System Testing:

1. File Upload System

EQUIVALENCE CLASS IDs

ECIDs	Description
EC001	Valid PDF file (financial statement)
EC002	Valid Excel file (.xlsx, .xls)
EC003	Invalid file format (e.g., .txt, .docx, .jpg)
EC004	File size within limit (≤10MB)
EC005	File size exceeds limit (>10MB)
EC006	Corrupted or unreadable file
EC007	Empty file
EC008	Valid financial statement structure
EC009	Invalid financial statement structure
EC010	Multiple file upload (batch processing)

TEST CASES WITH ECID

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC001	Valid PDF Upload	User uploads a valid PDF containing financial statements	File:Published-Results.pdf (Size: 9.1MB)	File uploaded successfully, processing initiated	System accepts valid PDF and begins data extraction	EC001, EC004, EC008
TC002	Valid Excel Upload	User uploads a valid Excel file with financial data	File: tatacsv_eda.xlsx (Size: 0.2MB)	File uploaded successfully, processing initiated	System accepts valid Excel and begins data extraction	EC002, EC004, EC008
TC003	Invalid Format	User attempts to upload unsupported file format	File: document.txt	Error message: "Upload errors: Only PDF,CSV,XLS,XLSX files allowed."	System rejects unsupported formats	EC003
TC004	Oversized File	User uploads file exceeding size limit	File:Integrated_Report_and_Financial_Statements.pdf (Size: 22.2MB)	Error message: "File size exceeds 10MB limit."	System enforces file size restrictions	EC005

TC005	Corrupted File	User uploads a corrupted PDF file	File: corrupted.pdf	Error message: "Unable to read file. Please upload a valid document."	System detects and rejects corrupted files	EC006
TC006	Empty File	User uploads an empty file	File: Blank.pdf(Size: 0KB)	Error message: "Network Error. Please Try Again."	System rejects empty files	EC007
TC007	Invalid Structure	User uploads PDF without valid financial statement format	File:SE_IT314(1).pdf	Error message: "Network Error. Please Try Again."	System validates financial statement structure	EC009, EC001

2. Email & Password & Username

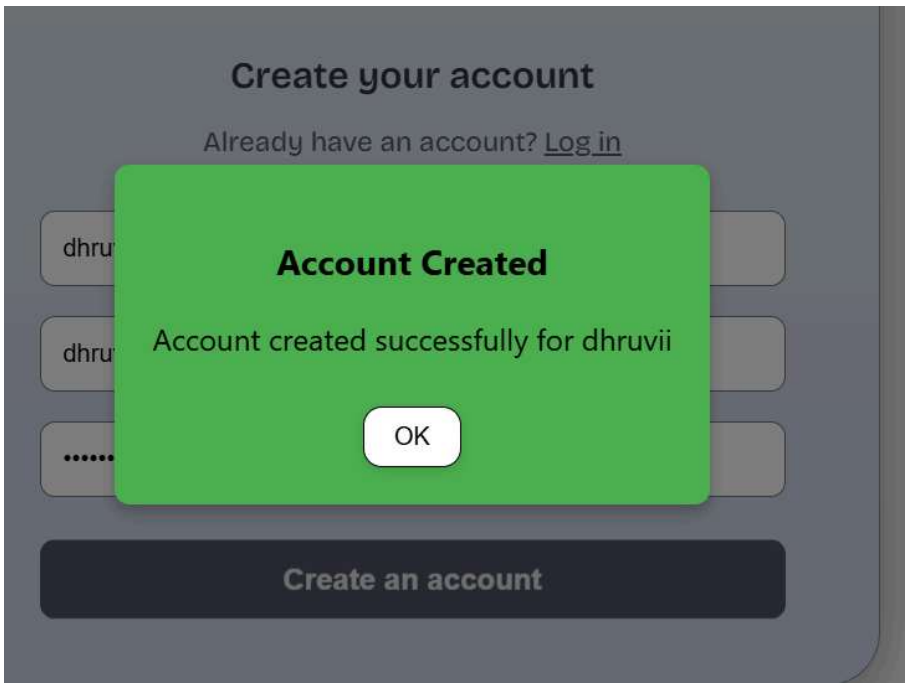
EQUIVALENCE CLASS IDs

ECIDs	Description
EC101	Valid Email ID
EC102	Invalid Email ID
EC103	Valid Password
EC104	Invalid Password
EC105	Registered Email(for Login)
EC106	Correct Password
EC107	Email that is not registered
EC108	Incorrect Password
EC109	Registered Username
EC110	Unregistered Username

