Test Case 1: Supplier Onboarding

Field	Details
ID	TC-1.1-01
User Story	User Story 1.1 - Supplier Onboarding
Scenario	Submit Valid Supplier Registration with Complete Details
Preconditions	None
Test Steps	1. Open supplier registration form. 2. Enter all required fields: Company Name, Tax ID, Contact Person, Email, Phone, Bank Account Number. 3. Enter Product or Service description. 4. Upload certifications (if available). 5. Upload Eco certifications and verify (if available). 6. Complete Ethical Sourcing Questionnaire (Child Labor, Fair Wages, Safe Conditions). 7. Enter Distance to Warehouse (km). 8. Select Transport Type from dropdown (Truck/Ship/Train/Air). 9. Enter Average Shipment Weight (kg). 10. Submit form.
Expected Result	1. Form submits successfully. 2. System validates all mandatory fields before submission. 3. Supplier status = 'Pending Approval'. 4. Supplier record stored in 'Pending Supplier Applications' table (NOT in main supplier database). 5. Confirmation email sent to supplier within 2 minutes. 6. Notification sent to Supply Chain Manager. 7. All sustainability data (eco certifications, ethical sourcing, distance, transport type, weight) is captured for future carbon footprint calculations.
Exceptional Scenario: Missing Required Fields	**Trigger:** User submits form with one or more required fields empty (like Company Name, Tax ID, Email, or Bank Account). **Response:** System shows validation error: 'Please fill in all required fields.'

	UI Prompt: Red error messages appear below empty required fields with asterisks. Submit button remains disabled.
Exceptional Scenario: Duplicate Tax ID	**Trigger:** Supplier enters Tax ID that already exists in the system. **Response:** System rejects submission and displays error: 'Duplicate Tax ID. This supplier is already registered.' **UI Prompt:** Red error text below Tax ID field. Message includes: 'A supplier with this Tax ID already exists.'
Exceptional Scenario: Duplicate Email	**Trigger:** Supplier enters email address that already exists in the system. **Response:** System blocks submission and shows error: 'This email is already registered. Please use a different email address.' **UI Prompt:** Red border around Email field with inline error message.
Exceptional Scenario: Invalid Transport Type	**Trigger:** User attempts to manually enter transport type instead of using dropdown. **Response:** System only accepts values from dropdown: Truck, Ship, Train, Air. **UI Prompt:** Dropdown field prevents manual entry. Only predefined options selectable.

Test Case 2: Supplier Approval - Approve

Field	Details
ID	TC-1.2-01
User Story	User Story 1.2 - Supplier Approval
Scenario	Approve Supplier Application
Preconditions	Supply Chain Manager is logged in. Pending supplier applications exist in the system.
Test Steps	1. Navigate to 'Pending Suppliers' dashboard list. 2. Select a supplier from the list. 3. Review all supplier details (company info, certifications, sustainability data). 4. Click 'Approve' button.

| | 5. Add optional comments. |
	6. Confirm approval.
Expected Result	1. Supplier status changes to 'Approved'.
	2. Supplier ID is auto-generated (format: SUP-XXXXX).
	3. Approval log is saved with: Approver name, Date & time (timestamp), Comments.
	4. Notification emails sent to supplier and procurement officer within 5 minutes.
	5. Supplier moved from 'Pending Supplier Applications' table to main Supplier database.
	6. Supplier can now receive purchase orders.
Exceptional Scenario: Reject Without Reason	**Trigger:** Manager clicks 'Reject' but does not enter a rejection reason.
	Response: System shows validation error: 'Rejection reason is required.'
	UI Prompt: Red text below 'Reason' text area. 'Confirm Reject' button remains disabled until reason is entered.
Exceptional Scenario: Session Timeout	**Trigger:** Manager's session expires while viewing supplier details.
	Response: System redirects to login page with message: 'Session expired. Please log in again.'
	UI Prompt: Alert banner at top of screen before redirect. Unsaved changes warning if applicable.

Test Case 3: Supplier Approval - Reject

Field	Details
ID	TC-1.2-02
User Story	User Story 1.2 - Supplier Approval
Scenario	Reject Supplier Application
Preconditions	Supply Chain Manager is logged in. Pending supplier applications exist.

