E-Commerce Web Application for Local Artisans

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Abstract: Many individuals have been inspired to establish their small businesses because of the current Covid-19 pandemic, however, upscaling is challenging for local artisans owing to a lack of connection and client reach. In addition, the pandemic has hit many local artisans hard, financially. Most of the shopping sites are focusing on electronic gadgets, clothes etc. but no one is particularly focusing on the products whichare handmade. So, there is a demand for a dedicated platform that allows customers to interact with such growing small businesses. As a result, we developed an E-Commerce platform that links small businesses with larger audiences and helps them grow as it allows consumers to directly buy handmade goods or services from the seller over the Internet. Customers can pick from a large range of items supplied by various local companies and make safe and secure payments on the platform, making it a convenient platform for both customers and local artisans. The goal of the project is to build a good relationship between the artisans and the customers that helps the artisans to sell their products with good cost that makes a reasonable cost to customers.

Keywords: Web application, E-commerce, Handicrafts, Ecommerce Local Artisans, online shopping website

I. INTRODUCTION

The term handicrafts represent our Indian culture, tradition, uniqueness, lifestyles and skill of our artisans. The Indian handicraft and handloom industry engages over 23 million craftsmen.
There are different categories of users in handloom/handmade products like pottery, handwoven blankets, handmade jewelry and quilts stitched by hand, Dress materials, Bed sheets, different kind of Idles like goddess, Buddha and other types of decorating items like Needle work & sewing, Ribbon Embroidery, String art, Glass etching, Origami.This e-commerce website helps establish a direct connection between buyers of handloom and artisans. This helps customers in finding more variety of items to purchase by sitting at one place. E-commerce websites are profitable to both the buyers and the artisans. India has the largest number of internet users. In India, many people spend most of their time on the internet. The shift from conventional shopping to E-commerce has accelerated significantly as the quality of these platforms continues to increase to this day.
A cross-border e-commerce marketplace will allow buyers and sellers to meet at one platform for business. It will help in growing their business and the overall economy of our country. Our aim is to develop an exclusive e- commerce platform for artisans to sell their products. The demand forecast of the items required, automatic quality checks on the items as well as Sentiment analysis with next recommendation actions for the artist shall be added as future scope for the project. It also provides tools for artisans to manage their inventory, track sales, and manage orders. It also offers a way for customers to provide feedback and reviews of products, which helps in building credibility and increase in sales.

II. LITERATURE SURVEY

The notion of E-commerce has been there since the dawn of the internet, but the capabilities of the platforms have changed dramatically between then and now. It is described as "the production, distribution, marketing, sale or delivery of goods and services by electronic means”.[1] Over time, it can be observed that E-commerce platforms have contributed a significant share of the economy's growth as well as created a paradigm shift in the way a company operates.[2] The project is aimed to gather the data regarding the handmade products and its history, culture and tradition. The most difficult task is to find the people dealing with the handicrafts.[3] Most of the handicraft producers are not registered and are dealing the handicraft products from their homes. Therefore, there is no systematic database of these handicrafts sellers and producers for buyers.[4] The data of the handicraft products and producers are collected to design a particular database for easy and convenient way of selling and buying the products.[5] One of our main ideas before implementing the project was to collect the information from different sources, information like demand on handicraft products, famous products, organizations and people's love towards buying the handicrafts.[6] To specify customer awareness, an indicative factor for increasing sales of handicraft/handloom goods.[7] To find out whether online portal is perceived as an important catalyst for promoting handicraft products globally.

Each state or a particular city has their own handicraft artisans for making better products for which they are famous worldwide, but if people from other states wish to buy those products, it makes this a difficult task because they either have to move to that particular state or else they have to buy those products in their living location with high cost. So here is the simple solution -This e-commerce website has collections from each state with affordable prices and with good quality. This platform aims to be able to assist in the resolution of some of these difficulties, resulting in a beneficial influence on the community.

III.   PROBLEM STATEMENT

To develop an exclusive e-commerce platform for artisans to sell their products, the demand forecast of the items required, automatic quality checks on the items as well as Sentiment analysis with next recommendation actions for the artist shall be added as a future scope.