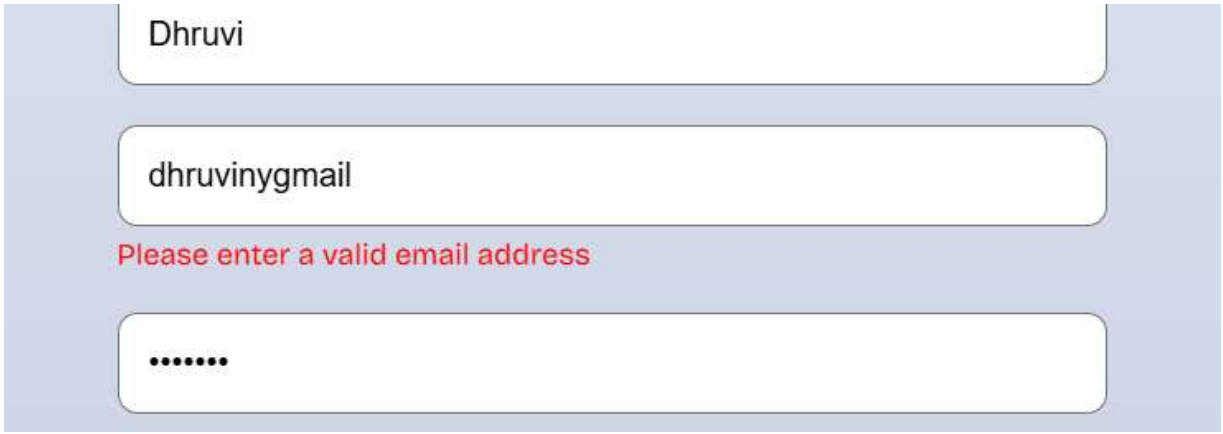
TEST CASES

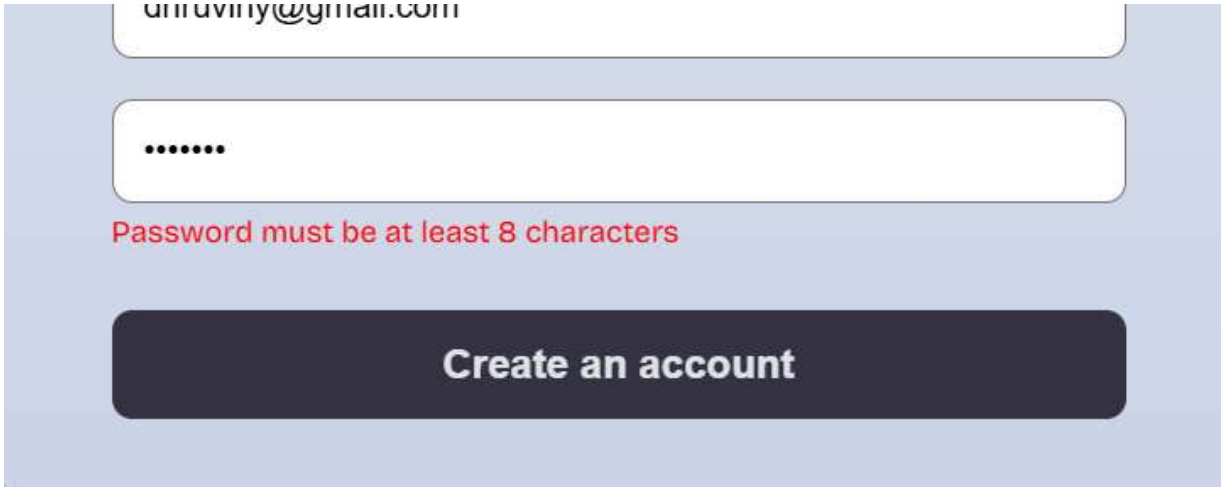
Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC101	Valid Email address with valid password	Registration with valid credentials	Valid credentials	User getting registered and being logged in	User getting signed up	EC101, EC103
TC102	Invalid format Email address and Password	Register using invalid format email address and password	Invalid formatted email and password	System prompts user to give valid credentials	System not accepting non-correctly formed email and password	EC102, EC104
TC103	Wrong credentials	User logging in using wrong credentials	Unregistered username	System prompts user to provide valid credentials	System not accepting unregistered login request	EC107

TC101:

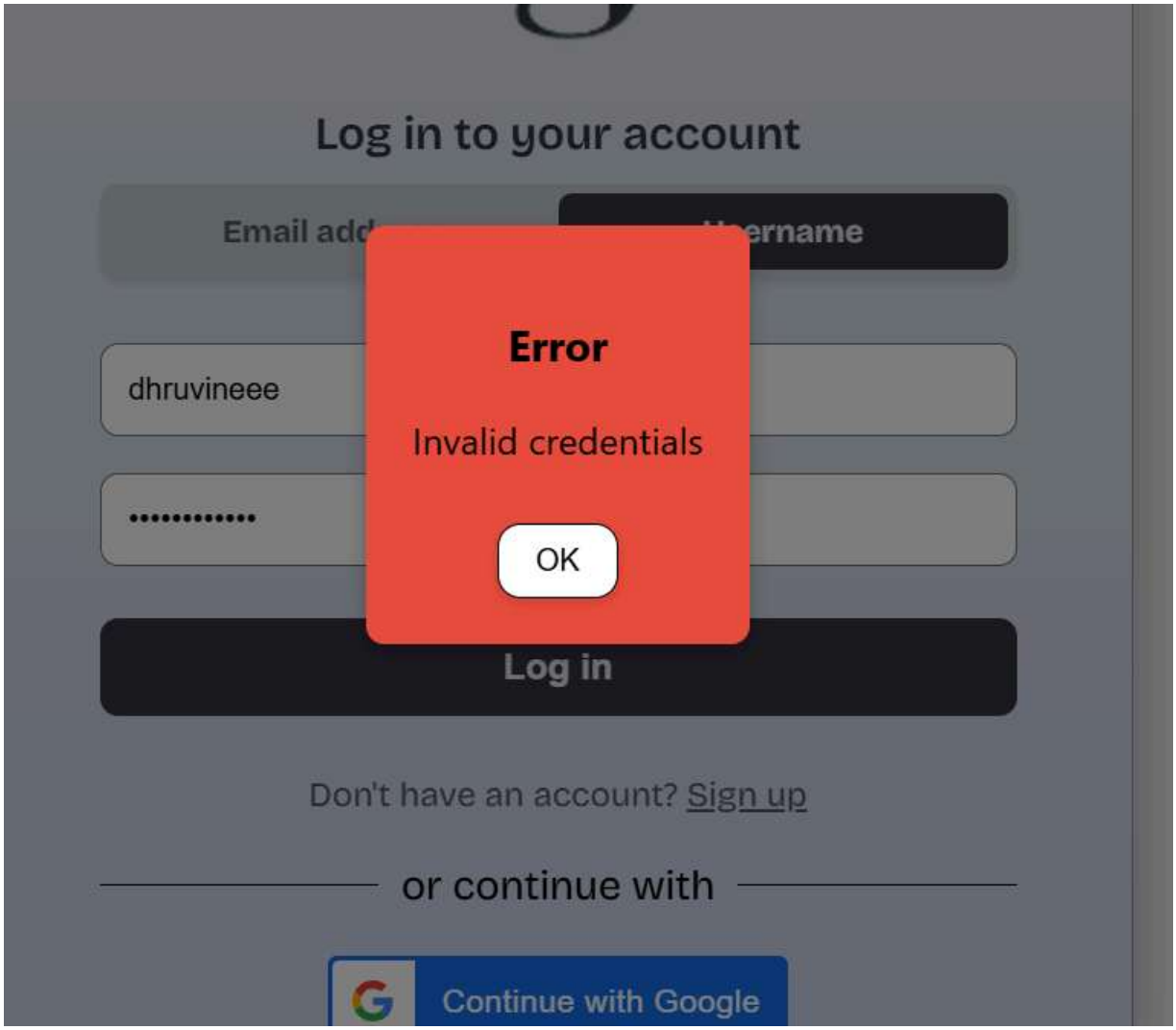

Create your account
Already have an account? Log in
Account Created
Account created successfully for dhruvii
OK
Create an account

TC102:


Dhruvi
dhruvinygmail
Please enter a valid email address


dhruvinly@gmail.com
•••••••
Password must be at least 8 characters
Create an account

TC103:


Log in to your account
Email add
ername
dhruvineee
••••••••••••
Log in
Don't have an account? Sign up
or continue with
Continue with Google
Error
Invalid credentials
OK

3. KPI Calculation & Analysis

EQUIVALENCE CLASS IDs

ECIDs	Description
EC201	Valid data for ratios
EC202	Historical trend analysis (multi-period)
EC203	Year-over-year growth calculations

