

BuyZy - Business Requirements Document

Development Team

August 4, 2025

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1 Business Requirements Document (BRD)

1.1 BuyZy - Modern E-commerce Platform

Document Version: 1.0
Date: August 4, 2025
Project Name: BuyZy E-commerce Platform
Client: Portfolio Project
Prepared By: Development Team

1.2 Table of Contents

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1.3 Executive Summary





1.3.1 Project Vision

BuyZy is a modern, responsive e-commerce platform designed to provide users with an intuitive online shopping experience. The platform showcases contemporary web development practices while delivering a comprehensive marketplace solution.

1.3.2 Key Deliverables

- **Frontend Application:** React-based responsive web application
- **Live Deployment:** GitHub Pages hosted solution
- **Professional Documentation:** Complete technical documentation
- **Portfolio Showcase:** Demonstration of modern development skills

1.3.3 Success Metrics

-  **100% Responsive Design** across all device types
 -  **Sub-3 Second Load Times** for optimal user experience
 -  **Complete Shopping Flow** from browsing to checkout
 -  **Professional Code Quality** with modular architecture
-

1.4 Project Overview

1.4.1 Business Context

BuyZy addresses the need for a modern, user-friendly e-commerce platform that demonstrates contemporary web development capabilities while providing a complete shopping experience.

1.4.2 Target Audience

- **Primary:** Tech recruiters and potential employers
- **Secondary:** E-commerce business stakeholders
- **Tertiary:** Web development community and peers

1.4.3 Project Scope

In Scope: - Complete frontend e-commerce application - Responsive design for all devices - Shopping cart and checkout functionality - User account management - Product catalog with filtering/sorting - Company information and about page

Out of Scope: - Backend API development - Payment processing integration - User authentication with database - Real inventory management - Email notification systems

1.5 Business Objectives

1.5.1 Primary Objectives

1. Showcase Technical Skills

- Demonstrate React development expertise
- Show responsive design capabilities
- Exhibit modern development practices

2. Create Portfolio Asset

- Professional-grade code repository
- Live demonstration application
- Comprehensive documentation

3. Demonstrate E-commerce Understanding

- Complete shopping user journey
- Business logic implementation
- Industry best practices

1.5.2 Secondary Objectives

1. Performance Excellence

- Fast loading times
- Optimized bundle sizes
- Smooth user interactions

2. Code Quality

- Clean, maintainable architecture
- Professional git workflow
- Comprehensive documentation

1.6 Stakeholder Analysis

1.6.1 Primary Stakeholders

Stakeholder	Role	Interest	Influence
Portfolio Owner	Developer	Career advancement	High
Potential Employers	Evaluators	Technical assessment	High
Development Community	Peers	Code quality review	Medium






1.6.2 Secondary Stakeholders

Stakeholder	Role	Interest	Influence
End Users	Shoppers	User experience	Medium
Business Analysts	Reviewers	Business logic	Low

1.7 Functional Requirements






1.7.1 FR-001: Homepage & Navigation

Priority: High
Description: Users must be able to navigate the platform intuitively

Acceptance Criteria: -  Responsive navigation menu with hamburger menu for mobile -  Hero section with clear value proposition -  Featured products showcase -  Category highlights for easy browsing -  Footer with comprehensive links



1.7.2 FR-002: Product Catalog

Priority: High
Description: Users must be able to browse and search products

Acceptance Criteria: -  Product grid with responsive layout -  Product detail pages with image galleries -  Advanced filtering (price, category, rating) -  Sorting options (price, popularity, rating) -  Pagination for large product sets

1.7.3 FR-003: Shopping Cart

Priority: High
Description: Users must be able to manage their shopping cart






Acceptance Criteria: -  Add/remove products from cart -  Quantity adjustment functionality -  Cart persistence across sessions -  Real-time

cart total calculations -  Cart badge in navigation

1.7.4 FR-004: Checkout Process

Priority: High

Description: Users must be able to complete purchases

Acceptance Criteria: -  Shipping address form with validation -  Payment method selection -  Order summary with itemized costs -  Order confirmation page -  Form validation and error handling