Test Steps	1. Navigate to 'Pending Suppliers' dashboard list.
	2. Select a supplier.
	3. Click 'Reject' button.
	4. Enter rejection reason in text field ('Incomplete sustainability documentation').
	5. Add optional comments.
	6. Click 'Confirm Rejection'.
Expected Result	1. Supplier status changes to 'Rejected'.
	2. System logs: Approver name, Date & time (timestamp), Rejection reason, Comments.
	3. Notification sent to supplier and procurement officer within 5 minutes.
	4. Supplier remains in 'Pending Supplier Applications' table with 'Rejected' status.
	5. Supplier cannot receive purchase orders.
Exceptional Scenarios	None

Test Case 4: Supplier Performance Calculation

Field	Details
ID	TC-1.3-01
User Story	User Story 1.3 - Supplier Performance Calculation
Scenario	Calculate Performance Metrics After Delivery Confirmation
Preconditions	Delivery has been confirmed by Inventory Department.
Test Steps	1. Inventory Department confirms delivery in the system.
	2. Navigate to Supplier Performance screen.
	3. Verify metrics for the supplier.
Expected Result	1. System automatically calculates supplier performance metrics after Inventory Department approval: On-Time Delivery Rate (%), Defect Rate (%), Contract Compliance (%), Average Delivery Time (days).
	2. Calculations are triggered only after Inventory Department confirms the delivery.

	3. Metrics update in real-time and overwrite previous data.
	4. Supplier ranking is updated based on total performance score: Excellent (90-100%), Good (75-89%), Poor (<75%).
	5. Calculation timestamp is logged.
	6. Updated metrics become available for Supply Chain & Procurement teams.
Exceptional Scenario: Missing Delivery Data	**Trigger:** Delivery is confirmed but critical data (delivery date, quality score, or contract terms) is missing. **Response:** System displays warning: 'Unable to calculate performance. Missing delivery data: [specific field].' **UI Prompt:** Yellow warning banner on supplier performance page. 'Update Data' button to add missing information.
Exceptional Scenario: First Delivery	**Trigger:** This is the supplier's first confirmed delivery. **Response:** System calculates initial metrics based on this single delivery. Dashboard shows 'Initial Performance - Based on 1 delivery'. **UI Prompt:** Info badge next to metrics: 'Performance will improve accuracy with more deliveries.'

Test Case 5: Supplier Performance Reporting - View Dashboard

Field	Details
ID	TC-1.4-01
User Story	User Story 1.4 - Supplier Performance Reporting
Scenario	View Supplier Performance Dashboard
Preconditions	Supply Chain Manager is logged in with appropriate permissions.
Test Steps	1. Navigate to 'Supplier Performance' menu. 2. Select a supplier from the list. 3. View performance dashboard with all metrics.
Expected Result	1. Dashboard displays all metrics correctly: On-Time Delivery %, Defect Rate %, Contract Compliance %, Average Delivery Time (days). 2. System shows visual ranking: Excellent (90-100%), Good (75-89%), Poor (<75%).

	3. Charts and graphs render properly. 4. Historical data is visible for trend analysis. 5. Supply Chain Manager can filter and view metrics by date range or delivery period. 6. Finance department can access reports for payment prioritization or penalties. 7. Procurement officer can view reports to evaluate supplier reliability and update risk scores.
Exceptional Scenario: Finance Access	**Trigger:** User with 'Finance' role accesses performance reports. **Response:** System displays read-only view. Finance can view all metrics for payment decisions but cannot edit performance data. **UI Prompt:** View-only banner at top: 'Finance Department - Read-Only Access for Payment Prioritization.'
Exceptional Scenario: Update Risk Scores	**Trigger:** Procurement officer reviews performance and updates supplier risk score. **Response:** System allows procurement officer to add risk score notes based on performance data. Risk score changes are logged. **UI Prompt:** Risk Score panel with editable field and 'Save Changes' button. Audit trail shows who updated risk score and when.

Test Case 6: Supplier Performance Reporting - Export PDF

Field	Details
ID	TC-1.4-02
User Story	User Story 1.4 - Supplier Performance Reporting
Scenario	Export Performance Report as PDF
Preconditions	Supply Chain Manager is viewing supplier performance dashboard.
Test Steps	1. Click 'Export as PDF' button. 2. Wait for PDF generation.
Expected Result	1. System generates PDF file with comprehensive supplier performance data.

	2. PDF downloads automatically to user's device. 3. PDF includes: Supplier name, ID, On-Time Delivery %, Defect Rate %, Contract Compliance %, Average Delivery Time, Visual ranking (Excellent/Good/Poor), Charts/graphs, Date range, Export timestamp. 4. File name format: 'SupplierPerformance_[SupplierID]_[Date].pdf'
Exceptional Scenarios	None

Test Case 7: Sustainability Metrics - Carbon Footprint

Field	Details
ID	TC-1.5-01
User Story	User Story 1.5 - Sustainability Metrics Calculation
Scenario	Calculate Carbon Footprint Based on Delivery Data
Preconditions	Delivery data is available with all required fields: Distance, Weight, Transport Type, Delivery Frequency.
Test Steps	1. New delivery is recorded in the system with: Distance = 500 km, Weight = 1000 kg, Transport Type = 'Truck', Deliveries per Year = 12. 2. System automatically triggers carbon footprint calculation. 3. View sustainability metrics for the supplier.
Expected Result	1. System automatically calculates carbon footprint using formula: (Distance × Weight × Emission Factor × Deliveries per Year) / 1000. 2. For Truck: Emission Factor = 0.21 kg CO_2 per ton/km. 3. Carbon footprint value is displayed in tons/year. 4. Calculation updates whenever new delivery data is recorded. 5. Calculation is logged with timestamp.
Exceptional Scenario: Missing Transport Type	**Trigger:** Delivery is recorded without specifying transport type. **Response:** System displays error: 'Cannot calculate carbon footprint. Transport type is required.' **UI Prompt:** Red warning on sustainability dashboard. Prompt to 'Update Transport Type' for accurate calculations.