TEST CASES

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC201	Test KPI and Trend Analysis	Give year wise trend analysis based on given key performance Index	Balance Sheet over a period of time	Accurate calculation of all metrics	Calculated Results with respect to given data	EC201, EC202, EC203
TC202	Liquidity Ratios	Calculate current ratio, quick ratio	Balance sheet with current assets/liabilities	Current ratio and quick ratio displayed	Ratios indicate liquidity position	EC202

TC203	Efficiency Metrics	Calculate asset turnover, inventory turnover	Revenue, assets, inventory data	Efficiency ratios calculated	Metrics show operational efficiency	EC203
TC204	Leverage Ratios	Calculate debt-to-equity, interest coverage	Debt, equity, EBIT data	Leverage metrics computed	Ratios indicate financial leverage	EC204
TC205	Missing Data Handling	Attempt calculation with incomplete data	Partial balance sheet	System identifies missing fields, skips calculation	Graceful handling with user notification	EC205
TC206	Zero Denominator	Calculate ratio when denominator is zero	Total equity = 0	System flags invalid calculation	Prevents division by zero errors	EC206
TC207	Negative Values	Process financial statements with losses	Net income = -$500,000	Negative values handled appropriately	System correctly processes negative figures	EC207
TC208	Benchmark Comparison	Compare KPIs to industry standards	Tech sector company data	KPIs compared to tech industry benchmarks	Comparative analysis displayed	EC208, EC201

TC209	Trend Analysis	Analyze KPIs over multiple periods	3 years of financial data	Trend lines and changes calculated	Historical trends visualized	EC209, EC210

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4. Risk Identification System

EQUIVALENCE CLASS IDs

ECIDs	Description
EC301	High debt-to-equity ratio detected
EC302	Declining profitability trend
EC303	Liquidity concerns (low current ratio)
EC304	Negative cash flow
EC305	Increasing expenses faster than revenue
EC306	High concentration risk
EC307	No significant risks detected

EC308	Multiple risk factors present
EC309	Seasonal business patterns
EC310	Inconsistent financial data

TEST CASES WITH ECID

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC301	High Leverage Risk	Detect excessive debt levels	Debt-to-Equity = 4.5	Risk flagged: "High financial leverage detected"	System identifies leverage risk	EC301
TC302	Profitability Decline	Identify declining margins	Profit margin: 15% → 10% → 5%	Risk flagged: "Declining profitability trend"	System detects negative trends	EC302, EC209
TC303	Liquidity Risk	Detect insufficient current assets	Current Ratio = 0.8	Risk flagged: "Liquidity concerns - current ratio below 1.0"	System alerts on liquidity issues	EC303

TC304	Cash Flow Issues	Identify negative operating cash flow	Operating CF = -$100,000	Risk flagged: "Negative cash flow from operations"	System highlights cash problems	EC304
TC305	Cost Management	Detect expense growth exceeding revenue	Revenue +5%, Expenses +15%	Risk flagged: "Expense growth outpacing revenue"	System identifies cost control issues	EC305, EC210
TC306	Concentration Risk	Identify over-reliance on single customer/product	Top customer = 65% of revenue	Risk flagged: "High customer concentration risk"	System detects concentration	EC306
TC307	Healthy Financials	Process strong financial statements	All ratios within healthy ranges	No critical risks flagged, positive summary	System correctly identifies healthy status	EC307
TC308	Multiple Risks	Identify multiple risk factors	High debt + declining profits + low liquidity	Multiple risks flagged with prioritization	System handles multiple concurrent risks	EC308, EC301, EC302, EC303

TC309	Seasonal Patterns	Recognize seasonal business variations	Q4 revenue 3x higher than Q1-Q3	Pattern noted in analysis, not flagged as risk	System distinguishes seasonal from risk	EC309
TC310	Data Inconsistencies	Detect conflicting financial information	Balance sheet doesn't balance	Error flagged: "Data inconsistency detected"	System validates data integrity	EC310

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5. Plain Language Summary Generation

EQUIVALENCE CLASS IDs

ECIDs	Description
EC401	Complete financial summary generation
EC402	Technical terms simplified correctly
EC403	Positive financial performance summary
EC404	Negative financial performance summary
EC405	Mixed financial indicators summary

EC406	Summary for non-finance users
EC407	Summary includes key highlights
EC408	Summary includes actionable insights
EC409	Summary length appropriate (not too long/short)
EC410	Multi-language summary support

