**Online Electronics Store**

**1. General Description**

The project is an online store specializing in the sale of electronic equipment. This store will allow users to browse, search, select, and purchase electronic products such as smartphones, laptops, cameras and accessories. Additionally, it will include functions for inventory management, payment processing, and customer support.

**2. Project Objectives**

* Facilitate the purchase of electronic equipment through an intuitive and secure online platform.
* Offer a personalized user experience through recommendations and promotions.
* Optimize inventory and order management to improve operational efficiency.

**3. Functional Requirements**

1. **User Management**
   * User registration and authentication.
   * User profile management (personal information, purchase history, etc.).
   * Password recovery.
2. **Product Catalog**
   * Product display by categories (smartphones, laptops, etc.).
   * Advanced search filters (by brand, price, features).
   * Detailed product descriptions with images, videos, and technical specifications.
3. **Shopping Cart**
   * Add or remove products from the cart.
   * Update product quantities in the cart.
   * Save carts for future purchases.
4. **Order Processing**
   * Secure checkout with multiple payment options (credit cards, PayPal, etc.).
   * Validation of shipping addresses.
   * Order and shipping confirmations via email.
5. **Inventory Management**
   * Automatic inventory updates with each sale.
   * Notifications of out-of-stock or low-inventory products.
   * Restocking system for popular products.
6. **Customer Support**
   * FAQ and product guides.
7. **Recommendation System**
   * Product recommendations based on browsing and purchase history.
   * Personalized offers and promotions.
8. **Reviews and Ratings**
   * Allow users to leave reviews and rate products.
   * Display average ratings on product pages.
9. **Notifications**
   * Email or SMS notifications about order status.
   * Reminders of abandoned cart items.

**4. Non-Functional Requirements**

1. **Security**
   * Encryption of sensitive data (payment information, passwords).
   * Two-factor authentication for account access.
2. **Scalability**
   * Ability to handle a large number of simultaneous users.
   * Modular architecture to facilitate expansion and addition of new features.
3. **Performance**
   * Fast page loading, with a response time of less than 2 seconds.
   * Optimization of images and multimedia to improve speed.
4. **Availability**
   * High availability (99.9% uptime).
   * Automatic backup system for critical data.
5. **Usability**
   * Intuitive and easy-to-navigate user interface.
   * Compatible with mobile devices and popular browsers.
6. **Maintenance**
   * Clear documentation for system maintenance and updates.
7. **Compatibility**
   * Integration with local and international payment and shipping systems.
   * Support for multiple currencies and languages.

Some modules that the system could have.