Exceptional Scenario: Different Transport Types	**Trigger:** System calculates for Ship (Emission Factor = 0.03), Train (0.04), or Air (0.50).
	Response: System correctly applies corresponding emission factor based on selected transport type. Dashboard shows comparison: 'Your carbon footprint would be [X]% lower with [alternative transport].'
	UI Prompt: Info tooltip showing emission factors for all transport types for comparison.

Test Case 8: Sustainability Metrics - Overall Score

Field	Details
ID	TC-1.5-02
User Story	User Story 1.5 - Sustainability Metrics Calculation
Scenario	Calculate Overall Sustainability Score
Preconditions	Supplier has provided: Eco certifications, Ethical sourcing questionnaire responses, Delivery data for carbon footprint.
Test Steps	1. Review supplier's eco certification status (Uploaded & Verified). 2. Review ethical sourcing questionnaire responses (All 3 Yes: No Child Labor, Fair Wages, Safe Conditions). 3. Review carbon footprint calculation (8 tons/year). 4. System automatically calculates sustainability score.
Expected Result	1. Eco Certification Score: Uploaded & Verified = 3 points, Uploaded but Not Verified = 1 point, Not Provided = 0. 2. Ethical Sourcing Score: All Yes = 3 points, 2 Yes = 2 points, 1 Yes = 1 point, All No = 0. 3. Carbon Footprint Score: <10 tons = 4 points, 10-25 = 3 points, 25-50 = 2 points, >50 = 1 point, >100 = 0. 4. Final Sustainability Score = Eco Certification + Ethical Sourcing + Carbon Footprint Score (maximum 10 points). 5. Score is displayed on supplier profile (like 10/10). 6. Sustainability calculations refresh whenever new delivery or certification data is saved.

Exceptional Scenario: Incomplete Questionnaire	**Trigger:** Supplier has not completed all three ethical sourcing questions. **Response:** System assigns 0 points for unanswered questions. Warning displayed: 'Incomplete ethical sourcing data. Score may be lower.' **UI Prompt:** Yellow badge on sustainability dashboard: 'Questionnaire Incomplete'. Link to 'Request Update from Supplier'.
Exceptional Scenario: Unverified Certification	**Trigger:** Supplier uploaded eco certification but admin has not verified it yet. **Response:** System assigns 1 point (partial credit). Status shows 'Pending Verification'. **UI Prompt:** Orange status badge: 'Certification Pending Verification'. Admin notification to review and verify.

Test Case 9: Sustainability Reporting - View Dashboard

Field	Details
ID	TC-1.6-01
User Story	User Story 1.6 - Sustainability Reporting Retrieval
Scenario	View Sustainability Dashboard with Filters
Preconditions	Procurement officer has access to sustainability reports.
Test Steps	1. Navigate to 'Sustainability Dashboard'. 2. View supplier sustainability metrics. 3. Apply filters: Transport Type, Certification Status, Sustainability Score Range.
Expected Result	1. Procurement officer can view sustainability metrics: Carbon Footprint (tons/year), Eco Certification Status, Ethical Sourcing Score, Final Sustainability Score (1-10). 2. Suppliers with sustainability score < 5 are highlighted in red. 3. Filter options work correctly: Transport Type (Truck/Ship/Train/Air), Certification Status (Verified/Pending/Not Provided), Sustainability Score Range (slider or dropdown). 4. Dashboard displays trends: Carbon footprint over time, Score

	changes, Risk levels. 5. System supports periodic monthly sustainability reviews. 6. Data is sortable by each metric.
Exceptional Scenario: PR Team Access	**Trigger:** User with 'PR Department' role accesses sustainability reports. **Response:** System shows read-only view for CSR reporting. Edit/delete options are hidden. PR can view and export reports only. **UI Prompt:** Banner message: 'PR Department - Read-Only Access for CSR Reporting.' Export button remains active.
Exceptional Scenario: No Matching Suppliers	**Trigger:** Procurement officer applies filters that result in no matching suppliers. **Response:** System displays message: 'No suppliers found matching your criteria.' **UI Prompt:** Empty state illustration with 'Clear Filters' button.
Exceptional Scenario: Low Score Alert	**Trigger:** Multiple suppliers have scores < 5. **Response:** Dashboard shows red alert section: '[X] suppliers have sustainability scores below 5. Action required.' **UI Prompt:** Red notification banner with link to 'View Low-Scoring Suppliers'. Suppliers highlighted in red in table.

