

**SOFTWARE ENGINEERING PROJECT**

**AN E-COMMERCE MARKET**

**SOFTWARE**

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The e-commerce software is an online marketplace platform for multiple sellers to set up their market and sell their products online, while buyers can search the product they want and look through the catalogue of products distributed in various categories for the buyer to reach the seller and buy the product. This software is equipped with various tools to manage and promote their online store, including inventory management, shipping and tax calculation, marketing and analytics, and customer relationship management. These tools are well programmed to help both the seller and the buyer to sell and buy their products respectively. The software will also ensure the security and privacy of customer data, as well as provide a secure payment gateway for transactions.

* 1. **Purpose**

The main purpose of this project is to supply a simple yet diverse platform for sellers to market their products without owning a physical outlet through a single gateway using the internet as the sole medium. Customers can easily browse through the catalogue which is divided into categories and subcategories which will help the costumers to choose and reach their required product or the costumers can simply search and reach their desired product all from their phone.

* 1. **Project Scope**

This project is for vendors worldwide to have an online platform that they can use to get in touch with the customers both locally and internationally that are interested in their product and are willing to buy it. With the comfort of not being physically present. All this is done using just a simple device, either phone or computer. This software will provide the security of not getting scammed and will verify the sellers before giving them the platform to work on. The Vendors will have complete control on their market place and all the data will be secured and they will have all the tools required to manage their store and they will be given marketing and advertising tools to advertise their product in the market place to make their product stand out. While the user will have direct access to all stores and will easily purchase their product, add them to Wishlist for later purchase and have a shopping cart to easily save their products and buy them at once. The software will accurately calculate everything, including GST, delivery charges and any other charges for both the seller and customer can have an efficient, reliable and secure platform to work on which can and will be able to be used internationally.

1. **DESCRIPTION**
   1. **Product Description**

* Having secure registration and data gathered by the software of users so they can easily without any concern use our software.
* This project is designed to have a marketplace where a seller lists his product and prices it according to his likes and the buyer buys it from computer directly.
* This software is a middleman between buyer and the seller, that doesn’t require a physical place and it could be done easily via the internet
* This software will have a shopping cart, just like a real one this cart is filled with products the customer needs and then the person can easily checkout all the products via delivery man.
* The vendor, just like a real shop owner, will have a shop page where all the products that the vendor is selling will be displayed.
* Each product listed will have a title, images, a mini description, a detailed description, buying options, price, and will be categorized.
* The software will be equipped with a feedback system for the customers to give feedback.
* All the internal dealings will be left for the vendors and the sellers, such as processing, delivery details, complaints etc.
* Customers will get notifications of all the ongoing offers, and the notifications of the following stores.
* There is a diverse paying section suited to the customer and if the product or seller is local to them they also get a cash on delivery option too.
* The software will be programmed to have complete and accurate calculations for both the users and the costumers, and costumers will even get a detailed receipt for their order which will show actual price per product, GST, Shipping, discounts (if any), and then the total amount that is paid by the costumer.
* The software will give the vendors the opportunity to give away coupons and benefits to their regular customers.
  1. **Product Functions**
* Inventory management: The software will have complete and accurate list of the products you have in your inventory, the products will be reupdated every time they sell and you can add more later on.
* Security: The product will keep your as well as your credit information.
* Tools: vendors will be given marketing, listing and selling tools to help the with the selling
* Analytics: The vendors will be given analytics about their products and sales as well as the trend of products that are selling all over the store for better knowledge of the market
* Mobile optimization: The products will be optimized for mobile phone as well so its compatible for mobile phone users
  1. **Operating Environment**

The operating environment of the software is as follows:

* Operating systems: IOS, Android, Windows, Linux, Mac OS, Ubuntu.
* Hardware: A Personal computer with the required operating system, 64gb of hard disk, 4 Gb ram. Or A mobile phone that runs android or iOS operating system, 2 Gb ram, 16gb storage.
* Inputs: Keyboard, Mouse.
  1. **Assumptions and Dependencies**

Various Assumptions and dependencies went in the creation of this software.

The assumptions are:

* There system code should not have errors.
* The system should be user friendly.
* The software should run for 24 hours a day, 7 days a week and 365 days a year.
* The software should be able to change with respect to the change in trends and advancement in technology.
* The software should be well protected, and all the user information will be secured.

The dependencies are:

* The software depends on the hardware and operating systems that’s going to run the software.
* The project will run depending upon the requirements and specifications set by the developers and the admin.
* The data should save up in the database accessible by the software.
* The server should be able to support a large amount of traffic without any problems.

1. **Requirements**
   1. **External Interface Requirements**

The external interface requirement` s are given as:

* + 1. **User Interface**

The user interface has been divided between the admin, vendor, and the customer. Admin has the entire control of the software. The admin can keep all the vendors in check and have control of the marketplace. The vendors will have access to marketing and their tools to sell products, interact with customers. The customers interact with the sellers to buy the product, shopping cart and then buy.