TEST CASES WITH ECID

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC401	Complete Summary	Generate full financial summary	Complete financial statements analyzed	Comprehensive plain-language summary generated	Summary covers all major aspects	EC401, EC407
TC402	Jargon Simplification	Convert technical terms to plain language	EBITDA, working capital, leverage ratios	Technical terms explained in simple words	Non-finance user can understand	EC402, EC406

TC403	Positive Performance	Summarize strong financial results	Increasing revenue, profit, healthy ratios	Positive summary highlighting strengths	Summary accurately reflects good performance	EC403
TC404	Negative Performance	Summarize poor financial results	Losses, declining revenue, high debt	Clear summary of challenges and concerns	Summary honestly addresses weaknesses	EC404
TC405	Mixed Indicators	Summarize mixed financial results	Good revenue growth but declining margins	Balanced summary of positives and negatives	Summary provides nuanced view	EC405
TC406	Non-Expert Audience	Generate user-friendly explanation	Complex financial statement	Summary understandable to non-finance professional	Clear, accessible language used	EC406, EC402
TC407	Key Highlights	Extract most important insights	Comprehensive financial data	3-5 key takeaways prominently displayed	Most critical information highlighted	EC407
TC408	Actionable Insights	Provide recommendations	Financial analysis complete	Summary includes suggested actions	Practical recommendations provided	EC408

TC409	Summary Length	Ensure appropriate summary length	Various amounts of financial data	Summary is concise yet comprehensive	Summary is readable (200-500 words)	EC409

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6. Data Visualization System

EQUIVALENCE CLASS IDs

ECIDs	Description
EC501	Revenue trend chart generation
EC502	Expense breakdown pie chart
EC503	Profit margin trend visualization
EC504	Balance sheet composition chart
EC505	KPI dashboard with multiple charts
EC506	Comparative period charts
EC507	Export chart as image
EC508	Interactive chart elements

EC509	Responsive chart display (mobile/desktop)
EC510	Chart with no data available

TEST CASES WITH ECID

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC501	Revenue Trend	Generate revenue trend chart	3 years of revenue data	Line chart showing revenue over time	Chart accurately displays revenue trends	EC501, EC506
TC502	Expense Breakdown	Create expense category pie chart	Expense categories and amounts	Pie chart showing expense distribution	Each category represented proportionally	EC502
TC503	Profit Margin	Visualize profit margin changes	Quarterly profit margins	Line chart with margin percentages	Trend clearly visible	EC503, EC506
TC504	Balance Sheet	Show assets vs liabilities vs equity	Balance sheet data	Stacked bar or composition chart	Financial position visualized	EC504

TC505	KPI Dashboard	Display multiple KPIs together	All calculated KPIs	Dashboard with 4-6 key charts	Comprehensive visual overview	EC505
TC506	Period Comparison	Compare current vs previous periods	2 periods of data	Side-by-side comparison charts	Easy comparison enabled	EC506
TC507	Chart Export	Export chart as PNG/JPG	Any generated chart	Chart downloaded as image file	Export functionality works	EC507
TC508	Interactive Features	Test chart interactivity	Multi-series chart	Hover shows data points, click filters	Interactive elements functional	EC508
TC509	Responsive Display	View charts on different devices	Charts on mobile and desktop	Charts adapt to screen size	Readable on all devices	EC509
TC510	No Data Handling	Attempt to generate chart with no data	Empty dataset	Message: "Insufficient data for visualization"	Graceful handling of missing data	EC510

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7. User Dashboard & Report Management

EQUIVALENCE CLASS IDs

ECIDs	Description
EC601	View list of uploaded documents
EC602	Access previously generated reports
EC603	Delete uploaded document
EC604	Download generated report (PDF)
EC605	Search/filter uploaded documents
EC606	Sort documents by date/name
EC607	Share report with others
EC608	Reprocess existing document
EC609	Dashboard loading with many files
EC610	Empty dashboard (no uploads)

TEST CASES WITH ECID

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC601	View Documents	Display all uploaded documents	User has 5 uploaded files	All 5 documents listed with details	Documents displayed chronologically	EC601
TC602	Access Reports	Open previously generated report	Report from uploaded file	Report loads with all analysis	Full report accessible	EC602
TC603	Delete Document	Remove uploaded document	Select document, click delete	Document deleted, confirmation shown	Document removed from system	EC603
TC604	Download Report	Export report as PDF	Generated report	PDF downloaded to device	PDF contains complete report	EC604
TC605	Search Function	Search for specific document	Search: "Q3 2024"	Matching documents displayed	Search returns relevant results	EC605
TC606	Sort Documents	Sort by upload date	Multiple documents	Documents reordered by date	Sorting functionality works	EC606