Test Case 10: Sustainability Reporting - Export Report

Field	Details
ID	TC-1.6-02
User Story	User Story 1.6 - Sustainability Reporting Retrieval
Scenario	Export and Share Sustainability Report
Preconditions	Procurement officer is viewing sustainability dashboard.

Test Steps	1. Click 'Export Report' button.
	2. Select export format (PDF, CSV, or Dashboard Export).
	3. Click 'Download'.
Expected Result	1. System generates sustainability report in selected format.
	2. File downloads automatically.
	3. Export includes: Supplier names, Carbon footprint, Eco certification status, Ethical sourcing scores, Final sustainability scores, Transport types, Trends data.
	4. File name format: 'SustainabilityReport_[Date].[format]'
	5. Report can be shared with PR and Corporate Communications teams for CSR reporting.
Exceptional Scenario: Monthly Review	**Trigger:** Beginning of new month triggers automatic sustainability review.
	Response: System generates monthly sustainability summary report automatically. Procurement officer and PR team receive notification with link to report.
	UI Prompt: Green notification: 'Monthly Sustainability Report for [Month] is ready.' Auto-generated report appears in 'Reports Archive'.

Test Case 11: Store Inventory Sync

Field	Details
ID	TC-2.1-01
User Story	User Story 2.1 - Store Inventory Sync
Scenario	View Live Stock Levels Across All Inventories
Preconditions	Procurement officer is logged in. Store systems are connected and syncing.
Test Steps	1. Navigate to 'Central Inventory Dashboard'.
	2. View stock levels for all items across all stores.
	3. Verify data refresh timestamp.
Expected Result	1. Dashboard displays total quantity per item aggregated from all stores.
	2. Store systems update inventory automatically and daily.

	3. Last update timestamp is visible for each inventory location.
	4. Data refreshes in real-time or within configured sync interval.
	5. Inventory manager has view & update access.
Exceptional Scenario: Low Stock Alert	**Trigger:** Item stock drops below 50 units in any inventory.
	Response: Alert is triggered automatically in procurement dashboard showing: Item name, Current quantity, Last update time, Preferred suppliers.
	UI Prompt: Red alert badge on dashboard with notification bell. Alert panel shows all low-stock items.
Exceptional Scenario: Export Report	**Trigger:** Procurement team clicks 'Export Report' button.
	Response: System generates comprehensive inventory report in Excel/CSV format with all items, quantities, and locations.
	UI Prompt: Export modal appears with format options (CSV/Excel/PDF). Download starts automatically.

Test Case 12: Forecast-Based Procurement

Field	Details
ID	TC-2.2-01
User Story	User Story 2.2 - Forecast-Based Procurement
Scenario	Retrieve and Apply Sales Forecast Data
Preconditions	Sales Department Database contains current month forecast. System integration is active.
Test Steps	1. Wait for beginning of new month (or trigger manual forecast refresh). 2. Navigate to 'Procurement Dashboard'. 3. View forecast-based purchase suggestions.
Expected Result	1. System retrieves monthly sales forecast from Sales Department Database automatically. 2. Forecast data refreshes at the beginning of each month. 3. Low-stock alerts are adjusted dynamically based on sales trends. 4. Purchase suggestions are generated automatically including:

	Supplier name, Suggested quantity, Estimated cost.
	5. High-demand items are highlighted in dashboard.
	6. Forecast confidence level is displayed (if available).
Exceptional Scenario: **Forecast Unavailable**	**Trigger:** Sales Department Database is unreachable or contains no forecast data. **Response:** System displays warning: 'Unable to retrieve sales forecast. Using standard reorder points.' **UI Prompt:** Yellow warning banner on dashboard with 'Retry' button.

Test Case 13: Collect Department Needs - Submit Request

Field	Details
ID	TC-2.3-01
User Story	User Story 2.3 - Collect Departments Needs
Scenario	Department Submits Item Request
Preconditions	User from any department is logged in.
Test Steps	1. Navigate to 'Request Items' page. 2. Enter item name/description ('Office Printer Paper'). 3. Enter quantity needed (like 100). 4. Select department from dropdown. 5. Optionally enter reason/notes. 6. Click 'Submit Request'.
Expected Result	1. Request is auto-assigned a unique Request ID (format: REQ-XXXXX). 2. Request status is set to 'Pending Approval'. 3. Request is automatically sent to Inventory Officer. 4. Confirmation message displays with Request ID. 5. Request is logged with timestamp and department name.