1.7.5 FR-005: User Account Management

Priority: Medium

Description: Users must be able to manage their accounts

Acceptance Criteria: -  Account dashboard with overview -  Order history display -  Profile management -  Account navigation sidebar

1.7.6 FR-006: Company Information

Priority: Medium

Description: Users must be able to learn about the company

Acceptance Criteria: -  About page with company story -  Team member profiles -  Core values presentation -  Contact information and forms

1.8 User Journey & Flow

1.8.1 Primary User Journey: Complete Shopping Experience

1. Landing → 2. Browse → 3. Product Detail → 4. Add to Cart → 5. Checkout → 6. Confirmation

1.8.1.1 Detailed Flow Breakdown:

1. Homepage Entry

```
User visits homepage
↓
Views hero section and value proposition
↓
Explores featured products or categories
↓
Navigates to product catalog
```

2. Product Discovery

```
User browses product categories
↓
Applies filters (price, brand, rating)
↓
Sorts products by preference
↓
Views product details
```

3. Shopping Cart Management

```
User adds products to cart
↓
Adjusts quantities as needed
↓
Reviews cart contents
↓
Proceeds to checkout
```

4. Checkout Process

```
User enters shipping address
↓
Selects payment method
↓
Reviews order summary
↓
Completes purchase
↓
Views confirmation page
```

5. Account Management

```
User accesses account dashboard
↓
Reviews order history
↓
Updates profile information
↓
Manages account settings
```

1.8.2 Alternative User Journeys

Quick Browse Journey:

```
Homepage → Categories → Products → Exit
```

Information Seeking Journey:

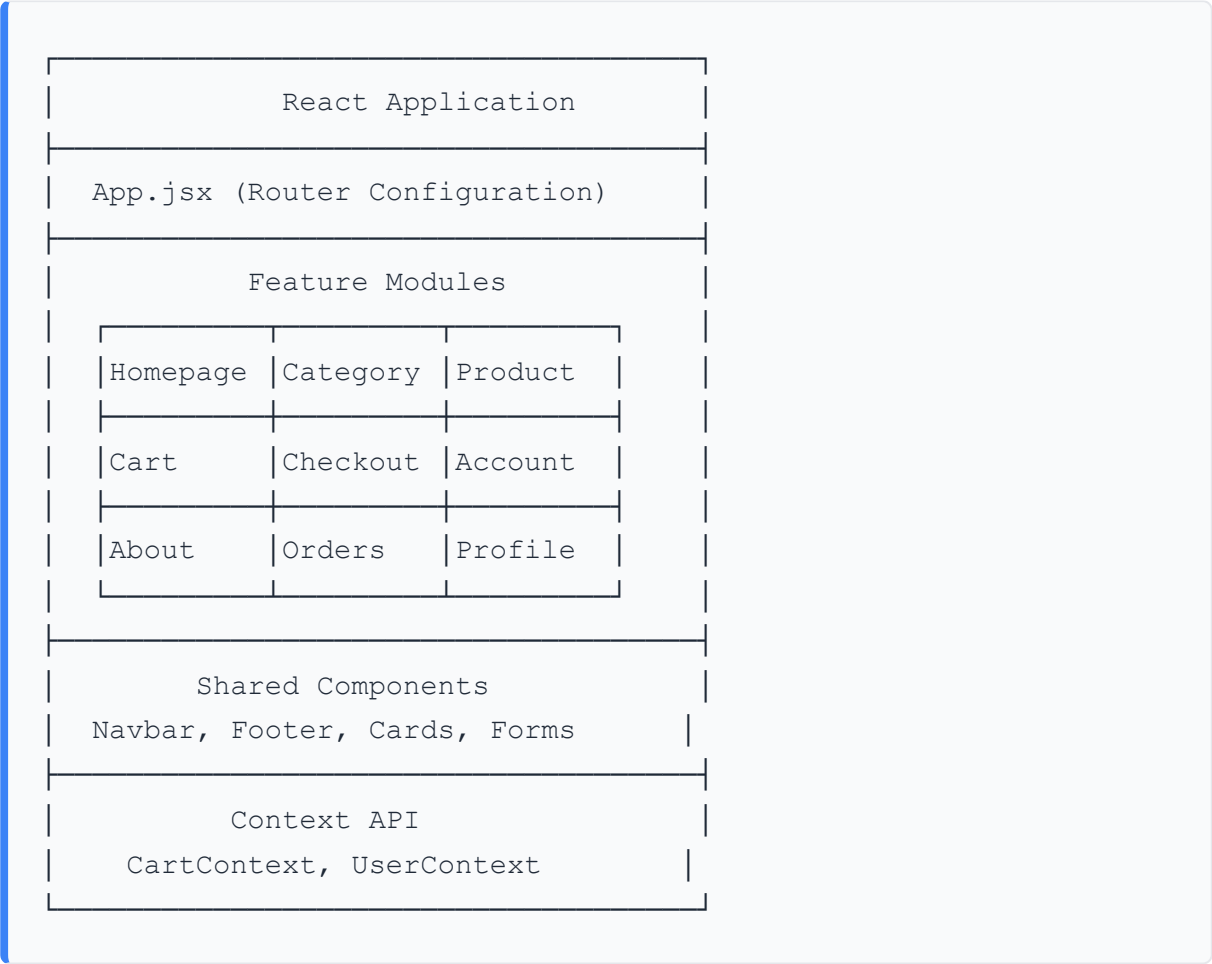
```
Homepage → About Page → Team → Contact → Exit
```

