Software Test Plan (STP) — Online Marketplace for Handcrafted Goods

Project: Online Marketplace for Handcrafted Goods
Version: 1.0
Authors: QA Team
Date: 01-10-2025
Status: Draft/Sample

1. Introduction

Purpose
This STP defines scope, strategy, resources, schedule, responsibilities, and acceptance criteria for testing the Online Marketplace for Handcrafted Goods—where artisans list handmade items, buyers purchase them, and the system generates PDF invoices plus simple sales/inventory reports.

Scope
Testing covers: user registration/login (buyer & artisan), product listing CRUD with images, catalog browsing/search (filters, pagination), cart operations, checkout (address & shipping), order placement/status, PDF invoice generation, inventory deduction and stock-out handling, reports (sales/inventory), and admin functions (categories, tax, moderation). Real payment network certification and third-party settlement are excluded (use stubs/sandbox).

References

- SRS – Online Marketplace v1.0
- SAD/Architecture – Online Marketplace v1.0
- API (OpenAPI/Swagger) – Backend v1.0
- DB Schema & Migrations – Marketplace DB v1.0
- OWASP ASVS (selected), OWASP Testing Guide
- ISO/IEC 25010 (quality characteristics)

Definitions (concise)
Artisan (seller), Buyer (customer), SKU, Order Status (PENDING → CONFIRMED/FAILED → SHIPPED/DELIVERED/CANCELED), PDF Invoice, Auth Token (JWT/Session), p95 Response Time, Availability.

---

2. Test Items

- Web Frontend (Next.js)
- Backend API (Node/Express)
- Relational Database (MySQL)
- File/Blob Storage: product images & invoice PDFs

- Authentication & Authorization (JWT/Session)
- Reporting Module (sales & inventory)
- Admin Console (categories, tax, moderation)
- Observability: logs, metrics, uptime/perf dashboards

---

3. Features to be Tested

Functional Requirements

- **OM-F-001** User registration & login (buyer and artisan)
- **OM-F-002** Artisan product listing CRUD with images
- **OM-F-003** Catalog browsing & search (keywords, category, price range, pagination)
- **OM-F-004** Shopping cart (add/update/remove items)
- **OM-F-005** Checkout with address & shipping selection
- **OM-F-006** Order placement and status tracking
- **OM-F-007** PDF invoice generation & download
- **OM-F-008** Inventory deduction & stock-out handling
- **OM-F-009** Simple sales & inventory reports (artisan dashboard)
- **OM-F-010** Admin: category/tax config, user & listing moderation

Non-Functional Requirements

- **OM-NF-001** Performance: p95 response time ≤ 2s on catalog pages @ ~50 VU
- **OM-NF-002** Availability: ≥ 99% during demo window
- **OM-NF-003** Security: hashed passwords, secure tokens, input validation/encoding
- **OM-NF-004** Accessibility: keyboard navigation, labels/ARIA for key controls
- **OM-NF-005** Data integrity: transactional checkout (no partial orders)

---

4. Features Not to be Tested

- Real payment gateway certification/settlement (replaced by stub/sandbox)
- Advanced analytics beyond basic sales/inventory reports
- CDN/WAF vendor-specific tuning beyond basic checks

---

5. Test Approach / Strategy

Levels

- Unit (utilities, services)
- API Integration (backend endpoints & DB)
- UI/Component Integration (forms, flows)
- System E2E (buyer → checkout → invoice)
- UAT (scripted demo scenarios)

Types

- Functional & Regression
- Security (auth, token flags, XSS/SQLi, input validation)
- Performance (JMeter: catalog & checkout flows)
- Accessibility/Usability (keyboard focus order, labels/ARIA)
- Data Integrity (transactionality, idempotency)
- Reliability/Availability (basic uptime observation)

Automation

- UI: Cypress or Selenium for auth, listing CRUD, cart, checkout, invoice download
- API: Postman/Newman or REST-assured suites
- Perf: JMeter 5.6 .jmx for catalog & checkout
- Security: OWASP ZAP baseline plus curated fuzz payloads for inputs

Test Data & Seeding

- Seed users (buyer, artisan, admin), categories, products with varied stock/price, and representative tax settings. Resettable seed scripts per run.

