**Performance and Functional Testing**

**Testing**

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| Date | 28 JUNE 2025 |
| Team ID | LTVIP2025TMID59766 |
| Project Name | **TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning** |
| Maximum Marks | 4 Marks |

**Performance Testing**

| **Test Case** | **Description** | **Expected Outcome** |
| --- | --- | --- |
| Load 1000 Requests | Send 1000 simultaneous prediction requests | 95% respond < 2 seconds, no crashes |
| Stress Test | Increase load to 5000 requests/minute | Response degrades gracefully without failure |
| Spike Test | Sudden 10x increase in API calls | No server crash, some delay acceptable |

 Response Time (UI and API)

 Throughput (requests per second)

 CPU & Memory Utilization

 Error Rates under load

 Model Prediction Latency

**Functional Testing:**

| **Test Case** | **Description** | **Expected Result** |
| --- | --- | --- |
| Input UI Check | Enter valid and invalid road names | Accept valid, show error for invalid input |
| CSV Upload | Upload correct and corrupted CSV file | Process valid, reject invalid with error |
| Prediction API | Call API with valid parameters | Return traffic prediction in JSON |
| Model Output | Check prediction for known traffic scenario | Prediction matches historical pattern |