* + 1. **Hardware Interface**

The hardware required to run the software is a personal computer with the required operating system, 64gb of hard disk, 4 Gb ram. Or A mobile phone that runs android or iOS operating system, 2 Gb ram, 16gb storage.

* + 1. **Software Interface**

Since the system is purely software based, so software interface is highly important. The software interface will include, a home page, market pages, listings, search engine etc. which will be developed to run on search engines and even develop a mobile phone application depending on the updates and user requirements.

* + 1. **Communication Interface**

The communication interface will be communication between the vendor and customer so a message and feedback system will be added.

* 1. **Functional Requirements**

Following are the functional requirements for the e-commerce software:

1. **User management:** This will allow the admin and the software to assign roles to users. These roles could be vendor, customer, best costumer, best vendor etc. And this will also allow the admin and software to warn and ban unethical users too.
2. **Product Management:** The vendors will be able to add, edit, delete, describe, restock, and suspend their product listings and will be able to manage their products much more efficiently and for further help tools will be added to help.
3. **Order Management:** This will give the user the ability to process and manage orders, track order status and delivery, manage returns and cancellations, and generate invoices.
4. **Payment Processing:** This will help the users to receive and send payments by various means such as credit cards, debit cards, master cards, PayPal, etc.
5. **Inventory Management:** This will give the user the ability to set maximum and minimum quantities of each product or entire stock, manage stock levels and generate alerts for the stocks for restocking when they reach below the minimum level.
6. **Customer Management:** This system will give the user an ability to interact with customers, to store and manage their and their order information which will include their customizations, order history and billing information
7. **Marketing And Promotions:** The software will give the ability, as well as tools, to promote and market their products by giving discounts, promotions, advertisements, coupons etc. to make their product and market famous and generate traffic.
8. **Search Engine Optimizing:** The vendors will have SEO tools and ability to help them make their products more visible in search and will help generate more traffic.
9. **Mobile Optimization:** The Software will be developed to be mobile accessible so that the mobile users can easily interact with the software. This mobile optimization will include both mobile accessible website and an application.
10. **Shipping management:** This will give the ability to the users to connect their orders to shipping company, generate costs and track orders.
11. **Tax Management:** Tax management is the ability of the software to generate taxes of each product at the sale for different regions and then generate the sum to be paid by the end of each month.
12. **Reporting and analytics:** The software will generate a data driven insights and reports of sales, customer behavior, traffic generated and inventory levels.
13. **Integration with External Systems:** The ability to integrate with external systems, such as accounting software, shipping providers, and payment gateways.
14. **Data Security:** The Users data will be secured so that they could surf through the software without any hesitation.
15. **Customization and Extensibility:** The ability to customize the look and feel of the store and add custom features and integrations through APIs or plugins
    1. **Non - Functional Requirements**
       1. **Security Requirements:**
16. **Confidentiality:**  The user information will be confidential and the software will insure that the customer and payment info of that customer will be protected and secured from unauthorized parties.
17. **Integrity:** The software will insure that the customer info is neither tempered with or is corrupted.
18. **Authentication:** The user has to insure that they are who they are claiming to be by authorizing their data protected by passwords.
19. **Authorization:** Users will be allowed to access data they are authorized to use, so that they cant access and modify customer, order or payment info.
20. **Non-Repudiation:** The software ensures that the identity of the person who performed an action, such as making a purchase or updating customer data, cannot be disputed.
    * 1. **Efficiency Requirements:**
21. **Performance:** The software should preform rapidly, efficiently and smoothly, even at the highest possible traffic.
22. **Scalability:** Depending upon the scale of the business. The software should be able to scale up or down.
23. **Reliability:** The software should be reliable to work even in extreme conditions 24/7.
24. **User Experience:** The software will provide a smooth interface for the user to use the software. The software should be seamless, intuitive and enjoyable to use.
25. **Maintainability:** The software will be easily maintainable**,** with clear coding for maintaining it easily.
    * 1. **Usability Requirements:**
26. **Friendly interface:** The software will have a friendly interface, will be intuitive and enjoyable, easy to use, and have a clean and attractive interface.
27. **Accessibility:** The software should be accessible to users with disabilities, with features like alternative text for images and keyboard navigation.
28. **Learnability:** The software should be easy to learn, with a consistent user interface, clear instructions, and intuitive navigation.
29. **User Assistance:** The software should provide adequate user assistance, including help resources, tutorials, and customer support.
30. **User Feedback:** The software should provide real-time feedback to users, with clear and concise error messages, confirmation messages, and more.
31. **References:**

* https://www.slideshare.net/YogeshDhamke2/srs-online-shopping-website-for-tybsc-it