**ASSESSMENT 4 – PERFORMANCE GURU**

**Colony Module – Hypothetical Performance Testing Plan**

**Objective**

To evaluate how SoftMouse.NET's **Colony module** performs under load (50–100 users) and identify any performance bottlenecks in critical workflows like animal list loading, mating setup, and data export.

**Tools Chosen**

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| **Tool** | **Purpose** |
| **Apache JMeter** | Load testing for simulating multiple concurrent users (50–100) hitting the Colony endpoints. |
| **BlazeMeter (Optional)** | Cloud-based extension for running distributed tests. |
| **Browser DevTools + Lighthouse** | Basic front-end load profiling, especially for UI elements like animal lists. |

**Performance Test Scenarios**

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| **#** | **Scenario** | **Target** |
| 1 | Login to SoftMouse.NET | Login response < 3 seconds |
| 2 | Load Animal List | Page loads under 5 seconds with 100+ animals |
| 3 | Export Animal List to CSV/PDF | File download completes < 6 seconds |
| 4 | Create Mating Records | Form submission within 3 seconds |
| 5 | Simultaneous Actions | 50 virtual users performing login, navigate, export, and create records concurrently |

**Load Pattern**

* **Users:** 10, 25, 50, and 100
* **Ramp-up time:** 10 users every 30 seconds
* **Duration:** 10–15 minutes
* **Think time:** 3–5 seconds between actions (to simulate real user behavior)

**Success Criteria**

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| **Metric** | **Goal** |
| Avg Response Time | < 5 seconds |
| Error Rate | < 2% |
| Throughput | Stable during peak load |
| No server crashes | System should not hang, timeout, or break with 100 users |

**Explanation of Results to Non-Tech Team**

I simulated 100 users using the Colony module at the same time — logging in, searching for animals, exporting data, and adding mating records. The system handled it well, with fast page loads and no crashes. However, I noticed a slight delay (around 6 seconds) when exporting large animal lists, which can be optimized by compressing the data before download. Overall, the system is stable and scalable for current lab use cases.