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Designing & Implementing of E-commerce webapplication

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ABSTRACT

In today's fast-changing business environment, E-commerce provides an easy way to buy and sell products to a large customer base. There are N number of websites and applications available in the e-commerce market, like buying a new product (Ex:- Flipkart, Amazon), selling and buying of old products (Ex:- OLX), and providing products on rent. Users expect to find what they're searching for fast and simply when they visit an e-commerce website. And nowadays many people don't have enough space to store all these applications and sometimes they find it confusing and a little hectic using multiple websites/applications. Also, there is no proper application for giving products on rent. This can be done by designing an E-commerce web application for a variety of products to rent, buy & sell to the customers. To implement an online shopping web application, a virtual store on the Internet is needed which allows customers to seek products and select them from a catalog. The purpose of this paper is designing and implementation of an online market Web Application (in short Online Mart) for customers with the goal of keeping buying & selling new products, buying & selling used products, and renting products on a single platform.

Keywords: Online Mart, Buying & selling new/used products and renting products, Web application/ web app

INTRODUCTION

The name of our web application is 'Online Mart'. (Fig.1). This is an online market web application where customers may rent commodities, supply commodities for rent, purchase and sell new commodities, and buy and sell used items at fair costs.



Fig.1: Logo of our 'Online Mart' Web application

The main objectives of this web app are to buy or sell new and used products; rent products on a single platform; provide a better user experience to shop quickly and easily; Option for secure payment; High-quality delivery service that is both quick and secure security login credentials and saving phone storage.

Once the user visits our web app, they can search for the commodity by typing the product name in the search bar. Then the user can directly buy or rent the commodity, or they can add the commodity to their cart and then go to their cart and buy or rent the commodity by selecting the payment option and paying the amount.

In this web app, after logging in, the user will have three options: either buy or sell new commodities; buy or sell second-hand or old commodities; rent the commodities; or take the product on rent.

This web application will also be equipped with security, which is an important aspect of every web app, especially when the transaction of money is involved.

This web application is suitable for all types of users, storage of data, making the web application in such a way that it is easy for anyone to use, even for laymen, and the web application should be responsive and dynamic.

User experience is the primary focus of this web application. The user needs fulfillment, a user experience, it should be easy to use for the user, etc. So, the user is the main focus of this web application because user satisfaction is the most important thing. We have used a lot of tools and technologies to help us build our web applications conveniently. Some of them are Gliffy Tool, Mindmeister Tool, Bootstrap, Microsoft SQL Server Management Studio, Microsoft Azure cloud services, and Visual Studio as an IDE to design, develop, and implement our "Online Mart" web application.

IMPLEMENTATION

"Online Mart" is an e-commerce web application where people can buy and sell new or used products and rent products on a single user- friendly platform. Basically, in our web application, we have a sign up/login page, a home page (Fig. 2), a user profile page, a products page, a my cart page, a payment page, and an order tracking page.

Fig.2: Home page of our web application.

Anyone who visits this web application can see the available products. But to place an order, he/she should sign up for the web application and become a user. A vast variety of products (Fig.3), including men's wear, women's wear, kids' wear, footwear, jewelry, accessories, electronics, musical instruments, office supplies & stationary, sports equipment, and many more, are available to the customers on our category page with high quality photos, detailed product details, and product ratings & reviews. Therefore, customers can get clear and concise details about the products very easily. Customers can purchase or rent any of the products using an instant payment through Razorpay.

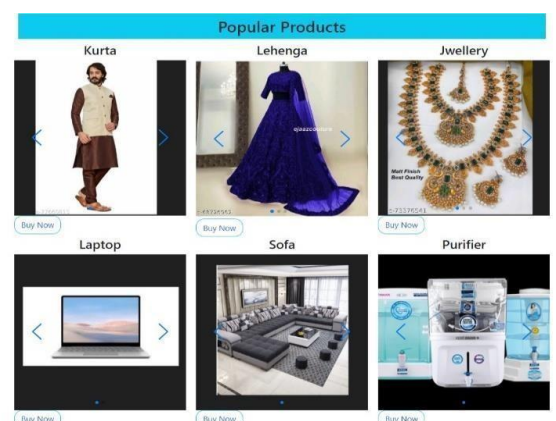
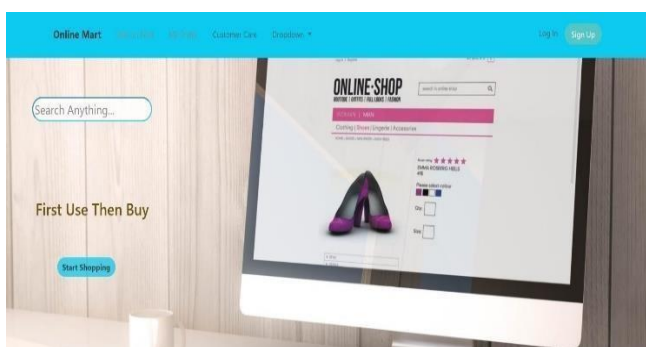


Fig.3: Popular products of our web application

Use case diagram

The use case diagram is a sort of UML diagram that allows you to depict system functionalities as well as the actors that interact with them. (Fig.4)

