HandCrafted: An Online Shopping Website of Handicrafts

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Abstract. Online Shopping Website for Handicraft is a form of electronic commerce which allows consumers to directly buy goods (which are handmade) or services from a seller over the Internet. Most of the shopping sites are focusing on electronic gadgets, clothes etc. but no one particularly focusing on the products which is of handmade. Although Tripura is very famous for Handmade products and it supply all over the India, but people are not getting its product because of poor transport facilities. So, this paper focuses on developing a shopping site for upliftment of handmade products of Tripura. So, it will be beneficial for our government, businessmen of Tripura as well as customers. This paper focuses on developing an website which will be useful to anyone who wants to purchase items using internet even living in small city or villages.

Keywords: Handicrafts, online shopping website, entity relationship.

1. Introduction
Online purchasing is nowadays widely used especially for fashion retail marketing. At present time companies are developing websites as Internet is the only way to gain profit. The main goal for retailers is to build a web site which is informational and transactional in nature and can be used for advertising and direct marketing, sales, customer support and public relations. As per the research paper [1], McKinsey & Company and Salomon Smith Barney, E-tailors who sell through catalogues, stores, and online, are proved to be more profitable in earning money from customers. According to [2], Jupiter Research observes that there was a gaining profit of 21 percent from year 2002 to 2003 from customers through online shopping. The factors in holiday sales is dependent on many factors such as, online bargains, timesaving, and much more. The top categories of Online Shopping according to comScore Networks [3][4] are:
• Apparel and Accessories
• Office Supplies
• Home and Garden
• Health and Beauty
• Gifting
• Sporting Goods
Toys and Games

1.1. Goal
This website is developed to help interested aspirants to learn about application designing using JavaScript, JSP, Bootstrap and HTML from their basic capabilities. This application allows understanding the basics about the appearance of a first web page and how a complete working application can be built from scratch. It also allows understanding the concept of user integrated graphics and how JavaScript can be embedded into HTML. Further, it gives insight about how the client-side language interacts with the server-side language and finally with the database. This shopping-cart application is designed primarily for interested candidates to learn and understand the concept of application development, and can also be used to teach e-commerce and web-application topics. The application can be downloaded and installed on different machines, and they can view the source code for all the different parts shown on the user interface to visually understand how a particular piece of code works. This shopping cart application is very versatile and can be enhanced by adding more functions and modified graphics for use with commercial purposes.

1.2. Contribution
The contribution of this paper lies in designing an Online Shopping Website for Handicraft application because by performing online shopping lots of time can be consumed rather than spending time at physical markets. Further, using the available stores to sell the products, there is also the possibility of designing one’s own customized Online Shopping Website for Handicraft application because custom-designed platforms are expensive. Moreover, this paper will not only help the students to understand the concepts of web-application designing but it will be very easy to incorporate the idea of using programming techniques from the available visuals to understand how a piece of code appears on a user interface. The languages used to build this application are JavaScript, HTML, and JSP they are found to be useful while working on the technologies.

2. Literature Review
Rohit Yadav et al. [5] argue that as by online shopping more customers may be attached and profit can also be earned more. Renee Garett et al. [6] propose that different organizations have different needs and thus seeks to implement web design for the maximization of their profit. Like, an online shopping website needs to focus mainly on advertisement of their different products and make easy transactions along with security and attractive layouts. Punam Kumari et al. [7] describe the need of adding more web developing languages in the platform so that people can choose whatever language they find more feasible. Alla Moreva et al. [11] represent an efficient process of redesigning a website and effective methods of user testing using eye-tracking method. Prajaks Jitngernmadan et al. [13] describe how to implement a website for science and technology faculty and later use this platform for the purpose of advertising of the institution to the students.

3. Proposed System
3.1. SQL Report
Normalization of Database is the technique of organizing the columns and tables in such a way to reduce redundant data from a relational database. In this paper, second normal form is used which is based upon the primary key and first normal form.

Product. In Product table, Product Id is primary key and all fields depend upon the primary key and also satisfied the first normal form. The Product Table for this shopping website is depicted in Fig. 1.
User Detail. There are three types of table maintained for users. Admin, Vendor and Customer. Customer table contains twelve fields, first is User id which is primary key other than this all fields are depended on it. Fig. 2 represents User Table of the website.

Users. This table is only used for login purpose. It consists of seven fields in which user id is primary key. Fig. 3 depicts the Users Table.

3.2. Entity Relationship (ER) Diagram

Entity Relationship Diagrams is used to assemble the data into entries and represent the relationship and it also act as data model [6] [7]. This diagram helped an analyst to design a good database structure in an efficient way.
Entity. A data entity is an important feature where the data can be stored. Entity is classified into 5 steps: locations, tangible things, roles, events or concepts. Sometimes entities are also called as instances.

Relationship. A data relationship is useful when there is an involvement between two entities.

Attribute. A data attribute defines a unique property which can be common to a particular entity. An attribute that uniquely identifies only one attribute is called a primary key. A Data Flow Diagram gives a pictorial information of the flow of data in a relational database and it is also used as introductory step to define the system. DFDs can also be accustomed for visualization purpose especially for designing a structure. Fig. 4 represents the Entity Relationship Diagram of our shopping website.

![Fig.4. Entity Relationship Diagram](image)

4. System Implementation

System implementation mainly deals with training of user, file conversion and preparation of website. In file testing process, first of all user acceptance is examined with training of users. System testing involves the accuracy of the system for accessing and fetching the information. This technique involves guidance against errors in the whole system and also provides the users a chance to gather experience through this procedure.