Entry Criteria

- Deployable test build available; environments up; seed data loaded; stubs configured (payments, email). Critical smoke tests pass.

Exit Criteria

- 100% of planned test cases executed; 0 Critical/Blocker open; High ≤ 2 with acceptable workarounds; performance p95 ≤ 2s (catalog); transactional integrity verified; UAT sign-off.

5.1 Security Validation (Focused)

- Password hashing (bcrypt/argon2) verified at DB level; no plaintext anywhere
- Tokens are httpOnly/Secure with sane expiries; authZ enforced on protected routes
- Input validation + output encoding (prevent XSS/SQLi) on key fields: search, product title/desc, address
- Logs redact PII; only last-4 on IDs where applicable

- Basic rate-limit/lockout checks on login and sensitive actions

6. Test Environment

- **Frontend:** Next.js app on localhost:3000 (TEST mode)
- **Backend:** Node/Express API on localhost:8080 (TEST)
- **DB:**Mysql
- **Storage:** Local/S3-compatible bucket for images; invoices persisted as PDFs
- **Tools:** Cypress/Selenium, Postman/Newman, JMeter 5.6, OWASP ZAP, PDF text validator, log viewer
- **Data:** Seeded users, categories, products (low/medium/high stock), orders

7. Test Schedule (suggested)

- D1–D2: Test design; data seeding finalized; smoke suite
- D2–D4: UI/API automation scaffolds; initial regression pass
- D4–D6: Full system runs; performance (JMeter); security sweep (ZAP + fuzz)
- D7: UAT and sign-off

8. Test Deliverables

- This STP, RTM, manual & automated test cases
- Postman/Cypress/Selenium suites, JMeter .jmx
- Seed data scripts, execution logs, defect reports
- Final Test Summary Report (TSR)

9. Roles & Responsibilities

Role	Name	Responsibility
QA Lead	Anish	Own STP/RTM, plan & reporting, sign-off coordination
Test Engineer(s)	Akshay	Design/execute tests, automation, defect logging
Dev Lead	Anirudha	Build readiness, defect triage/fixes, env support
Product Owner	Akash	Accept criteria, UAT approval

10. Risks & Mitigation

- **Unstable image/PDF storage:** Add local fallback + clear errors; smoke test uploads early
- **Seed data drift:** Nightly reset; versioned seed scripts
- **Flaky UI due to dynamic content:** Stable test IDs, deterministic fixtures, explicit waits
- **Payment dependency:** Hard stubs (SUCCESS/FAIL) with toggles; contract tests
- **Perf regressions near demo:** Lightweight perf smoke in CI; threshold alerts

11. Assumptions & Dependencies

- Payment/email providers stubbed or sandboxed
- Test data and storage credentials available before execution
- CI able to run UI/API/perf suites against test env
- Browser versions and Node/Postgres versions fixed for test window

12. Suspension & Resumption Criteria

12.1 Suspension Triggers (any one is sufficient)

Environment outage: Test env (API/DB/storage) unavailable for > 4 hours cumulative in a day.

Build instability: ≥ 30% of planned test cases blocked by the current build or infra.

Critical defects: ≥ 1 Critical or ≥ 3 High open defects that directly block core flows (OM-F-004/005/006/007/008).

Data corruption: Evidence of non-recoverable data integrity issues (violating OM-NF-005).

Security breach: Confirmed exposure of credentials/PII or bypass of auth (OM-NF-003).

12.2 Suspension Actions

Halt affected suites; keep minimal smoke checks running.

Create a Suspension Log entry (time, trigger, impacted modules, owner).

Notify stakeholders on the project channel/email with a short incident brief and ETA for fix (if known).