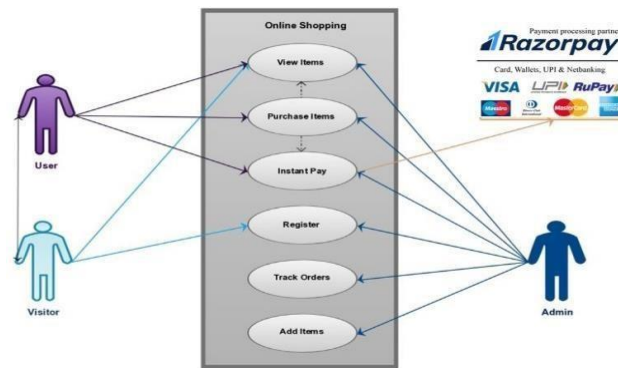


Fig.4: Use Case Diagram of our web application

ER Diagram

ER Diagram (ERD) or Entity Relationship Diagram (ERD) is a diagram that shows the relationship between entity sets contained in a database. In other words, ER diagrams aid in the explanation of database logical structure. Entities, attributes, and relationships are the three main notions that ER diagrams are built on. The entity framework architecture is represented by the ER Diagram. Below diagram (Fig.5) shows the Entity- Relationship diagram of our web application project. We used gliffy tool to create this Entity- Relationship diagram.

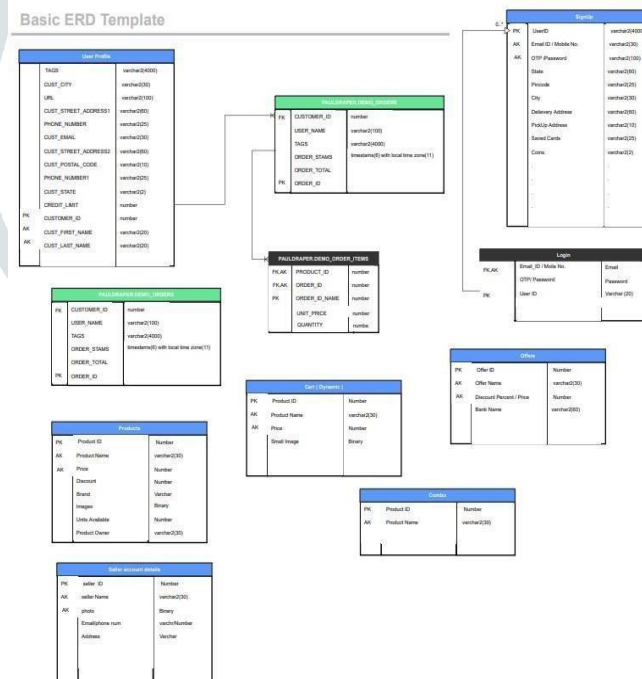


Fig.5: ERD of our web application.

Mind Map

Mind mapping is a useful and powerful technique that helps to visualize thoughts and communicate them to others and supports learning, improves information recording, shows how different facts and ideas are related, and enhances creative problem solving. Mind Mapping may also be used to break down complex tasks or topics into digestible parts, allowing you to plan successfully without being overwhelmed or forgetting crucial details. We used mindmeister for our project to create mind map to organize the product list. (Fig.6)

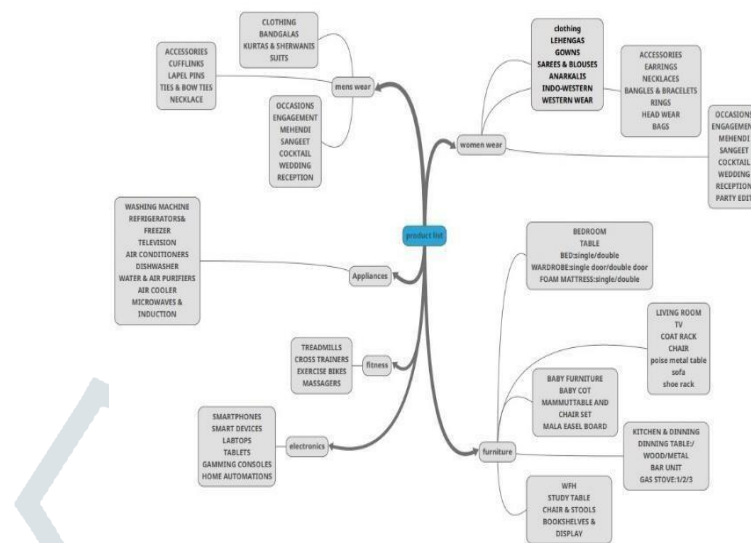


Fig.6: Mind map of our product list

CONCLUSION

The Internet has become a major resource in the modern business world. An e-commerce opens the door for entrepreneurs with new business opportunities and for customers to shop anything conveniently at anytime, anyplace. In this project, an ecommerce web application where customers can buy/sell/rent products on a single platform has been designed and implemented. Web application design is like a shop interior. If the shop looks poor or looks like hundreds of other shops the customer is most likely to skip to the other shop. Hence we have designed the project to provide the best user experience with easy navigation, detailed product details and retrieving necessary feedback as much as possible. The main objective of our project is to provide a single platform for the customers to buy & sell or rent old/new products quickly and easily with fast & secure payment option and delivery service while saving phone storage by using single platform instead of multiple platforms. The proposed system was developed using ASP.NET and implemented using Azure cloud services.

FUTURE ENHANCEMENTS

In rapid growing technological world, along with these core features of our web application there are some additional features that can make the user experience much better. One of them is searching lens feature. That will enable the user to search the commodity by scanning the commodity while using the lens feature without typing in the search bar. So that the UI i.e. User Interface will be very attractive and easy to use, even the layman and uneducated people use it.

Another one is a machine learning concept which will be used for improving the searching concept for the user i.e. if user searches for some product then these features will be showing the suggestion according to the commodity searched before.

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