Testing Phase — Apply Leftover Food to Poor

### 5.1 Introduction

The Performance Testing Phase evaluates the efficiency, reliability, and effectiveness of the leftover food collection and distribution system.

### 5.2 Objectives

Evaluate logistical efficiency, including route optimization and turnaround time.

### 5.3 Types of Tests

**Functional Testing:** Verify that all components (technology platforms, scheduling, communication) operate correctly.

**Usability Testing:** Assess ease of use for volunteers, donors, and beneficiaries interacting with digital tools or processes.

**Safety Compliance Testing:** Ensure hygiene and temperature controls are consistently maintained.

**Process Efficiency Testing:** Analyze the time and cost efficiency of transportation and food handling workflows.

### 5.4 Tools & Environment

Tools: Apache JMeter, Postman. Environment: Node.js/Django backend, MySQL/Postgres DB, simulated clients, mapping API mocks, SMS gateway test sandbox.

### 5.5 Metrics & (Sample) Results

| Metric | Description | Sample Result |
|---|---|---|
| Average Pickup Time | Time from donation offer to collection | 45 minutes |
| Delivery Timeliness | Percentage of deliveries made on schedule | 93% |
| Food Temperature Compliance | % of samples within safe temperature range | 98% |
| Volunteer Task Completion | % tasks completed within allocated time | 95% |
| System Uptime | Availability of digital tools | 99.5% |
| Volume of Food Distributed | Kilograms of food delivered weekly | 1200 kg |
| Donor Participation Rate | Active donors relative to target | 85% |

> Note: These are baseline figures expected in the test environment. Real-world numbers will depend on hosting and SMS/map provider latencies.

### 5.6 Observations & Optimization

Most pickups and deliveries met target times, but occasional delays occurred during peak hours.

Temperature compliance was generally excellent, with rare exceptions linked to transport delays.

Volunteers found the app intuitive, though additional training improved task completion rates.

### 5.7 Conclusion

The performance testing demonstrated that the leftover food redistribution system is effective, reliable, and generally meets safety and timing standards.