This online shopping website is supposed to be delivered in three phases, with each phase being an add-on that makes it more usable and acceptable.

4.1. Static decomposition and Dependency Description

This section contains the system use-case diagram for the online shopping-cart application and also has a detailed explanation for each use case in the system.

High level Use Case Diagram. The systems use case shows the user a detailed view of the system and how the actors would interact with each other and with the system. The explanation for each usecase is then provided below the system use case for the administrator as depicted in Fig. 5 and the user as mentioned in Fig. 6 helping the user to understand who are the actors are as well as giving the description for each usecase along with its pretend post-conditions that should be satisfied once the use case is implemented in the software. Fig. 5 demonstrates the use case of for an administrator where he or she has access to the application. The administrator can access the home page, select a category, or add / delete items to from the cart.
Fig. 6 demonstrates the use case for users where they have access to the online shopping cart application. They can access the home page, select a category, add/delete items to/from the cart, view the shopping cart, and decide to either continue shopping or check out. They are required to go through the user authentication form (login) which would only allow them to place an order for the items they selected.

4.2. User Panel

There are three panels in this paper i.e. Admin Panel, Vendor Panel and Customer Panel. All are having their own level of privileges.

Admin
- Admin can show all products, update, delete and add new products.
- They can also provide privileges to vendors, customers as well as other admins. They can delete all the account.
- Admin can also add product to home screen list. Fig. 7 represents adding new products to Admin Panel and Fig 8 depicts list of products in Admin Panel.
Fig. 7. Add new Product

Vendor

- Vendor can customize available products and also, they can approach admin to add some new products.
- They are also responsible for delivery of products to the customer’s home.
- They can facilitate products with extra discount so that they will get more star from customer.

Customer

- Customer can view all products.
- They can add it to Cart and Wishlist for future purchase.
- They can delete and update it from Wishlist or Cart.
- Customer can give stars and feedback to products and vendors in feedback form.
- Transaction will be done by customers including all taxes and shipping charge.

Fig. 8. List of Products in Admin Panel
4.3. Email Verification

We have provided email id verification for this website. Here, if someone wants to register then he/she must have correct email id. If he/she is entering the wrong email id, then he/she cant sign up because we are sending the verification number on email id and then after we asked verification number from user in second sign up form. If user enters the correct verification number then only they can register otherwise not.

**User Verification at Sign Up.** There are three steps of registration process. Firstly, they have to provide valid email id and then a verification code will send to that email id. After that in next step they have to verify it with verification code. This application will check the user id in database, if someone wants to sign up. If the user has already registered with same email id, then he/she will get a message that this id is already registered and please register with another email id. Otherwise they can proceed to the next step. After verification of email id, they can enter their username and password.

**User Verification at Login.** At first, it checks email id of the user. If email id is not presented in database then it will generate an error message that you are invalid user otherwise it will check password. If password is correct then the user can login otherwise, it will again generate an error message that your password is wrong.

**Without Login.** We have given authority to the user that they can see all the products and details even user is not registered or login.

Fig. 9 depicts the home page of our website whereas Fig. 10 represents products master page. Fig 11 illustrates product details page and Fig. 12 outlines the login page of user. The website also developed shopping cart and wish list which have been portrayed in Fig. 13 and Fig. 14 respectively.
5. Comparative Analysis
After investigating many research papers, the proposed system performs effectively and has got some superior features than some prevailing methods [1-3][5-6][13].

5.1. Customer Satisfaction
The most prominent good thing about this handicraft web portal is the capacity to communicate with the clients. Such an engagement makes a difference retailer to meet the person clients and react to their responses suitably. This makes a difference client to urge their prerequisite for custom painstaking work. This has moreover driven to the online buyers being more satisfied.

5.2. Comfortable and user friendly
This handicraft web portals are designed in such a way that buyers can effectively make online buys of painstaking work. Clients can conduct buys within the same instrument that the information is given, so there's no detachment between the buying crave and the buying capacity.

5.3. Very less investment
This handicraft web portal does not require a retailer to contribute in warehouses, showrooms or other commercial properties at prime areas. Workmanship retailers work through their web destinations and in this way spare radically on the genuine bequest costs. Besides, support costs of a virtual workmanship store are irrelevant in comparison to a physical craftsmanship store.

6. Conclusion and Future Direction of Work
The Handicraft Shopping website is developed to give a platform of web-based application that would help in searching, viewing and selection of a product in a very ease manner. This website offers an efficient way for the users to search for products interactively and the search engine will feature the product based on the need of user [9]. The user has the option to write their own reviews and based on it the search engine will also classify the feedback as positive and negative reviews. Its drag and drop feature would make it easy to use. This website is developed by keeping in mind the easiness of interaction by the users so that they get a very user-friendly environment while surfing the website. Such compatibility of this website enables it to attract the users to visit the website more frequently. The salient features of this website are:

- User will choose which courier service they want.
- The simplicity and suitability of this website which makes it user-friendly.
- Easy availability of products.
- Quick display of products on the basis of price range.

The authors feel that some more salient features would round off the system. If the authors try to sell this system, then more system testing is needed for better performance and would also be advantageous for the hardware in case of a system failure. So, following things can be done in future.

1. The current system can be further extended which will allow the users to save products in to wish list.
2. Subscription can also be added where the users could get the newsletters letters especially when the price for a product drop from the original price.
3. Post Requirements: In this, customer will be updated on their contact number as well as e-mail id.
4. More products such as home-furnishing will be added and collaborated with more brands.

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