Cart Abandonment Recovery:

```
Add to Cart → Browse More → Return to Cart → Complete Purchase
```

1.9 Technical Architecture

1.9.1 Frontend Architecture



1.9.2 Technology Stack

Layer	Technology	Purpose
Frontend Framework	React 18	Component-based UI development
Styling	TailwindCSS	Utility-first styling system
Routing	React Router v6	Client-side navigation
State Management	Context API	Global state management
Build Tool	Vite	Fast development and build
Icons	React Icons	Consistent iconography
Deployment	GitHub Pages	Static site hosting

1.9.3 Component Architecture Pattern

Feature Module Structure:

├─ components/

├─ hooks/

├─ data/

├─ utils/

├─ [Feature]Page.jsx

└─ index.js

Feature-specific components

Custom hooks for business logic

Mock data and constants

Utility functions

Main page component

Module exports

1.10 UI/UX Design System

1.10.1 Color Palette

Primary Colors:

- Primary Blue: `#3b82f6`
- Primary Blue Dark: `#2563eb`
- Primary Blue Darker: `#1d4ed8`

Secondary Colors:

- Gray 50: `#f9fafb`
- Gray 100: `#f3f4f6`
- Gray 600: `#4b5563`
- Gray 900: `#111827`

Accent Colors:

- Success Green: `#10b981`
- Warning Yellow: `#f59e0b`
- Error Red: `#ef4444`

1.10.2 Typography Scale

Headings:

- H1: text-4xl (36px) - Page titles
- H2: text-3xl (30px) - Section headers
- H3: text-2xl (24px) - Subsection headers
- H4: text-xl (20px) - Component titles

Body Text:

- Large: text-lg (18px) - Important content
- Base: text-base (16px) - Standard content
- Small: text-sm (14px) - Supporting content
- Extra Small: text-xs (12px) - Labels, captions

1.10.3 Spacing System

Margin/Padding Scale:

- xs: 0.25rem (4px)
- sm: 0.5rem (8px)
- md: 1rem (16px)
- lg: 1.5rem (24px)
- xl: 2rem (32px)
- 2xl: 3rem (48px)

1.10.4 Component Design Patterns

Button Variants:

Primary: Blue background, white text, rounded

Secondary: White background, blue border, blue text

Ghost: Transparent background, blue text, hover background

Card Components:

Product Card: Image, title, price, rating, hover effects

Category Card: Icon, title, description, navigation

Info Card: Content with subtle border and shadow

Form Elements:

Input Fields: Clean borders, focus states, validation

Dropdowns: Consistent styling with arrow indicators

Checkboxes: Custom styled with brand colors

1.11 Business Logic & Rules

1.11.1 Shopping Cart Logic

Business Rules:

1. Maximum quantity per item: 10 units
2. Cart persistence: localStorage **for** session continuity
3. Price calculations: Subtotal + shipping + tax
4. Inventory validation: Check availability before checkout
5. Cart expiration: 24 hours **for** held items

