

**ADVANCED WEB DEVELOPMENT**

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**Software Requirements** **Specification**

Project: BLAK BOX | Tech Store

Team: 3

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# Introduction

This Software Requirements Specification (SRS) document describes the functional and non-functional requirements for the **Blak Box** website project. The system is designed to provide an intuitive, responsive, and user-friendly platform for browsing and managing a wide range of technology products organized by category.

The purpose of this document is to define the software functionalities, interfaces, performance requirements, constraints, and other relevant aspects to ensure a common understanding between stakeholders, including developers, clients, and project managers.

This document follows the IEEE Std 830-1998 guidelines to maintain a clear and structured format. It serves as the foundation for system design, development, and future maintenance, ensuring that the delivered product meets both user expectations and business objectives.

## Purpose

The purpose of this project is to design and develop **Blak Box**, a modern and responsive e-commerce website focused on selling technology products. The platform will allow users to explore and view items grouped into categories such as laptops, smartphones, accessories, and other electronics. The website will feature detailed product pages, search and filter functionalities, user reviews, and product galleries to enhance the shopping experience.

In addition to the user-facing site, Blak Box will include a powerful administrative panel where authorized personnel can manage the entire system. This includes tasks such as adding, editing, and deleting products; organizing product categories; managing inventory; monitoring user activity and analytics; and handling customer inquiries. This document outlines the software requirements necessary to guide the development and ensure that the platform meets both business goals and user expectations.

## Scope

Blak Box will be a web-based solution accessible via desktop and mobile browsers. The main features of the system include:

* A modern homepage showcasing featured products and categories
* Product catalog organized by categories with detailed descriptions and images
* Search and filtering options to enhance product discovery.
* A product detail page with specifications and images.
* An administrative dashboard for full content and inventory management.
* Category management, including the ability to create, update, and remove categories.
* User-friendly content management system requiring no technical expertise.
* Website analytics and reporting tools for business insights.
* Basic security features including SSL encryption.
* Social media integration for marketing and engagement.

At this stage, the platform will not include online payment processing or delivery tracking, but these features may be considered in future iterations.

## Personnel Involved

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## Definitions, acronyms and abbreviations

|  |  |
| --- | --- |
| Name | Description |
| User | Person who will use the system to consult information and manage processes. |
| Employee | Person who will use the system for employee administrative purposes. |
| Admin | Person who will use the system for company administrative purposes. |
| SRS | Software Requirements Specification |
| FR | Functional Requirement |
| NFR | Non-functional requirement |
|  |  |

## References

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## Summary

This project involves the development of a web-based e-commerce platform for a technology store specializing in selling components and accessories for building custom PCs. The system will allow users to browse a wide range of products organized into specific categories (e.g., graphics cards, processors, memory, etc.), view detailed product information, and make secure online purchases. The platform will provide a user-friendly interface where customers can search, filter, and view products based on various criteria such as price, brand, and specifications.

# General Description

## Product Perspective

The proposed system is a standalone web application developed to support the operations and public presentation of a business about to start selling products, specifically a technology store specializing in the sale of desktop computer components. It is conceived as a standalone solution that provides a structured and informative interface to showcase products, facilitate customer communication, and improve overall service visibility.

It is designed to be deployed on a web server and accessed through standard web browsers on desktop computers and mobile devices. The architecture will follow modern web development standards, ensuring maintainability, responsiveness, and accessibility.

The system is also designed with scalability in mind, allowing for future extensions such as online payment modules, user authentication with APIs, and others, although these are not part of the initial scope.

## Product Functionality

The product is an e-commerce platform designed for a technology store that offers components and accessories for building PCs. Its functionality should ensure that users can perform the following key actions:

* **Catalog Browsing:** Users should be able to view and explore available products, organized by category (such as processors, graphics cards, RAM, etc.).
* **Product Search:** Users should be able to search for products using keywords, filters, and categories to quickly find what they need.
* **Viewing Product Details:** Users should be able to see detailed information about each product, including images, technical descriptions, specifications and pricing.
* **Product Purchase:** Users should be able to add products to their shopping cart, review their selection, and checkout securely.
* **User Account Management:** Users can create and manage their accounts, save shipping addresses, and make future purchases more easily.
* **Inventory Management (Administrator):** The store administrator must be able to manage available products, ensuring that inventory is up to date.
* **Order Management (Administrator):** The administrator must be able to view and manage customer orders, ensuring that each order is processed and shipped correctly.