IV.   OBJECTIVE

The objective for creating this E-commerce site for Artisans is to promote the Indian handicraft industry globally, providing a common platform to make, market, and sell high-quality handicrafts and goods. The goal of the project is to build a good relationship between the artisans and the customers that helps the artisans to sell their products at a reasonable cost to customers.
● Ecommerce for artisans also aims to promote and support the preservation of traditional crafts and artisanal techniques.
● Ecommerce allows customers to browse and shop for artisanal products from the comfort of their homes, at any time of the day.
● By providing a marketplace for artisanal products, ecommerce can help to sustain and revitalize traditional crafts that may be at risk of disappearing.

V.   METHODOLOGY

The system was created with factors including a seamless user experience, secure payments, and enhanced connectivity in mind. The MVC architectural pattern was used to develop the platform, which consists of a Model (handles data logic), View (which shows information from the model to the user), and Controller (controls the flow of data to the database). The system is divided into two sections: one for consumers and another for sellers. Customers may choose things they want to buy from a wide range of options, make secure payments, submit orders and write some reviews on these ordered items. Sellers, on the other hand, have the option of editing product information and viewing all orders, as well as marking them as delivered after they have been delivered. Only verified and registered businesses on the site have access to the seller's section. Login/registration module, a payment module, and an order module are some of the other components.
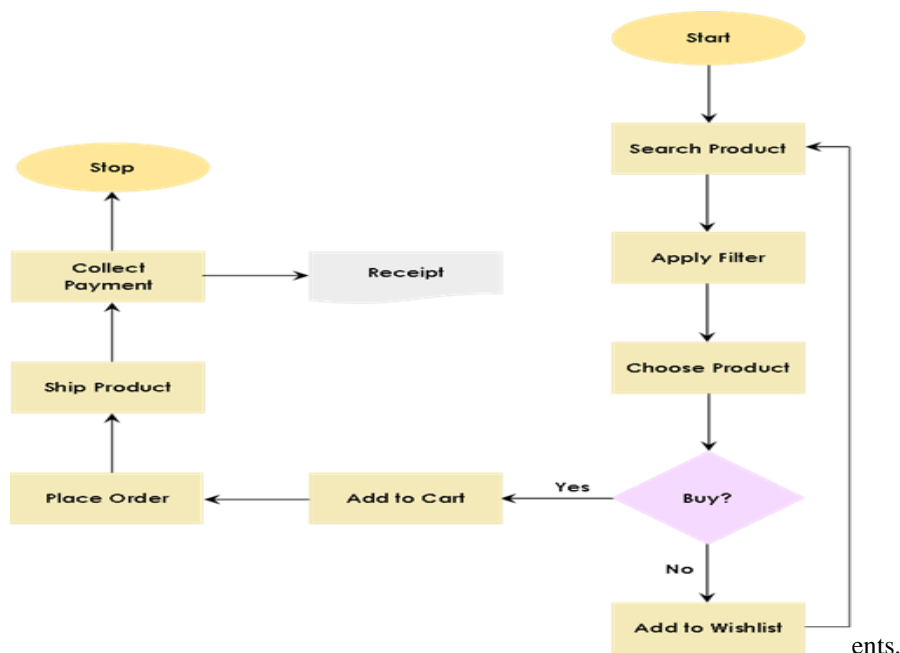

Fig.1 Flow of the Application

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VI.   SOFTWARE IMPLEMENTATION