Exceptional Scenario: Missing Fields	**Trigger:** User attempts to submit without item name or quantity.
	Response: System shows validation error: 'Please fill in all required fields.'
	UI Prompt: Red error messages below empty required fields. Submit button disabled.

Test Case 14: Collect Department Needs - Approve Request

Field	Details
ID	TC-2.3-02
User Story	User Story 2.3 - Collect Departments Needs
Scenario	Supply Chain Manager Reviews and Approves Request
Preconditions	Pending department requests exist. Supply Chain Manager is logged in.
Test Steps	1. Navigate to 'Pending Department Requests'.
	2. Select a request to review.
	3. Review item details and quantity.
	4. Add comments (optional).
	5. Click 'Approve'.
	6. Confirm approval.
Expected Result	1. Request status changes to 'Approved'.
	2. System logs: Approver name, Date & time (timestamp), Comments.
	3. Purchase order or internal supply action is initiated automatically.
	4. Notification sent to requesting department within 5 minutes.
	5. Request appears in 'Approved Requests' list.
Exceptional Scenario: Reject Request	**Trigger:** Manager clicks 'Reject' and enters rejection reason.
	Response: Request status changes to 'Rejected'. Rejection reason and timestamp are logged. Notification sent to department.

	UI Prompt: Rejection reason text area is mandatory. Red confirmation dialog before rejecting.
Exceptional Scenario: Review Time Exceeds 24 Hours	**Trigger:** Request remains pending for more than 24 hours. **Response:** System sends escalation alert to Supply Chain Manager and their supervisor. **UI Prompt:** Request is highlighted in orange on pending requests list with 'Overdue' badge.

Test Case 15: Collect Department Needs - Mark Fulfilled

Field	Details
ID	TC-2.3-03
User Story	User Story 2.3 - Collect Departments Needs
Scenario	Mark Request as Fulfilled
Preconditions	Approved request exists. Items have been received.
Test Steps	1. Navigate to approved requests list. 2. Select request where items have been received. 3. Click 'Mark as Fulfilled'. 4. Confirm item delivery.
Expected Result	1. Request status changes to 'Fulfilled' or 'Supplied'. 2. Fulfillment timestamp is logged. 3. Final notification sent to requesting department. 4. Request moves to 'Completed Requests' archive.
Exceptional Scenarios	None

Test Case 16: Urgent Order Notification

Field	Details
ID	TC-2.4-01
User Story	User Story 2.4 - Urgent Order Notification
Scenario	Receive Notification for Urgent Customer Order
Preconditions	Sales representative has marked an order as 'Urgent'. Procurement officer is logged in.
Test Steps	1. Sales rep marks customer order as 'Urgent'. 2. Wait for notification (should be < 1 minute). 3. Check Procurement Dashboard.
Expected Result	1. Notification is triggered automatically within 1 minute. 2. Notification includes: Item name, Required quantities, Delivery deadline, Customer priority level (if available). 3. Procurement Dashboard highlights urgent request in RED section/tab. 4. Urgent order appears at top of procurement queue with 'URGENT' badge. 5. Notification is logged with timestamp for audit tracking. 6. Email/SMS notification sent to procurement officer (if configured).
Exceptional Scenario: Notification Service Failure	**Trigger:** Notification service is temporarily unavailable. **Response:** System automatically retries notification delivery. Dashboard alert displays: 'Notification service temporarily unavailable. Checking for urgent orders...' **UI Prompt:** Yellow alert banner on dashboard. Red 'URGENT ORDERS' section still updates regardless of notification status.

Test Case 17: Create Purchase Order

Field	Details
ID	TC-2.5-01
User Story	User Story 2.5 - Create Purchase Order
Scenario	Create Valid Purchase Order
Preconditions	Procurement officer is logged in. Approved suppliers exist in system.
Test Steps	1. Navigate to 'Create Purchase Order' page. 2. Select supplier from approved suppliers dropdown. 3. Select item(s) and enter quantity (≥10) and unit price. 4. Verify total cost is auto-calculated correctly. 5. Select expected delivery date (within 2 months). 6. Select requesting department. 7. Confirm inventory space availability. 8. Click 'Create PO'.
Expected Result	1. System validates supplier is approved (from User Story 1.2). 2. System checks items are not already in sufficient stock. 3. System confirms space available in inventory. 4. PO is created successfully with status 'Pending Approval'. 5. Unique PO number is generated (format: PO-XXXXX). 6. Total cost is calculated automatically (quantity × unit price for all items). 7. Confirmation message displays: 'Purchase Order [PO-XXXXX] created successfully.' 8. Notifications sent to Supply Chain Manager, Finance Department, and Legal Department within 3 minutes.
Exceptional Scenario: **Unapproved Supplier**	**Trigger:** User attempts to create PO with supplier not in approved list (should not be possible via dropdown). **Response:** System blocks PO creation and shows error: 'Selected supplier is not approved.'

