TeamPulse – Software Testing & Quality Assurance (QA) Document

1. Document Overview

Product: TeamPulse (AI Admin / Ops Assistant)
Document Type: Software Testing & QA Plan
Purpose: Ensure TeamPulse is reliable, accurate, secure, and ready for real business use.

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2. Testing Objectives

- Validate that all features meet the PRD requirements
- Ensure AI outputs are accurate, understandable, and actionable
- Detect bugs, data errors, and edge cases early
- Guarantee system stability under normal SME usage
- Maintain high data integrity and security standards

3. Testing Scope

In-Scope

- Data upload & validation
- AI question answering
- Report generation (daily & weekly)
- Performance summaries
- Alert & anomaly detection
- Dashboard UI
- Security & access control

Out-of-Scope (MVP)

- Payroll execution
- Mobile app testing
- Third-party integrations (Slack, WhatsApp, Accounting tools)

4. Testing Types

4.1 Unit Testing

Purpose: Validate individual functions and components.

Examples:

- CSV parser correctly reads files
- Attendance calculation logic
- Payment status classification
- Alert threshold logic

Acceptance Criteria:

- All core functions return expected outputs
- Code coverage $\geq 80\%$

4.2 Integration Testing

Purpose: Ensure components work together correctly.

Test Areas:

- Data upload $\rightarrow$ database storage
- Database $\rightarrow$ AI query engine
- AI output $\rightarrow$ report generator
- Alert engine $\rightarrow$ notification system

Acceptance Criteria:

- No data loss between modules
- Consistent data across dashboard and reports

4.3 Functional Testing

Purpose: Validate user-facing features.

Key Test Scenarios

Feature	Test Case	Expected Result

Data Upload	Upload valid CSV	Data processed successfully
Data Upload	Upload invalid format	Clear error message
AI Q&A	"Who didn't resume work yesterday?"	Correct staff list
AI Q&A	"Which client hasn't paid?"	Accurate unpaid list
Reports	Generate weekly report	Correct, readable summary
Alerts	Late payment detected	Alert triggered

4.4 AI Output Validation Testing

Purpose: Ensure AI-generated content is accurate, unbiased, and business-safe.

Checks:

- No hallucinated data
- Clear explanation of insights
- Neutral and professional tone
- Correct date ranges

Validation Method:

- Compare AI responses with raw data
- Human review during QA cycles

4.5 Performance Testing

Purpose: Ensure system responsiveness.

Metrics:

- AI response time < 3 seconds
- Report generation < 20 seconds
- Dashboard load < 5 seconds

Test Scenarios:

- Upload large datasets (up to 200 staff)
- Concurrent queries by multiple users

4.6 Security Testing

Purpose: Protect sensitive business data.

Test Areas:

- Authentication & authorization
- Role-based access control
- Data encryption (at rest & in transit)
- File upload security

Acceptance Criteria:

- Unauthorized access blocked
- No data exposure via logs or errors

4.7 Usability Testing

Purpose: Ensure ease of use for non-technical admins.

Focus Areas:

- Dashboard clarity
- Report readability
- AI chat usability

Method:

- Test with 3–5 SME admins
- Collect feedback on clarity and speed

5. Test Environment

- **Frontend:** Web browser (Chrome, Edge)
- **Backend:** Staging server
- **Database:** Test dataset
- **AI Engine:** Staging configuration

6. Test Data Strategy

- Dummy staff records
- Sample sales & payment data
- Edge cases (missing dates, duplicates)
- Historical data (2–6 months)

7. Bug Tracking & Reporting

Severity Levels:

- Critical – System unusable
- High – Major feature broken
- Medium – Feature works incorrectly
- Low – UI/UX issue

Bug Report Must Include:

- Steps to reproduce
- Expected vs actual result
- Screenshots or logs

8. QA Exit Criteria

TeamPulse is ready for release when:

- All critical & high bugs resolved
- Core features pass functional tests
- AI outputs verified for accuracy
- Performance benchmarks met

9. Post-Release Monitoring

- Monitor AI query errors
- Track alert accuracy
- Collect admin feedback
- Log system exceptions

10. Quality Assurance Principles

- Accuracy over creativity
- Transparency in AI responses
- Human oversight for critical insights
- Continuous improvement via feedback

11. QA Ownership

- **QA Lead:** Defines test strategy
- **Developers:** Fix issues & add unit tests
- **Product Owner:** Final approval

TeamPulse QA ensures trust , because admin decisions depend on it.