The platform was developed using the MERN stack which includes MongoDB as a database, Express as a Node.js framework, React.js as a client-side JavaScript framework, and Node.js as a JavaScript server platform, as it's one of the most popular, easy to use technology stack along with plenty of community support. For the front end of the website, we used React.js as a client-side JavaScript framework as it is extremely flexible and provides great performance. The User interface design was built using Material Design principles and components which provide clean, ready-to-use UI components. As for the backend MongoDB, a document-oriented database management system that allows you to store data in JSON format was implemented. It is far more flexible than a SQL- based database management system, and it is incredibly scalable, making it perfect for applications that require real- time scalability. The REST API, which oversees the whole flow of data in the application, was built with Node.js and Express. The key advantage of Express is that it allows us to utilize JavaScript in both the front-end and back-end, which saves time. Node.js, a JavaScript runtime environment, is incredibly important because it utilizes a single- threaded event loop with non-blocking I/O, allowing it to fully exploit all CPU cores. It also has the bonus of being cross-platform, giving it considerable flexibility. One of the most difficult challenges was to develop a frictionless and secure payment gateway. This was accomplished with the help of Razor Pay checkout, which offers a sleek, prebuilt user interface as well as top-of-the-line security features. The necessity of user authorization and authentication for any type of website cannot be taken for granted.
This was realized using JWT tokens, which are secure, unique private keys that can be encoded with some data and are used to identify a user based on this key. All sensitive information, such as passwords, was only stored after it was hashed with the Crypt hashing function.

A.   Static decomposition and Dependency Description

This section contains the system DFD diagram for the E- commerce application for Artisans and also has a detailed explanation for each use case in the system. The system's 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 use case is then provided below. The system use case for the administrator and the user helping the user to understand who the actors are as well as giving the description for each use case along with its pretend post-conditions that should be satisfied once the use case is implemented in the software. The use case of an administrator shows where he or she has access to the application. The administrator can access the home page, select a category, or add/delete items from the cart demonstrating the use case for users where they have access to the online shopping cart application. They can access the homepage, 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.
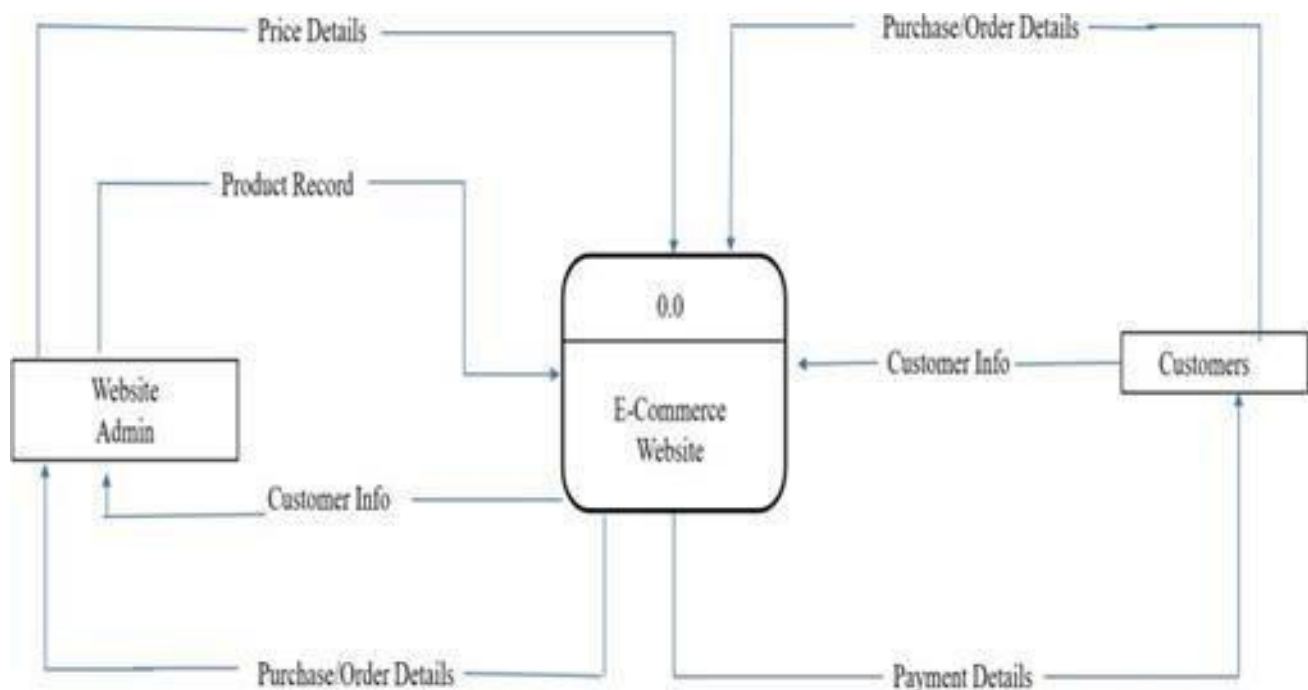