## User Characteristics

The system is designed for use by the following types of registered users:

**Customers (End Users)**

Customers are the primary users of the platform. They are people who visit the website to purchase technology components for building PCs. User characteristics include:

* **Varying technical knowledge:** Customers can have varying levels of technology knowledge, from novices seeking assistance in product selection to hardware experts who already know the specifications and brands of the components they need.
* **Objective:** Their primary goal is to browse the product catalog, select the components they wish to purchase, add them to the cart, and complete the purchase process.
* **User experience requirements:** Users expect a smooth and easy-to-navigate shopping experience. The interface should be intuitive, allowing even less experienced users to quickly find the products they are looking for.
* **Mobile access needs:** Many customers will use mobile devices to make purchases, so the website should be fully responsive and optimized for mobile devices.

**Store Administrator**

The administrator is the user in charge of managing and maintaining the online store. This user profile has specific responsibilities regarding product, order, and user management. The administrator's characteristics are as follows:

* **Advanced technical knowledge:** The administrator must have a good understanding of the web management platform and content management systems (CMS) used to update the product catalog, make system adjustments, and manage orders.
* **Responsibilities:**
  + **Product management:** Add, update, or delete products in the catalog, define prices, descriptions, and specifications.
  + **Order management:** Monitor and process customer orders, manage inventory, and coordinate shipping.
  + **User management:** Manage user accounts, review purchase history, and resolve potential customer issues.
  + **Website maintenance:** Ensure the website is operational by performing regular updates and maintaining platform security.
* **System access:** Administrators have access to secure areas where they can manage all relevant information about the store, products, users, and sales. Additionally, they must be able to generate sales reports and traffic statistics to evaluate store performance.

## Constraints

* The system must be accessed through the Internet using standard web browsers.
* A unique domain name will be used to represent the **Blak Box** brand online.
* The platform will be developed using HTML, CSS, JavaScript, PHP, and RESTful APIs for backend communication and data handling.
* The web server must be capable of handling multiple concurrent user requests to ensure high availability and performance.
* The application will follow a client/server architecture, with a clear separation between the user interface and backend services.
* The system should maintain platform independence, allowing users to access it from various operating systems and devices without compatibility issues.
* The design should be simple, clean, and modular, allowing for ease of maintenance and future scalability.

## Assumptions and Dependencies

* It is assumed that users (customers, administrators, and staff) will have a stable Internet connection to interact with the Blak Box platform.
* It is assumed that administrative users will be trained to use the system's backend panel to manage products, categories, and content.
* It is assumed that users will access the site using modern web browsers that support HTML5, CSS3, JavaScript, and secure HTTPS connections.
* It is assumed that the web server and PHP environment will be properly configured and remain operational 24/7 to ensure continuous service.
* It is assumed that Blak Box will manage or be in the process of launching a tech product line, and this website is a digital extension of that business.
* The system depends on a reliable hosting provider for deploying the PHP-based application and on a stable database to store product, user, and administrative data.
* The application will rely on external APIs (e.g., for analytics, map integration, or inventory syncing) where necessary, and proper API keys and endpoints must be available.

### 3. Specific Requirements

### **3.1. Common Interface Requirements**

#### **3.1.1. User Interfaces**

* The system must provide a modern, graphical, and responsive user interface (GUI) accessible via standard web browsers (Chrome, Firefox, Edge, Safari).
* The interface must adapt to various devices: desktops, tablets, and smartphones.
* The UI must include clear navigation sections such as "Home", "Categories", "Products", "About Us", "Contact", and optionally "Cart" and "Wishlist".
* Product listings must show images, prices, short descriptions, and buttons like "Add to Cart", "Compare", "Wishlist".
* Admin forms for creating/editing products and categories must include consistent UI elements like input fields, dropdowns, switches, and image uploads.
* Accessibility standards (WCAG) must be followed for usability by people with disabilities.

#### **3.1.2. Hardware Interfaces**

* The system is designed for use on any device with a modern browser.
* No external hardware is required (e.g., barcode readers or POS systems).