**5. System Modules**

1. **Authentication and User Management Module**
   * Registration, login, profile management, and password recovery.
   * This module allows users to register on the platform, log in, and manage their personal profiles, including updating information such as addresses and payment details. In addition, it offers functionality to retrieve passwords via an emailed link, and optionally provides two-factor authentication to enhance account security.
   * Complexity: Medium
   * 1 junior programmer and 1 senior programmer
2. **Product Catalog Module**
   * Management of categories, products, and their descriptions.
   * This module manages the organization and visualization of the products available in the store, allowing the categorization of items, and the management of their descriptions, images, and technical specifications. In addition, it includes an advanced search system that allows users to find specific products through filters such as brand, price, and technical characteristics.
   * Complexity: Medium
   * 1 junior programmer and 1 senior programmer
3. **Shopping Cart Module**
   * Cart management, total calculation, and update processes.
   * This module makes it easy for users to manage their product selections in a shopping cart, allowing them to add, delete or modify the quantity of items. It also takes care of the automatic calculation of the purchase total, including taxes and possible discounts, and saves the cart for future visits, improving the shopping experience.
   * Complexity: High
   * 2 senior programmers
4. **Order Processing Module**
   * Checkout, payment methods integration, and order confirmation.
   * This module covers the entire checkout process, from shipping address validation and payment method selection to final order confirmation. It integrates multiple payment options such as credit cards and PayPal, and sends automatic email confirmations to ensure that customers receive details about their orders and shipments.
   * Complexity: High
   * 2 senior programmers
5. **Inventory Management Module**
   * Inventory control and updates, notifications, and restocking.
   * This module allows real-time monitoring and updating of product inventory, ensuring that stock is automatically adjusted with each sale. It also generates notifications for managers when inventory levels are low or when a product is out of stock, facilitating automatic replenishment of popular items.
   * Complexity: High
   * 2 senior programmers
6. **Customer Support Module**
   * FAQ management.
   * Chat for special needs
   * This module provides several customer support channels, ticketing system for more complex queries, and a knowledge base with frequently asked questions (FAQ). Its objective is to offer fast and effective assistance, solving problems or doubts that may arise before, during or after the purchase.
   * Complexity: Low
   * 1 junior programmer
7. **Reviews and Ratings Module**
   * Management of user reviews and display of ratings.
   * This module allows users to leave reviews and ratings of products they have purchased, providing a space to share their experiences. The ratings are displayed on product pages, helping other users in their purchase decision process by showing aggregated opinions and ratings.
   * Complexity: Low
   * 1 junior programmer
8. **Promotions and Discounts Module**
   * Creation and management of coupons, discounts, and offers.
   * Complexity: Low
   * 1 junior programmer
9. **Notifications Module**
   * Sending notifications via email and SMS.
   * This module is responsible for sending automatic notifications to users, either by email or SMS, to keep them informed about the status of their orders, important updates, or reminders of abandoned carts.
   * Complexity: Medium
   * 1 senior programmer, 1 junior programmer
10. **Reports and Analytics Module**
    * Generation of sales reports, inventory analysis, and customer insights.
    * This module enables the generation of detailed reports on sales, inventory management, and customer behavior. It uses data analysis to provide insights on store performance, identify buying trends, and assist in decision making to optimize the operation and increase sales.
    * Complexity: High
    * 2 senior programmers
11. New Module

* Complexity: High
* 2 senior programmers

This online store project will be designed to provide a seamless and secure shopping experience, ensuring customer satisfaction and facilitating the store's operational management.

**Number of people involved**

For the software development we would need 3 developers who can work in the different modules, in the project administration 1 Project Manager to coordinate the activities, times and resources and finally a person in charge of the design and so that it can create an intuitive and attractive interface.

**Necessary Resources**

Technological:

* Cloud servers to host the store and database.
* Development tools (IDE, version control).
* Integrated payment and shipping management services.

Human resources:

* Development team, design and project manager.

Financial:

* Budget for servers and development tools.

**Time**

Planning: 2 weeks.

Development:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module** | **Programmers** | **Day** | **Weeks** | **Cost per day** | **Total** |
| Authentication and User Management | 1 junior  1 senior | 21 | 3 | **1000**  **1300** | **48300** |
| Product Catalog | 1 junior  1 senior | 28 | 4 | **1000**  **1300** | **64400** |
| Shopping Cart | 2 seniors | 28 | 4 | **1300** | **72800** |
| Order Processing | 2 seniors | 25 | 3.5 | **1300** | **65000** |
| Inventory Management | 2 seniors | 25 | 3.5 | **1300** | **65000** |
| Customer Support | 1 junior | 15 | 2 | **1000** | **15000** |
| Reviews and Ratings | 1 junior | 15 | 2 | **1000** | **15000** |
| Promotions and Discounts | 1 junior | 15 | 2 | **1000** | **15000** |
| Notifications | 1 junior  1 senior | 21 | 3 | **1000**  **1300** | **48300** |
| Reports and Analytics | 2 seniors | 28 | 4 | **1300** | **72800** |
| Branch Management | 2 seniors | 28 | 4 | **1300** | **72800** |
| Total |  |  | **Parallel Work** **Phase 1**: 4 weeks **Phase 2**: 4 weeks **Phase 3**: 4 weeks  **12 weeks - 3 months** |  |  |

Testing: 1 month to ensure product quality.

Launch: 2 weeks to launch.