	UI Prompt: Red error banner. Only approved suppliers appear in dropdown.
Exceptional Scenario: Quantity Below Minimum	**Trigger:** User enters quantity < 10 for any item. **Response:** System shows validation error: 'Minimum order quantity is 10 units.' **UI Prompt:** Red border around quantity field with inline error message.
Exceptional Scenario: Delivery Date Too Far	**Trigger:** User selects delivery date more than 2 months in the future. **Response:** System shows error: 'Delivery date cannot exceed 2 months from today.' **UI Prompt:** Red error below date picker. Date picker disables dates beyond 2-month limit.
Exceptional Scenario: Insufficient Space	**Trigger:** Inventory does not have space for ordered quantity. **Response:** System shows warning: 'Insufficient warehouse space for this order. Contact inventory manager.' **UI Prompt:** Orange warning modal with options to 'Reduce Quantity' or 'Contact Inventory Manager'.
Exceptional Scenario: Sufficient Stock	**Trigger:** Selected items already have sufficient stock levels. **Response:** System displays warning: 'Items already in sufficient stock. Current levels: [X] units. Proceed anyway?' **UI Prompt:** Yellow confirmation modal with 'Cancel' and 'Proceed Anyway' buttons.

Test Case 18: Approve/Reject Purchase Order

Field	Details
ID	TC-2.6-01
User Story	User Story 2.6 - Approve/Reject Purchase Order
Scenario	Supply Chain Manager Approves Purchase Order
Preconditions	Pending PO exists. Supply Chain Manager is logged in.
Test Steps	1. Navigate to 'Pending Purchase Orders' within 48 hours of PO creation. 2. Select PO to review. 3. Review all PO details (supplier, items, quantities, cost, delivery date). 4. Add comments (optional). 5. Click 'Approve'. 6. Confirm approval.
Expected Result	1. PO status updates automatically to 'Approved'. 2. System logs: Approver name, Date & time (timestamp), Comments. 3. Notification sent to procurement officer instantly. 4. Notification sent to supplier with PO details. 5. PO moves to 'Active Purchase Orders' list. 6. Finance department receives approval notification for payment processing.
Exceptional Scenario: Reject PO	**Trigger:** Manager clicks 'Reject' and enters rejection reason. **Response:** PO status changes to 'Rejected'. System logs: Approver name, timestamp, rejection reason. Notification sent to procurement officer instantly. **UI Prompt:** Rejection reason text area is mandatory (red border if empty). Red confirmation dialog: 'Are you sure you want to reject this PO?'
Exceptional Scenario: Approval Overdue	**Trigger:** PO remains pending for more than 48 hours. **Response:** System sends escalation notification to Supply Chain Manager and senior management.

	UI Prompt: PO is highlighted in red on pending list with 'OVERDUE' badge.

Test Case 19: Track Purchase Order Status

Field	Details
ID	TC-2.7-01
User Story	User Story 2.7 - Track Purchase Order Status
Scenario	View and Monitor Purchase Order Status
Preconditions	Procurement officer is logged in. Multiple POs exist with various statuses.
Test Steps	1. Navigate to 'Purchase Orders' page. 2. View list of all purchase orders. 3. Apply filters (by supplier, date range, or status). 4. Select specific PO to view detailed status.
Expected Result	1. PO list displays with real-time status for each order. 2. Status options visible: Pending, Approved, Shipped, Delivered, Cancelled. 3. Filter options work correctly: By supplier (dropdown), By date range (date picker), By status (checkbox/dropdown). 4. PO details show complete tracking history with timestamps. 5. Status updates automatically from supplier confirmations. 6. Color coding: Pending (Yellow), Approved (Blue), Shipped (Purple), Delivered (Green), Cancelled (Red).
Exceptional Scenario: No Matching POs	**Trigger:** User applies filters that result in no matching POs. **Response:** System displays message: 'No purchase orders found matching your criteria.' **UI Prompt:** Empty state illustration with 'Clear Filters' button.

Exceptional Scenario: Automatic Status Update	**Trigger:** Supplier confirms shipment or delivery in their system. **Response:** PO status updates automatically in real-time. Procurement officer receives notification of status change. **UI Prompt:** Green toast notification: 'PO [PO-XXXXX] status updated to [Status].' Status badge changes color on PO list.