#### **3.1.3. Software Interfaces**

* Must support integration with:
  + Google Analytics for traffic analysis.
  + Google Maps API to display store locations.
  + WhatsApp for order notifications.
  + Content Management Tools in the admin panel.
* The system will operate over HTTP/HTTPS protocols using secure SSL communication.
* No support for real-time socket communication or email automation in this phase.

### **3.2. Functional Requirements**

#### **3.2.1. Home Page**

* Must show featured products and product categories.
* Quick access links to catalog, categories, and cart.
* Optionally, highlight promotions and discounts.

#### **3.2.2. Product Catalog**

* Users must be able to view all products grouped by category and brand.
* Product detail view must include full description, images, price, availability, technical details, discount info (if applicable), and customer rating.
* Filtering must be available by brand, category, price range, stock, or discount.

#### **3.2.3. Product Search**

* Users must be able to search by keyword (name, brand, category).
* Results must update based on active filters.
* Suggestions or autosuggestions are optional.

#### **3.2.4. Product Comparison**

* Users must be able to select and compare products by features (e.g., USB, RGB, Wireless).
* The comparison must show side-by-side attributes.

#### **3.2.5. Product Ratings and Reviews**

* Users must be able to submit a rating and comment for a product.
* The system must store and calculate the average product rating.
* Reviews must be visible per product page.

#### **3.2.6. Discounted Products**

* Users must be able to view all products on discount.
* Discounts must be represented as percentage or fixed amount.

#### **3.2.7. Cart Management**

* Users must be able to:
  + View their cart contents.
  + Add/remove products.
  + Update quantities.
  + View total cost, including taxes.
* The system must allow checkout and cart clearing.
* A checkout URI must place the order and process the payment.

#### **3.2.8. Wishlist Management**

* Users must be able to:
  + Create wishlists.
  + Add/remove products to/from wishlist.
  + View wishlist products.
* System must notify users when a product in their wishlist is back in stock (via email or WhatsApp).

#### **3.2.9. Inventory Management (Admin)**

* Admins must be able to:
  + Add, edit, or delete products.
  + Update stock quantity individually or through bulk actions.
  + View low-stock alerts.
  + Access inventory summary (total products, out-of-stock, categories).

#### **3.2.10. Category & Brand Management (Admin)**

* Admins must:
  + Add, edit, and delete product categories and brands.
  + Categories must have names and descriptions.

#### **3.2.11. Order Management**

* Admins must:
  + View orders with products, quantity, status, address, and payment.
  + Update order status: "pending", "shipped", "delivered", "cancelled".
  + View order history per user.
* Users must be able to:
  + View their order history.
  + Cancel an order if not yet shipped.

#### **3.2.12. Shipping Management**

* System must allow:
  + Creating shipping records linked to orders.
  + Viewing and updating shipping addresses.

#### **3.2.13. Payment Management**

* System must:
  + Record payments linked to orders and users.
  + Update payment status (e.g., confirmed).
  + Validate if payment was successful.
  + Provide full list of payments and payment history.

#### **3.2.14. Reporting (Admin)**

* Admins must have access to:
  + Inventory summary report.
  + Low stock report.
  + Top-selling products report.

#### **3.2.15. Notifications**

* The system must:
  + Notify users via WhatsApp when order is shipped or available.
  + Notify when wishlist product returns to stock.

### **3.3. Non-Functional Requirements**

#### **3.3.1. Performance**

* UI must load in <3 seconds under normal conditions.
* Common actions (add to cart, view product) must respond in <2 seconds.

#### **3.3.2. Security**

* Admin access must be restricted with secure authentication.
* Users can only access their own orders, wishlists, and personal data.
* Passwords must be encrypted and not returned in any response.
* Sensitive data must be stored securely (encryption and best practices).
* All communication must be over HTTPS.

#### **3.3.3. Reliability**

* Must recover from minor failures (e.g., temporary DB connection loss).
* Database must support regular backups.

#### **3.3.4. Availability**

* System must be available 95% of business hours.

#### **3.3.5. Maintainability**

* Codebase must be modular and well documented.
* Must support easy updates (e.g., add new category, module).
* Error isolation must be possible.

#### **3.3.6. Portability**

* Admin and dev environments must work on Windows.
* Web platform must work on modern browsers (Chrome, Firefox, Edge).