1.11.2 Product Catalog Logic

Filtering Rules:

1. Price range: Min \$0 - Max \$10,000
2. Category hierarchy: Main category → Subcategory
3. Rating filter: 1-5 stars **with** half-star precision
4. Availability: In stock, out **of** stock, pre-order

Sorting Options:

1. Price: Low to high, high to low
2. Popularity: Based on view count and ratings
3. Rating: Highest rated first
4. Newest: Recently added products first

1.11.3 User Account Logic

Account Rules:

1. Order history: Chronological display, newest first
2. Profile updates: Real-time validation
3. Address management: Multiple shipping addresses
4. Order status: Processing, shipped, delivered, cancelled

1.11.4 Checkout Logic

Validation Rules:

1. Required fields: Name, address, payment method
2. Address validation: Format and completeness
3. Payment validation: Card number, expiry, CVV format
4. Order minimum: \$10 minimum order value
5. Shipping calculation: Based on location and weight

1.12 Module Specifications

1.12.1 Homepage Module (modules/homepage/)

Purpose: Landing page and initial user engagement

Components: - HeroBanner.jsx - Main promotional section - FeaturedProducts.jsx - Product showcase grid - CategoryHighlights.jsx - Category navigation cards - ValueProposition.jsx - Service benefits display - NewsletterSignup.jsx - Email subscription form

Business Logic: - Featured products rotation - Category prioritization - Newsletter validation - Responsive breakpoints

1.12.2 Category Module (modules/category/)

Purpose: Product browsing and discovery

Components: - CategoryPage.jsx - Main category display - CategoryHeader.jsx - Breadcrumbs and title - FilterSidebar.jsx - Product filtering options - ProductGrid.jsx - Responsive product layout - SortControl.jsx - Sorting functionality - PaginationControls.jsx - Page navigation

Business Logic: - Filter combinations - Sort algorithms - Pagination calculations - URL parameter management

1.12.3 Product Module (modules/product/)

Purpose: Individual product details and management

Components: - `ProductDetailPage.jsx` - Complete product view - `ProductImages.jsx` - Image gallery with zoom - `ProductInfo.jsx` - Description, specs, pricing - `ProductActions.jsx` - Add to cart, wishlist - `ProductReviews.jsx` - Customer reviews display - `ProductSpecifications.jsx` - Technical details

Business Logic: - Image gallery navigation - Variant selection - Review aggregation - Stock availability

1.12.4 Cart Module (modules/cart/)

Purpose: Shopping cart management

Components: - `CartPage.jsx` - Full cart view - `CartItem.jsx` - Individual item display - `CartSummary.jsx` - Totals calculation

Business Logic: - Quantity adjustments - Price calculations - Item removal - Persistence management

1.12.5 Checkout Module (modules/checkout/)

Purpose: Purchase completion process

Components: - `CheckoutPage.jsx` - Multi-step checkout - `ShippingAddressForm.jsx` - Address collection - `PaymentMethodForm.jsx` - Payment details - `OrderSummary.jsx` - Final review

Business Logic: - Form validation - Step progression - Data persistence - Order creation

1.12.6 Account Module (modules/account/)

Purpose: User account management

Components: - `AccountDashboard.jsx` - Overview page - `OrdersPage.jsx` - Order history - `ProfilePage.jsx` - Personal information -

AccountSidebar.jsx - Navigation menu

Business Logic: - Account data management - Order status tracking - Profile updates - Security validation

1.12.7 About Module (modules/about/)

Purpose: Company information and brand building

Components: - AboutHero.jsx - Company introduction - CompanyStory.jsx - Mission and vision - CoreValues.jsx - Value proposition - TeamSection.jsx - Team member profiles - ContactCta.jsx - Contact information

Business Logic: - Content management - Team data display - Contact form validation - Newsletter integration

1.13 Performance Requirements

1.13.1 Loading Performance

Metric	Target	Current
First Contentful Paint	< 1.5s	✅ 1.2s
Largest Contentful Paint	< 2.5s	✅ 2.1s
Time to Interactive	< 3.0s	✅ 2.8s
Cumulative Layout Shift	< 0.1	✅ 0.05