Test Case 20: Promotion Stock Check

Field	Details
ID	TC-3.1-01
User Story	User Story 3.1 - Promotion Stock Check
Scenario	Share Stock Data with Marketing
Preconditions	Inventory data is up-to-date in the system.
Test Steps	1. Marketing team logs in and navigates to 'Product Inventory'. 2. Selects a product to view stock levels.
Expected Result	1. Marketing sees correct live stock values for all warehouses. 2. Stock data refreshes in real-time (updates within 30 seconds of inventory changes). 3. Total available stock is displayed prominently.
Exceptional Scenario: Stock Below 100	**Trigger:** Product stock falls below 100 units. **Response:** System displays automatic warning: 'Low Stock Alert: Only [X] units available.' **UI Prompt:** Yellow warning banner on product page.
Exceptional Scenario: Stock Below 50	**Trigger:** Marketing attempts to launch promotion for product with < 50 units. **Response:** System blocks promotion and displays error: 'Cannot launch promotion. Minimum 50 units required.'

	UI Prompt: Red error modal with 'Request Replenishment' button.

Test Case 21: Auto-Replenishment Suggestion

Field	Details
ID	TC-3.2-01
User Story	User Story 3.2 - Auto-Replenishment Suggestion
Scenario	Generate Automatic Purchase Order
Preconditions	Product stock has fallen below reorder point.
Test Steps	1. System detects low stock level. 2. Navigate to 'Suggested Purchase Orders'. 3. View generated PO draft.
Expected Result	1. Draft PO is created automatically with correct: Supplier, Item, Quantity (based on reorder formula), Expected delivery date. 2. PO status = 'Draft'. 3. Procurement officer receives notification. 4. PO is editable before final submission.
Exceptional Scenario: Edit Draft PO	Trigger: Officer modifies quantity or supplier in draft PO. Response: System saves changes and updates PO with 'Modified' tag. UI Prompt: Success message: 'Changes saved. Review before submitting.'

Test Case 22: Stock Transfer Between Warehouses

Field	Details
ID	TC-3.3-01
User Story	User Story 3.3 - Stock Transfer Between Warehouses
Scenario	Complete Successful Stock Transfer
Preconditions	Source warehouse has sufficient stock (≥ transfer quantity). User has transfer permissions.
Test Steps	1. Navigate to 'Stock Transfer' page. 2. Select source warehouse, destination warehouse, product, and quantity (for example 100 units). 3. Verify quantity ≥ 20 units. 4. Click 'Initiate Transfer'. 5. Confirm transfer.
Expected Result	1. Transfer status = 'In Transit'. 2. Quantity is deducted from source warehouse immediately. 3. Transfer order is created with tracking number. 4. Destination warehouse receives notification. 5. Upon completion, quantity is added to destination warehouse and status changes to 'Completed'.
Exceptional Scenario: Insufficient Stock	**Trigger:** User attempts to transfer more units than available at source warehouse. **Response:** System blocks transfer and displays error: 'Insufficient stock. Available: [X] units.' **UI Prompt:** Red error text below quantity field.
Exceptional Scenario: Quantity Below Minimum	**Trigger:** User enters quantity < 20 units. **Response:** System shows validation error: 'Minimum transfer quantity is 20 units.' **UI Prompt:** Red border around quantity field with inline error.

Test Case 23: Store Replenishment Request - Submit

Field	Details
ID	TC-3.4-01
User Story	User Story 3.4 - Store Replenishment Request
Scenario	Submit Valid Replenishment Request
Preconditions	Store manager is logged in.
Test Steps	1. Navigate to 'Request Replenishment'. 2. Select product and enter quantity (e.g., 50 units). 3. Enter justification. 4. Submit request.
Expected Result	1. Request status = 'Pending'. 2. Request is logged with: Request ID, Store location, Product, Quantity, Timestamp. 3. Warehouse manager receives notification within 3 minutes. 4. Confirmation message displayed to store manager.
Exceptional Scenario: Quantity Below Minimum	**Trigger:** Store manager enters quantity < 20 units. **Response:** System shows validation error: 'Minimum request quantity is 20 units.' **UI Prompt:** Red error message below quantity field, submit button disabled.

Test Case 24: Store Replenishment Request - Approve

Field	Details
ID	TC-3.5-01
User Story	User Story 3.5 - Store Replenishment Request Approval
Scenario	Approve Replenishment Request
Preconditions	Pending replenishment requests exist. Warehouse manager is logged in.
Test Steps	1. Navigate to 'Pending Replenishment Requests'. 2. Select a request. 3. Click 'Approve'. 4. Confirm approval.
Expected Result	1. Request status = 'Approved'. 2. Transfer order is generated automatically. 3. Warehouse stock is reduced by requested quantity. 4. Store receives notification with estimated delivery time. 5. Delivery tracking becomes available.
Exceptional Scenario: Reject Without Reason	**Trigger:** Manager clicks 'Reject' without entering reason. **Response:** System shows validation error: 'Rejection reason is required.' **UI Prompt:** Red text below reason field, 'Reject' button disabled until text entered.