12.3 Resumption Preconditions (all required)

Root cause documented; fix verified in the test env.

Blocker/Critical = 0 and High ≤ 2 (with accepted workarounds).

Data integrity validated (DB checks pass; rollback/seed restores clean state).

Smoke suite passes for core paths: login (OM-F-001), listing (OM-F-002), catalog (OM-F-003), cart (OM-F-004), checkout+order (OM-F-005/006), invoice (OM-F-007).

12.4 Resumption Actions

Record Resumption Log (time, fix summary, verification performed).

Re-run impacted suites (functional, then regression).

Update schedule and risk register; communicate new target dates.

13. Test Case Management & Traceability

13.1 Identifiers

Requirements: OM-F-### / OM-NF-###

Test cases: TC-<AREA>-### (e.g., TC-AUTH-01)

Defects: BUG-### (tracked in issue tool)

13.2 RTM Ownership

RTM maintained in Handcrafted_Marketplace_STP_RTM_TestCases.xlsx (or your chosen alternative).

Columns: Requirement_ID, Description, Test_Cases (comma-sep), Status (Covered/Gap), Notes.

13.3 Change Control

Any change to a requirement (add/update/remove) must:

Update SRS/SAD; 2) Update RTM mapping; 3) Add/modify test cases; 4) Re-run affected suites.

QA Lead approves all RTM changes and ensures no requirement remains without at least one positive and one negative/pathological test (where applicable).

13.4 Execution & Status

Test cases carry fields: Priority, Type, Automation, Status (Planned/In-Progress/Blocked/Passed/Failed), Build ID, Evidence link (logs/screens/PDF).

Daily sync ensures RTM “Status” reflects latest execution (Covered/Partially/Gap).

13.5 Coverage Gates

Functional: 100% of OM-F-001…010 mapped to ≥ 1 positive + 1 negative.

Non-Functional: Each OM-NF-### mapped to ≥ 1 measurable test (perf, security, accessibility, integrity).

Exit: No “Gap” rows in RTM.

14. Test Metrics & Reporting

14.1 Execution Metrics

Planned vs Executed: #Executed / #Planned

Pass Rate: #Passed / #Executed

Block Rate: #Blocked / #Planned (track by cause: build/env/data)

14.2 Defect Metrics

By Severity: counts of Critical/High/Medium/Low, and Open vs Closed.

Defect Density: #Defects / Feature area (e.g., per OM-F-ID)

Aging: days open by severity; highlight >5 days High/Critical.

Reopen Rate: #Reopened / #Closed

14.3 Requirement Coverage

Coverage %: #Requirements with ≥1 passing TC / Total #Requirements

Gaps: requirements with no linked passing case (must be 0 at exit).

14.4 Performance & Availability

p95 Catalog Latency (OM-NF-001): target ≤ 2s @ ~50 VU; error rate < 1%.

Availability (OM-NF-002): observed uptime ≥ 99% over the demo window.

14.5 Security & Accessibility

Security (OM-NF-003): password hashing verified; tokens httpOnly/Secure; XSS/SQLi attempts safely handled; zero Critical findings.

Accessibility (OM-NF-004): keyboard traversal success on primary flows; labels/ARIA present on critical controls.

14.6 Data Integrity

Transactional Checkout (OM-NF-005): zero partial orders/payments in failure simulations.

14.7 Reporting Cadence

Daily brief: execution, blockers, new defects, risks.

Mid-cycle summary (if >1 week): trend charts for pass rate and defect aging.

Final Test Summary Report (TSR): outcomes vs entry/exit, residual risks, sign-off recommendation.

15. Approvals

Role	**Name**	**Signature / Date**	**Notes**
QA Lead	Anish		Confirms coverage, metrics, and exit criteria met
Dev Lead	Anirudha		Confirms fixes merged; no known P0/P1 regressions
Product Owner	Akash		Accepts residual risks; approves release/UAT outcome