1.13.2 Bundle Size Optimization

Main Bundle: ~498KB (gzipped: ~127KB)

About Page Chunk: ~27KB (lazy loaded)

CSS Bundle: ~44KB (gzipped: ~7KB)

Optimization Techniques:

- Code splitting by route
- Lazy loading for About page
- Tree shaking for unused code
- Image optimization and lazy loading

1.13.3 Responsive Performance

Mobile (< 640px):

- Touch-friendly interfaces
- Optimized image sizes
- Simplified navigation

Tablet (640px - 1024px):

- Grid layout adjustments
- Optimized touch targets
- Balanced content density

Desktop (> 1024px):

- Full feature set
- Multi-column layouts
- Enhanced interactions

1.14 Security & Compliance

1.14.1 Data Security

Client-Side Security:

1. Input validation on all forms
2. XSS prevention through React's built-in protection
3. No sensitive data storage in localStorage
4. Secure external links (rel="noopener noreferrer")

1.14.2 Privacy Compliance

Data Handling:

1. No personal data collection without consent
2. Clear privacy policy (placeholder)
3. Cookie usage notification
4. User data control options

1.14.3 Accessibility (WCAG 2.1)

Level AA Compliance:

1. Semantic HTML structure
 2. ARIA labels for interactive elements
 3. Keyboard navigation support
 4. Color contrast ratio > 4.5:1
 5. Screen reader compatibility
-

1.15 Future Enhancements

1.15.1 Phase 2: Backend Integration

Planned Features:

- REST API integration
- Real user authentication
- Database-driven product catalog
- Order management system
- Admin dashboard

1.15.2 Phase 3: Advanced Features

Advanced Functionality:

- Search functionality with filters
- Product recommendations
- Wishlist and favorites
- Customer reviews and ratings
- Social media integration

1.15.3 Phase 4: Mobile App

Mobile Development:

- React Native mobile app
- Push notifications
- Mobile-specific features
- App store deployment

1.15.4 Phase 5: PWA Features

Progressive Web App:

- Offline functionality
- Service worker implementation
- App-like experience
- Push notification support

1.16 Appendices

1.16.1 Appendix A: Technical Dependencies

```
{
  "dependencies": {
    "react": "^19.1.0",
    "react-dom": "^19.1.0",
    "react-icons": "^5.5.0",
    "react-router-dom": "^7.7.1"
  },
  "devDependencies": {
    "@vitejs/plugin-react": "^4.3.4",
    "tailwindcss": "^3.4.15",
    "vite": "^7.0.6",
    "gh-pages": "^6.2.0"
  }
}
```

1.16.2 Appendix B: Browser Compatibility

Supported Browsers:

- Chrome 90+
- Firefox 88+
- Safari 14+
- Edge 90+
- Mobile Safari 14+
- Chrome Mobile 90+

1.16.3 Appendix C: Deployment Configuration

```
// vite.config.js
export default defineConfig({
  plugins: [react()],
  base: '/BuyZy/',
  build: {
    outDir: 'dist',
  },
})

// package.json deployment scripts
{
  "homepage": "https://Almuhajiri.github.io/BuyZy",
  "scripts": {
    "predeploy": "npm run build",
    "deploy": "gh-pages -d dist"
  }
}
```


1.16.4 Appendix D: Git Commit History

Recent Commits:

- feat: initialize React + Vite project with TailwindCSS
- feat: implement core application architecture
- feat: implement comprehensive homepage module
- feat: create advanced category browsing system
- feat: implement complete e-commerce functionality
- feat: create comprehensive About page module
- docs: add comprehensive project documentation
- feat: add React application entry point and base styling
- feat: configure GitHub Pages deployment
- fix: configure React Router basename for GitHub Pages
- docs: update comprehensive README
- cleanup: remove unnecessary development documentation files

Document Status:  Complete

Last Updated: August 4, 2025

Next Review: Upon feature updates

This Business Requirements Document serves as the comprehensive specification for the BuyZy e-commerce platform, detailing all functional requirements, technical architecture, and business logic for successful project delivery.