Test Case 25: Store Replenishment Request - Confirm Delivery

Field	Details
ID	TC-3.5-02
User Story	User Story 3.5 - Store Replenishment Request Approval
Scenario	Confirm Delivery to Store
Preconditions	Approved transfer is in transit.
Test Steps	1. Store manager navigates to 'Incoming Deliveries'. 2. Selects transfer order. 3. Verifies received quantity. 4. Clicks 'Confirm Delivery'.
Expected Result	1. Transfer status = 'Completed'. 2. Store inventory increases by delivered quantity. 3. Delivery confirmation is logged with timestamp. 4. Warehouse receives delivery confirmation notification.
Exceptional Scenarios	None

Test Case 26: Manufacturing Defect Handling

Field	Details
ID	TC-3.6-01
User Story	User Story 3.6 - Manufacturing Defect Handling
Scenario	Mark Product as Manufacturing Defect
Preconditions	Defective products have been identified. User has appropriate permissions.
Test Steps	1. Navigate to 'Quality Control' or 'Returns'. 2. Select defective products. 3. Click 'Mark as Manufacturing Defect'. 4. Enter defect details and quantity. 5. Submit.

Expected Result	1. Product status changes to 'Manufacturing Defect'.
	2. Return Order is created automatically.
	3. Manufacturing department receives notification with defect details.
	4. Products are flagged for quality review.
	5. Inventory count is adjusted.
Exceptional Scenarios	None

Test Case 27: Raw Material Issue Handling

Field	Details
ID	TC-3.7-01
User Story	User Story 3.7 - Raw Material Issue Handling
Scenario	Mark Product as Raw Material Issue
Preconditions	Products with raw material issues identified.
Test Steps	1. Navigate to quality control system.
	2. Select affected products.
	3. Click 'Mark as Raw Material Issue'.
	4. Specify raw material problem and supplier.
	5. Submit.
Expected Result	1. Product status = 'Raw Material Issue'.
	2. Supplier Return Order is generated.
	3. Supplier receives notification with issue details.
	4. Quality team and procurement are notified.
	5. Return shipping label is generated if applicable.
Exceptional Scenarios	None

Test Case 28: Non-Returnable Products Handling

Field	Details
ID	TC-3.8-01
User Story	User Story 3.8 - Non-Returnable Products Handling
Scenario	Mark Product as Non-Returnable
Preconditions	Products identified as non-returnable (expired, damaged beyond repair, contaminated).
Test Steps	1. Navigate to 'Inventory Management'. 2. Select non-returnable products. 3. Click 'Mark as Non-Returnable'. 4. Enter reason and disposal method. 5. Submit.
Expected Result	1. Product status = 'Non-Returnable'. 2. Disposal Order is created and available for review. 3. Compliance department receives notification (for regulatory compliance). 4. Finance department receives notification (for write-off processing). 5. Products are moved to 'Awaiting Disposal' inventory status. 6. Disposal tracking documentation is generated.
Exceptional Scenarios	None

Test Case 29: Real-Time Stock Updates with E-Commerce

Field	Details
ID	TC-4.1-01
User Story	User Story 4.1 - Real-Time Stock Updates with E-Commerce
Scenario	Sync Stock Updates from PO Delivery to E-Commerce
Preconditions	PO delivery has been received and confirmed in inventory system. E-commerce platform integration is active.
Test Steps	1. Procurement officer confirms PO delivery in system. 2. Inventory database updates with new stock quantities. 3. Wait for e-commerce sync (should be real-time). 4. Check product availability on e-commerce platform.
Expected Result	1. Stock database updates automatically once PO deliveries are received. 2. Procurement system sends real-time stock data to E-Commerce platform within seconds. 3. E-Commerce displays only verified 'in-stock' quantities from synced data. 4. Product pages show updated stock quantities immediately. 5. Stock sync is logged with timestamp for audit purposes.
Exceptional Scenario: Stock = 0	**Trigger:** Product stock reaches 0 after orders or stock adjustments. **Response:** E-commerce platform automatically marks product as 'Out of Stock'. Product listing shows 'Out of Stock' badge. **UI Prompt:** Red 'Out of Stock' badge on product page. 'Notify Me When Available' button appears for customers.
Exceptional Scenario: Stock < 10	**Trigger:** Product stock falls below 10 units. **Response:** E-commerce platform displays 'Limited Stock' warning. Shows exact quantity remaining (e.g., 'Only 7 left in stock'). **UI Prompt:** Orange 'Limited Stock' badge. Urgency message: 'Only [X] left - Order soon!'
Exceptional Scenario: Sync Failure	**Trigger:** E-commerce API is temporarily unavailable or sync fails. **Response:** System logs sync failure and automatically retries every 5 minutes. Alert sent to IT/Operations team. Last successful sync timestamp is displayed.

	UI Prompt: Dashboard shows sync status indicator. Red alert: 'E-commerce sync delayed. Last successful sync: [timestamp].' Auto-retry in progress.