

**ADVANCED WEB DEVELOPMENT**

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**Software Requirements** **Specification**

Project: BLAK BOX | Tech Store

Team: 3

Name: Syntax Squad

Members:

Diana Carolina Guerra Coronel

Brayan Josué Jácome Noroña

Sebastián David Lasso Vela

NRC: 22406

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| Syntax Squad |  |

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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, images, and customer reviews
* 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

|  |  |
| --- | --- |
| Name | Diana Carolina Guerra Coronel |
| Role | Analyst, designer and programmer |
| Professional Category | Software development engineer |
| Responsibility | Information analysis, design, communication with the customer, developer. |
| Contact Information | [dcguerra2@espe.edu.ec](mailto:%64%63%67%75e%72ra%32@es%70e.%65d%75%2ee%63) |

|  |  |
| --- | --- |
| Name | Brayan Josué Jácome Noroña |
| Role | Analyst and documenter |
| Professional Category | Software development engineer |
| Responsibility | All project documentation and processes, developer. |
| Contact Information | [bjjacome1@espe.edu.ec](mailto:%62j%6a%61com%651@%65%73%70%65%2e%65%64u%2e%65c) |

|  |  |
| --- | --- |
| Name | Sebastián David Lasso Vela |
| Role | Server Administrator |
| Professional Category | Software development engineer |
| Responsibility | All project documentation and processes, developer. |
| Contact Information | [sdlasso@espe.edu.ec](mailto:sd%6ca%73%73%6f@%65%73%70%65%2ee%64%75%2eec) |

## 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 compare 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, pricing, and purchasing options.
* **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, view their order history, 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.

# Specific Requirements

## Common interface requirements

### User Interfaces

The system will provide a modern, graphical user interface (GUI) accessible through all standard web browsers. The interface will be fully responsive and optimized for different screen sizes and devices, including desktop computers, tablets, and smartphones.

Navigation will be intuitive and user-centered, featuring a top menu or side panel with clearly labeled sections such as "Home", "Categories", "Products", "About Us", and "Contact". Product listings will include images, descriptions, prices, and action buttons (e.g., "View", "Add to Cart", "Contact"). Forms used for administrative tasks (e.g., product creation or editing) will utilize consistent components such as text inputs, dropdowns, toggles, and file uploads.

Accessibility standards (WCAG) will be considered in the design to ensure the platform is usable by individuals with disabilities.

### Hardware Interfaces

The system does not require any interaction with specialized hardware devices. It is designed to operate on any device capable of running a modern web browser, including desktops, laptops, tablets, and smartphones. No external hardware (e.g., barcode scanners, POS systems) is necessary for the basic operation of the website.

### Software Interfaces

The system will integrate with the following third-party software and services:

* **Web Browser Compatibility**: Chrome, Firefox, Microsoft Edge, and Safari (latest stable versions).
* **Google Analytics**: for tracking website traffic, user engagement, and behavior across the site.
* **Google Maps API**: optionally, to show store location(s) and contact details.
* **WhatsApp Integration**: for quick customer support through clickable chat links.
* **Content Management Tools**: built into the admin dashboard to manage products, categories, and content without coding.

There are no other software dependencies required for the system’s initial version.

### Communication Interface

All communication between the client and server will be handled using standard HTTP/HTTPS protocols. The system will enforce SSL encryption to protect user data, especially when handling admin logins, product management, and user inquiries.

At this stage, the website will not support real-time communication (e.g., live chat), email automation, or socket-based connections, though these may be considered in future phases.

## Functional requirements

### Home Page

* The system must display a home page with clear information about available products and product categories (e.g., processors, graphics cards, etc.).
* The home page must include quick links to key sections, such as the product catalog, specific categories, and access to the shopping cart.

### Product Catalog

* The system must allow users to view a product catalog organized into different categories (such as "Processors," "RAM," "Motherboards," etc.).
* The system must allow detailed viewing of each product, including images, descriptions, technical specifications, prices, and availability.
* The catalog must allow filtering products by characteristics such as brand, price, compatibility, etc...

### Product Search

* The system must allow users to search for products using keywords (such as product name, brand, or component type).
* The search must be able to display results in real time, adjusting based on selected filters (e.g., price range, component type).

### Shopping Cart

* The system must allow users to add products to the shopping cart easily and quickly.
* The system must display a preview of the cart where users can see the added products, their quantity, and the total price.
* The system must allow users to modify the cart contents (add or remove products, change quantities).
* The system must update the cart total, including taxes and shipping costs, in real time.

### User Account Management

* The system must allow users to create an account by providing information such as name, email, shipping address, and payment details.
* The system must allow users to log in to their account to access their purchase history, manage their shipping addresses, and save information for future purchases..

### Inventory Management (Administrator)

* The system must allow the administrator to manage product inventory, allowing them to add, modify, or delete products from the store.
* The system must allow the administrator to edit product descriptions and prices quickly and easily.

### Order Management (Adinistrator)

* The system must allow the administrator to view all orders placed by customers, including details such as products purchased, quantities, shipping addresses, and payment methods.
* The system must allow the administrator to update order statuses, such as "pending," "shipped," "delivered," and "cancelled."

### System Security

* + - * The system must allow secure user authentication, especially for administrator access.

## Non-functional requirements

### Performance requirements

* Ensure that query design or other processing does not significantly affect database performance or network traffic.
* The system should load the main user interface in less than 3 seconds under normal network conditions.
* Common operations should be executed in less than 2 seconds.

### Security

* Only administrators will have access to critical system functions (such as user and service management).
* Access control policies must be established to ensure that users can only view and modify information related to their role.
* Sensitive data (such as personal or payment information) must be stored securely, following good encryption and protection practices.

### Reliability

* The system must be able to automatically recover from minor failures without losing critical information.
* Regular backups of the database must be performed.

### Availability

* The system must be available at least 95% of the time during business hours.

### Maintainability

* The source code must be documented to facilitate maintenance and evolution.
* The system must allow for updating modules (for example, adding new services) without affecting overall functionality.
* A modular architecture must be followed to facilitate error isolation and modifications.

### Portability

* The system is designed to be used on Windows operating systems in its administrative and development environments.
* The web platform will be accessible from modern Windows-compatible browsers (such as Google Chrome, Microsoft Edge, and Mozilla Firefox).