**TradeAdvance — Test Plan**

**Project:** TradeAdvance (Stock Trading Platform)  
**Prepared by:** Hitarth Buvariya (QE)  
**Date:**   
**Version:** 1.0 (Manual-only)

## 1. Introduction

This Test Plan defines the scope, objectives, approach, and schedule of the testing activities for the **TradeAdvance Stock Trading Platform**.  
The plan is based on the FRS and the project scope agreed with stakeholders.  
It provides the framework for **manual verification and validation** of all implemented features before release.

## 2. Test Objectives

* Verify all functional requirements (FRs 1–21) of TradeAdvance as defined in the FRS.
* Validate integration with Alpaca **paper trading API** for orders and data.
* Ensure UI/UX consistency across Portfolio, Stocks, Strategies, Recommendations, Predict, and History modules.
* Detect and log defects systematically in JIRA.
* Provide confidence to stakeholders that the system is stable for release.

## 3. Test Scope

### In-Scope

* **Authentication**: Registration, Login, Logout.
* **Portfolio Insights**: Summary boxes, pie charts, holdings table, trade dialog.
* **Manual Trading**: Buy and Sell orders (paper environment).
* **Stocks Module**: List, search, filters.
* **Stock Details**: Chart, technical indicators.
* **Strategies**: Viewing and applying strategies to stocks.
* **Ordered by Algorithm**: Verification of auto-generated orders in UI.
* **Recommendations**: Long-term & short-term recommendations display and filtering.
* **Predict Future**: Forecast page showing ARIMA outputs.
* **History**: Transaction log and P/L chart.

### Out-of-Scope

* Real trading with live Alpaca keys.
* Heavy load/performance stress testing.
* Advanced KYC/AML compliance.
* Automation scripting.

## 4. Test Approach (Manual Strategy)

* **Smoke Testing**: Performed on every build (critical flows: login, portfolio load, trade dialog, buy/sell).
* **Functional Testing**: Detailed test cases mapped to FRS requirements.
* **Integration Testing**: UI flows backed by Alpaca paper API endpoints.
* **Regression Testing**: Re-execution of relevant cases after fixes.
* **UI/Usability Testing**: Labels, charts rendering, error messages, responsiveness.
* **Compatibility Testing**: Manual tests on Chrome, Firefox, Safari (desktop and mobile responsive check).

Defects will be logged in EXCELwith proper severity/priority and linked to FR IDs.

## 5. Test Deliverables

* Approved Test Plan (this document).
* Manual Test Cases (Google Sheet or Excel).
* Smoke Test Checklist.
* Test Execution Reports (daily/weekly status).
* Defect Reports in EXCEL.
* Final Test Summary Report (coverage, defects, risks).

## 6. Test Items

Items under test:

* **UI Pages:** Portfolio, Stocks, Strategies, Ordered by Algorithm, Trade Manually, Recommendations, Predict Future, History.
* **APIs (via UI):** Login, Register, Portfolio fetch, Trade execution (paper orders), Recommendations, Predictions.
* **Data:** Portfolio holdings, strategy lists, historical prices, recommendations, predictions.

## 7. Features to be Tested

* **Authentication** (FR-1, FR-2, FR-3).
* **Portfolio Insights** (FR-5, FR-6).
* **Trade Dialog & Manual Trade** (FR-7, FR-8).
* **Stocks list & search** (FR-9, FR-10).
* **Charts & Indicators** (FR-11, FR-12, FR-13).
* **Strategies & Apply Strategy** (FR-14, FR-15).
* **Automated Orders display** (FR-15 UI).
* **Recommendations** (FR-19).
* **Prediction** (FR-18).
* **Trade History** (FR-20).
* **Portfolio Management options** (FR-21 basics).

## 8. Features Not to be Tested

* Live trading with real money.
* Full-scale load/performance testing.
* Advanced compliance checks (KYC/AML).
* Machine learning accuracy validation (ARIMA/K-Means) — only UI output is verified.

## 9. Test Environment

* **Environment**: Staging server (FastAPI backend + SQLite + paper Alpaca).
* **Browsers**: Chrome (latest), Firefox (latest), Safari (latest).
* **Devices**: Desktop web, responsive check on mobile.
* **Test Data**: Trader\_A (with holdings), Trader\_B (zero holdings), Trader\_C (strategies applied).
* **API**: Alpaca paper endpoint.

## 10. Test Schedule

* **Test Plan approval**: Day 0.
* **Smoke Test execution**: Day 1.
* **Functional Testing**: Day 2–6.
* **Regression & Re-tests**: Day 7–8.
* **UAT**: Day 9.
* **Final Report & Sign-off**: Day 10.

## 11. Roles and Responsibilities

* **QA Lead**: Approves test plan, monitors execution, prepares summary report.
* **Manual Testers**: Design & execute test cases, log defects, retest fixes.
* **Dev Lead**: Provides builds, fixes bugs, assists QA.
* **Product Owner / BA**: Clarifies requirements, reviews UAT results.
* **DevOps**: Maintains staging environment.

## 12. Test Cases Design

### Techniques:

* Equivalence Partitioning & Boundary Value Analysis (quantities, cash balance).
* State Transition (pre/post trade states).
* Positive/Negative flows (valid trade vs insufficient funds).
* Exploratory testing for charts/indicators.

### Example Test Case:

* **ID**: TC-FR2-001
* **Feature**: Login
* **Steps**: 1) Go to Login page; 2) Enter valid credentials; 3) Click Login.
* **Expected**: Redirect to Portfolio Dashboard.
* **Result**: (To be filled during execution).

## 13. Entry and Exit Criteria

### Entry

* Test Plan approved.
* Build deployed to staging.
* Test data available.
* Smoke checklist passes.

### Exit

* 100% planned manual test cases executed.
* No open P0/P1 defects.
* Test Summary Report delivered.
* UAT signed off.

## 14. Suspension and Resumption Criteria

**Suspend**: If environment unavailable >4 hours, blocking P0 bug prevents progress.  
**Resume**: Once environment restored and smoke passes again.

## 15. Risks & Mitigation

* **API downtime (Alpaca)** → fallback with mock data.
* **Data accuracy issues** → cross-check with sample CSVs.
* **Environment instability** → maintain backups & snapshots.
* **Late defect fixes** → adjust regression window, prioritize retests.

## 16. Tools

* **Test Management**: Google Sheets / Excel.
* **Defect Tracking**: EXCEL
* **Documentation**: Google Docs / Confluence.
* **Capture**: Screenshots, HAR files, console logs.

## 17. Approval

QA Lead: Hitarth Buvariya  
Dev Lead: Dhruvil Dhamsaniya  
Product Owner:Aryan Akola