Fig.2

B. User Panel

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

i)   Admin:
•   They show all products, update, delete and add new products.
•   They can also provide privileges to customers as well as other admins. They can delete the account.
•Admin can also add product to home screen list and can also track the data about the items bought or sold, consumervisited count.
ii)   Customer:
•Customers 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.
•   Transactions will be done by customers including all taxes and shipping charges.
•Customers can give stars and feedback to products and vendors in feedback form.
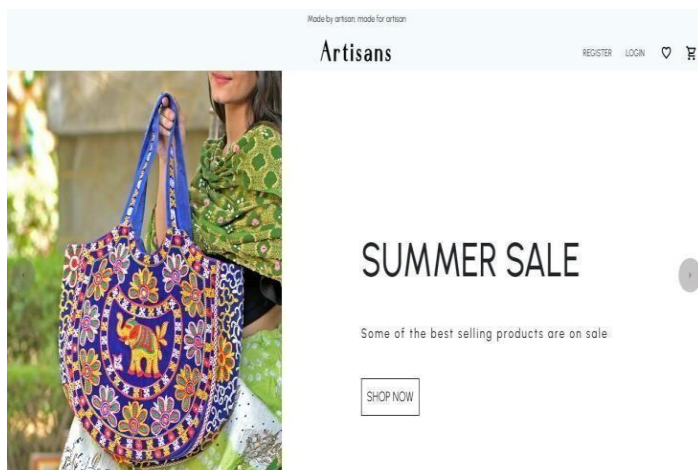
Fig. 3 Landing/Main Page
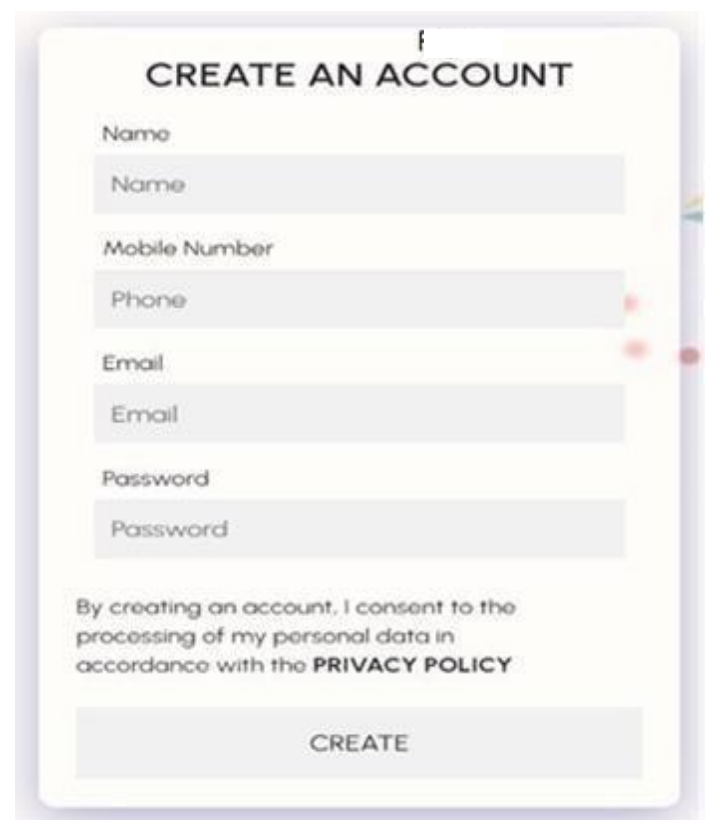
Fig. 4 Sign-Up Page
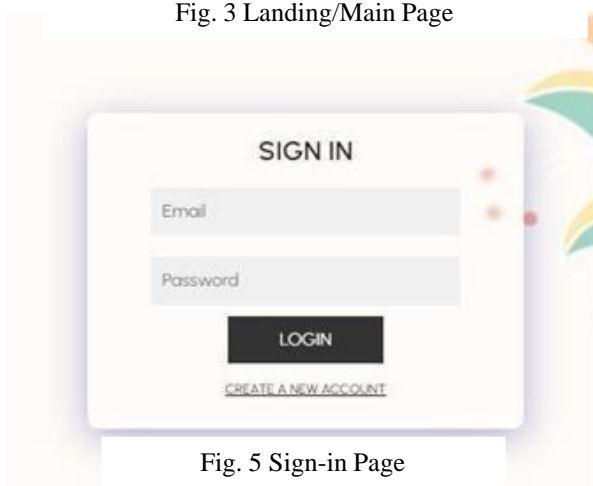
Fig. 5 Sign-in Page
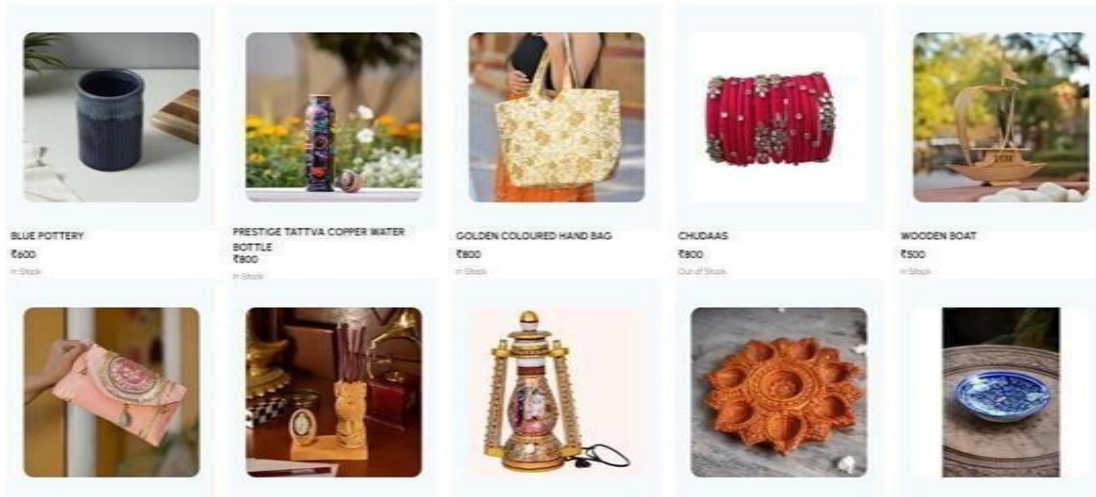
Fig. 6 Products Page

