**✅ Phase-6: Functional & Performance Testing**

**Objective:**Ensure the project works as expected.

**Key Points:**

1. **Test Cases Executed:**
   * Uploaded various test images (plastic, food, mixed waste).
   * Verified correct category output (Biodegradable, Recyclable, Trash).
   * Tested responsiveness on mobile and desktop browsers.
   * Handled invalid file types and missing files gracefully.
2. **Bug Fixes & Improvements:**
   * Fixed image filename sanitization issues using secure\_filename.
   * Added custom modals instead of default alert() for better UX.
   * Improved prediction loading and error message display.

**3.Final Validation:**

* + ✅ Meets all functional requirements listed in Phase-2.
  + ✅ End-to-end flow (image → backend → prediction → frontend) works without manual intervention.