**Total estimated time:**

**Cost**

* **Project Manager: 40000 per month**
* **Senior programmer: 1300 per day (13)**
* **Junior programmer: 1000 per day (7)**

**Main Activities**

Project Planning: Define requirements and scope of the project.

System Development: Coding of system modules.

Testing and Validation: Unit and integration testing to ensure software quality.

System Release: Deployment on production servers.

Maintenance and Support: Incident management and post-launch updates.

**Resources**

Hardware and Software: Servers, database, development tools.

Time and Budget: The time needed is estimated in 6 months with a budget that covers development, testing, and launching, as well as maintenance expenses.

Configuration identification (item)

-New module centralize

Que parte de mi proyecto afecta y como

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_New module\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Branch Management:**

Enable the management of several physical branches, inventory allocation and logistic coordination between branches and the online store.

**Module Functionalities**

1. Registration and Management of Branches:

* Add, edit and delete branches.
* Allocation of inventories to each branch.
* Geographic location control to optimize shipments and pick-ups.

1. Inventory by Branch:

* Automatic update of each branch's inventory after a sale.
* Stock transfer between branches.
* Low inventory alerts in a specific branch.

1. Distributed Orders:

* Ability for online orders to be dispatched from different branches based on the customer's location.
* Synchronization of stock between online store and physical branches.

1. Sales Reports by Branch:

* Generation of detailed reports per branch.
* Comparative analysis of the performance of each branch.

Impact on Existing Modules:

1. **Inventory Module:**

* Actually, inventory management is handled centrally. With the new module, it would be necessary to modify this system to allow inventory management in a distributed manner, allowing products to be assigned to specific branches and stock to be transferred between them.
* Out-of-stock notifications will now be handled at the branch level, in addition to the global level.

1. **Order Processing Module:**

* The checkout shall be adjusted to allow selection of the branch from which the order will be shipped, either automatically based on the customer's location or by manual selection.
* Validate that the available inventory in the selected branch is synchronized with the general inventory.

1. **Shopping Cart Module:**

* New options can be added for the customer to select the nearest branch to pick up the order, if they prefer that option.
* It should allow to see the availability of the product in the branches close to the customer.

1. **Notifications Module:**

* Notifications for orders and stock updates should now include branch specific information.

1. **Reports and Analytics:**

* The module should be modified to include the ability to generate reports by branch, providing specific data such as sales, inventory, and orders processed at each branch.

**SWOT Analysis of the Proposed Change:**

**Strengths:**

**Improved logistics and customer service:** By enabling inventory allocation to branches and synchronization with the online store, product delivery time to the customer is optimized.

**Diversification of operations:** The new module enables decentralized management, which improves efficiency when handling inventories in different locations and facilitates the transfer of products between branches.

**Improved inventory management:** Detailed inventory tracking by branch, with low stock alerts, will improve accuracy and reduce out-of-stock losses.

**Adaptability to expansion:** Inclusion of multiple branches allows for better control over business expansion.

**Opportunities:**

**Geographic expansion:** The ability to manage multiple branches facilitates expansion to new locations, which can increase market coverage.

**Improved user experience:** Offering options such as in-store pickup and selection of the nearest branch improves the customer experience, which could increase sales.

**Improved analytics:** By generating reports per branch, more informed decision making will be possible, optimizing the operation of each point of sale.

**Process automation:** The use of the automatic alerts and updates system reduces the operational burden on manual inventory management.

**Weaknesses:**

**Technical complexity:** Integration of this new module requires modifications to several existing systems (shopping cart, inventory, order processing, notifications), which increases the risk of errors or delays.

**Additional costs:** This change increases development time and associated costs, both in terms of programming and infrastructure (e.g., database synchronization between branches).

**Threats:**

**Impact on user experience if it fails:** If the implementation of branch selection or distributed inventory management is not smooth, it could lead to confusion or delays, negatively affecting customer satisfaction.

**Synchronization problems:** Failures in the synchronization between local and global inventories could cause stock-outs in a branch, affecting customer perception.

**System overload:** If the system is not properly designed to handle multiple branches and a large number of simultaneous transactions, performance could be affected, increasing response time or causing service outages.