TC607	Share Report	Generate shareable link	Generated report	Shareable link created	Link provides view-only access	EC607
TC608	Reprocess File	Re-analyze existing document	Previously uploaded file	New analysis generated	Updated results displayed	EC608
TC609	Many Files	Load dashboard with numerous files	User has 50+ documents	Dashboard loads efficiently	Performance acceptable with many files	EC609, EC601
TC610	Empty State	View dashboard with no uploads	New user account	Welcome message and upload prompt	Helpful empty state displayed	EC610

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8. System Integration & End-to-End Workflows

EQUIVALENCE CLASS IDs

ECIDs	Description
EC701	Complete workflow: Upload → Analysis → Report
EC702	Concurrent user processing

EC703	System performance under load
EC704	Data persistence and recovery
EC705	API integration (if applicable)
EC706	Browser compatibility
EC707	Network interruption handling
EC708	Session timeout handling
EC709	Security and data privacy
EC710	Error logging and monitoring

TEST CASES WITH ECID

Test Case ID	Test Scenario	Test Case Description	Test Data	Expected Result	Acceptance Criteria	ECIDs Covered
TC701	End-to-End Flow	Complete user journey	Financial statement PDF	Upload → Extract → Analyze → Visualize → Report	Full workflow completes successfully	EC701

TC702	Concurrent Users	Multiple users uploading simultaneously	10 users, each with file	All processes complete independently	System handles concurrent operations	EC702
TC703	Load Testing	System under high load	50 simultaneous uploads	System remains responsive	Response time < 5 seconds per operation	EC703
TC704	Data Persistence	System restart/recovery	Uploads during processing	Processing resumes after restart	No data loss occurs	EC704
TC705	API Integration	External system integration (if applicable)	API calls to external service	Data exchanged successfully	API responds within SLA	EC705
TC706	Browser Support	Test on multiple browsers	Chrome, Firefox, Safari, Edge	Consistent functionality across browsers	Works on all major browsers	EC706
TC707	Network Issues	Handle network interruption	Simulate connection loss during upload	Error message, retry option provided	Graceful degradation	EC707
TC708	Session Timeout	Long inactive session	User idle for 30+ minutes	Session expires, prompted to re-login	Secure session management	EC708

TC709	Data Security	Verify data protection	Upload sensitive financial data	Data encrypted, access controlled	Security measures in place	EC709
TC710	Error Logging	System error tracking	Trigger various errors	Errors logged with details	Comprehensive error tracking	EC710

Guidance for System Testing Execution

1. Test Environment Setup

- Ensure dedicated test environment separate from production
- Configure test databases with sample financial data
- Set up monitoring and logging tools
- Prepare test data sets (valid/invalid files, various formats)

2. Test Execution Process

- Execute tests in order: File Upload → Data Processing → Analysis → Visualization → Reports
- Document actual results for each test case
- Take screenshots for visual verification
- Log defects with severity and priority
- Perform regression testing after bug fixes

3. Test Data Preparation

- Create sample financial statements (Balance Sheets, P&L, Cash Flow)
- Prepare edge cases (corrupted files, unusual formats)
- Develop multi-year comparative statements
- Include various industries and company sizes

4. Performance Testing Considerations

- Test with files of varying sizes (1MB to 10MB)
- Measure processing time for data extraction

- Monitor system resource utilization
- Test with multiple concurrent users

5. Success Metrics

- **Data Extraction Accuracy:** ≥95% for standard financial statements
- **Processing Time:** ≤30 seconds for typical file (5MB)
- **System Availability:** 99.5% uptime
- **User Satisfaction:** Clear, understandable summaries for non-finance users

6. Defect Management

- **Critical:** System crashes, data loss, security vulnerabilities
- **High:** Incorrect KPI calculations, failed uploads
- **Medium:** UI issues, minor calculation errors
- **Low:** Cosmetic issues, minor text errors

7. Test Coverage Analysis

Ensure testing covers:

- All file types (PDF, Excel)
- All financial statement types
- All KPI calculations
- All risk scenarios
- All visualization types
- All user workflows

8. Acceptance Criteria

System testing is complete when:

- All critical and high-severity defects resolved
- 90%+ test cases passed
- Performance benchmarks met
- Security testing passed
- User acceptance testing completed