**System Test Plan Document**

**Project Name:** Goat Observation and Assessment Technology (G.O.A.T)

**Team Name:** Mean Green Solutions  
**Team Members:**

* Albert Kileo
* Jack Follett
* Jesus Chavez

**Sponsor:** Clean Chickens and Co. LLC  
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**1. Introduction**

This document outlines the testing strategy and plan for the G.O.A.T. system, ensuring that all functional and non-functional requirements are met. It describes the test objectives, scope, approach, test cases, and defect tracking mechanisms.

**2. Objectives**

* Verify that the system can process more than 100 goats per day.
* Ensure accurate grading and pricing based on image recognition.
* Validate database functionality for storing and retrieving grading information.
* Confirm system stability under industrial conditions.
* Ensure seamless integration between cameras, processing unit, and database.
* Track and manage deliverables efficiently to ensure on-time completion.

**3. Scope of Testing**

**3.1 In-Scope**

* Functional Testing: Image capture, grading accuracy, pricing calculation, and database storage.
* Performance Testing: Processing speed and load capacity.
* Integration Testing: Camera and database communication.
* Security Testing: Data encryption and access control.
* Usability Testing: User interface functionality and ease of use.

**3.2 Out of Scope**

* Hardware manufacturing defects.
* External network dependencies outside the facility.

**4. Testing Strategy**

**4.1 Testing Types**

1. **Unit Testing** – Validate individual components (image recognition module, database operations, UI elements).
2. **Integration Testing** – Verify seamless interaction between system components.
3. **System Testing** – Evaluate overall system performance under expected workload.
4. **User Acceptance Testing (UAT)** – Ensure that the system meets stakeholder expectations.

**4.2 Test Execution Approach**

* Automated testing for grading algorithms.
* Manual testing for UI usability.
* Simulated load tests for performance validation.

**5. Test Environment**

* **Hardware:** Windows-based system, 4 high-resolution cameras.
* **Software:** Python-based AI model, SQL database.
* **Test Data:** Sample goat images with pre-determined grades.

**6. Test Cases**

| **Test ID** | **Test Scenario** | **Expected Result** | **Status** |
| --- | --- | --- | --- |
| TC001 | Capture image from all four cameras | Images successfully captured and stored | Pending |
| TC002 | Process image for grading | Grade assigned correctly based on AI model | Pending |
| TC003 | Store grading and pricing data in database | Data stored and retrievable correctly | Pending |
| TC004 | Validate UI responsiveness | UI responds within 2 seconds of action | Pending |
| TC005 | Load test with 100 goats per day | System processes all images within time constraints | Pending |
| TC006 | Security check for unauthorized access | Unauthorized access is denied | Pending |

**7. Defect Reporting & Tracking**

* **Defect Tracking Tool:** Jira/Trello
* **Severity Levels:**
  + **Critical:** System crash, incorrect grading
  + **High:** UI freezing, incorrect data storage
  + **Medium:** Slow performance, minor UI glitches
  + **Low:** Minor usability issues

**8. Test Schedule**

| **Phase** | **Start Date** | **End Date** |
| --- | --- | --- |
| Unit Testing | 02/20/2025 | 03/10/2025 |
| Integration Testing | 03/11/2025 | 03/25/2025 |
| System Testing | 03/26/2025 | 04/10/2025 |
| User Acceptance Testing | 04/11/2025 | 04/20/2025 |
| Final Review & Sign-Off | 04/21/2025 | 04/30/2025 |

**9. Roles and Responsibilities**

| **Role** | **Team Member** | **Responsibilities** |
| --- | --- | --- |
| Test Manager | Jack Follett | Oversee test planning and execution |
| Test Engineer | Jesus Chavez | Develop and execute test cases |
| Developer Support | Albert Kileo | Fix defects and optimize system performance |
| Client Representative | Rebecca Wierschke | Review test results and validate acceptance criteria |

**10. Deliverable Tracking**

| **Deliverable Name** | **Deliverable Manager** | **Draft Due Date** | **Final Due Date** | **Status** |
| --- | --- | --- | --- | --- |
| UI Development | Jesus Chavez | 02/10/2025 | 03/01/2025 | In Progress |
| Image Recognition | Jack Follett | 02/10/2025 | 03/01/2025 | In Progress |
| Database Implementation | Albert Kileo | 02/10/2025 | 03/01/2025 | In Progress |

This document ensures the G.O.A.T. system is tested thoroughly before deployment. Any modifications or additional test scenarios will be reviewed and documented accordingly.