Fig. 7 End of Products Page

Fig. 8 Our Team

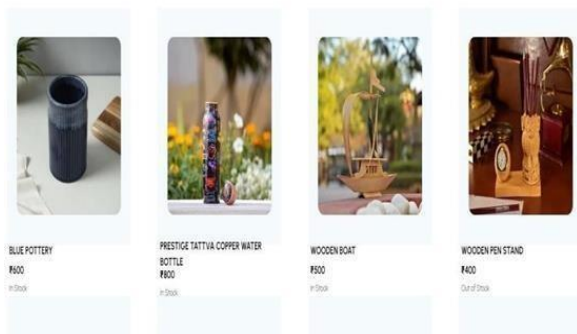Fig. 9 Our Story

Fig. 10 Product Categories

Fig. 11 Individual Product Category Page
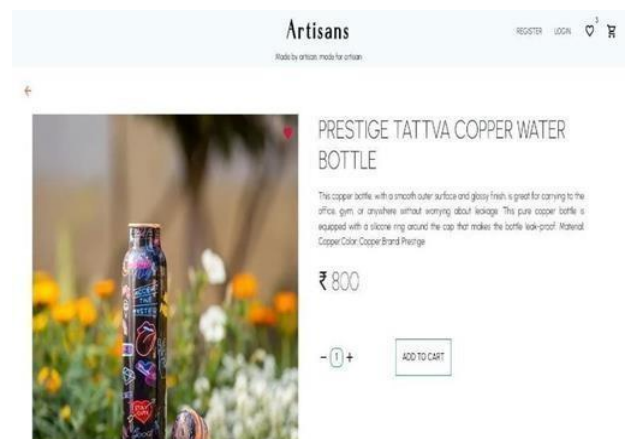
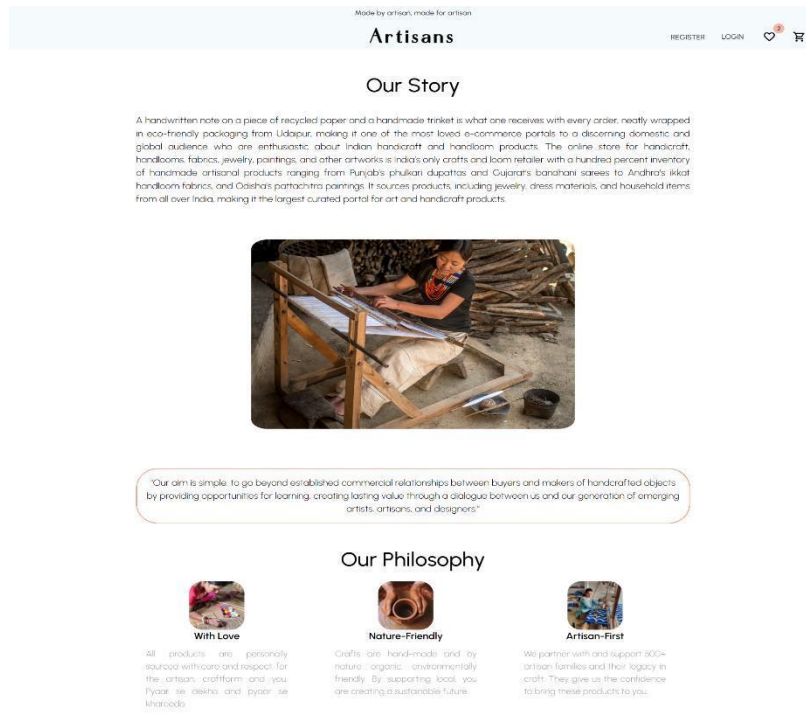Fig. 12 Product Description
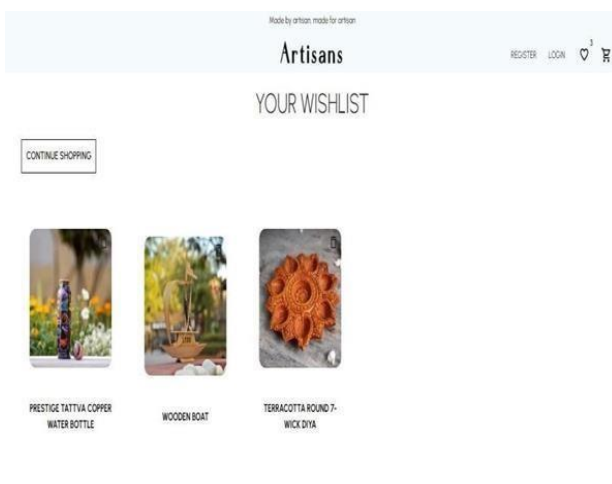
Fig. 13 Wishlisted Items

Fig. 14 Our Story/Our Philosophy Page

Fig. 15 Enquiry Form Page

Fig. 16 Your Bag/ Order Summary

Fig. 17 Payment Gateway

Fig. 18 Product Status Tracking

VII.   CONCLUSION AND FUTURE SCOPE OF WORK

The Handicraft Shopping website is developed to give a platform of web-based applications that would help in searching, viewing and selection of a product in a very easy 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 needs of the 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.

Proposed handicraft web portal performs effectively with superior features than prevailing methods. It offers customer satisfaction through engagement and custom orders. The portal is user-friendly and allows for seamless online purchases. Retailers can save on real estate and maintenance costs, as it doesn't require warehouses or showrooms.

The salient features of this website are:
•   Users will choose which courier service they want.
•   The simplicity and suitability of this website.
•   User-friendly website.
•   Quick display of products based on price range.

So, following things can be done in future:
1.   The current system can be further extended which will allow the users to save products into their wish list.
2.   Subscription can also be added where the users could get the newsletter letters especially when the pricefor a product drop from the original price.
3.   Post Requirements: In this, customers 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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