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RESEARCH ARTICLE

SPIFFY SHIRTS E-COMMERCE STORE (CROSS PLATFORM APPLICATION)

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Abstract

In today's generation, most people are using technology for leading their lives and fulfilling their daily needs. In this generation most of us using E-commerce for shopping for clothes, groceries, and electronics (Chanana and Goele, 2012). We have developed one E-commerce cross platform application by using MERN stack and PWA technology as it contains MongoDB, Express.JS framework, React.JS library, Node.JS platform. PWA technology is applied to enable users to access a native-like mobile version of their favorite website with a single tap. This application is fully functional with different views for user and admin and it also has integrated with payment gateway for checkout. By using this website we can buy different types of t-shirts and we can choose different styles of t-shirts based upon customer interests. In this project, we can add different products and can delete them also. We have developed administrative functions for the applications such as create a product, create categories, Admin dashboard, Manage products, and Manage categories. For customers, they can quickly add their items to the cart. Based on the items in the cart, the bill gets generated and the customer can pay by using stripe. (Mai,2020)

Keywords: JavaScript, Software Stack, Framework, Library, Performance Analysis, React.js, MongoDB, Node.js, Express.js.

Introduction

It is genuine that innovation has ended up a basic instrument for online promoting these days. In any case, there are various little shops and basic need stores with for the most part offline trade show in Vietnam as of late. With this commerce demonstrate, it'll bring a part of awful encounters for both buyers and venders. For occasion, the vender has the item need to offer but the buyer may not know it, or the buyer may direly got to buy something, but the store is out of stock. Additionally, online shopping makes a difference clients to select a wide run of items, costs and they can compare them to each other easily. It is genuine that innovation has gotten to be an fundamental device for online showcasing these days. In any case, there are various little shops and basic supply stores with mostly offline commerce demonstrate in Vietnam as of late. With this commerce show, it'll bring a parcel of terrible encounters for both buyers and dealers. For occasion, the vender has the item need to offer but the buyer may not know it, or the buyer may direly ought to buy something, but the store is out of stock (Ullah, 2016) Besides, online shopping makes a difference clients to select a wide run of items, costs and they can compare them to each other effortlessly. Experiencing the insufficiencies and the shortcomings of the offline trade demonstrate, making a cross stage application for looking and buying things for each shop is exceptionally vital right presently. As of late, there have been numerous e-commerce destinations sent out such as Amazon, e-bay or the stores that can offer items through social media channels like Facebook. In any case, clients still discover it troublesome to select the items they need since of the expansive assortment of items on these locales and not center on particular things. Additionally, the venders ought to spend a tall sum of cash on promoting or paying for expenses. From there impediments, actualize an internet e-commerce application for little basic need stores makes a difference retailers can oversee items on their possess frameworks and not depend on the 3rd party site. For the clients, they can rapidly look the items in the event that it is accessible and come to store to

choose it up and they can contact straightforwardly to the shop proprietor to memorize more almost the products that they are searching for. In arrange to create a application that can secure wants of both clients and retailers, MERN (MongoDB, Express.js system, ReactJS library, NodeJS stage) and PWA innovation is one of the effective stacks that can offer assistance us to create an e-commerce cross stage application.

By experiencing the all issues and shortcomings of the offline shopping framework, making an E-commerce application is essential for looking and shopping in each shop. These days we have seen so numerous e-commerce locales are made like Flipkart, Amazon, Myntra one can effortlessly purchase their fundamental items by utilizing these destinations. By utilizing these sorts of locales one can purchase their items by remaining in their domestic. In the long run, able to see the distinction between the costs of items moreover as in the event that we see the taken a toll of the item will be somewhat tall in offline shopping when compared to online shopping. For making these sorts of E-commerce applications MERN stack and PWA will be the finest choice that can offer assistance us for making the foremost compelling and capable cross stage applications which can be utilized in Versatile, Desktop and browsers.

Problem Statement

The purpose of this project is to makes a cross platform application which will be easier to find interesting clothes and easier to sell goods. This E-commerce application admin can add some categories like summer sales, winter festival, etc. which will by attracting customers. Customers also can easily search for their favourite goods. They can also buy them easily by just adding to the cart and they can increase or decrease by clicking on the "+" sign and "-" sign. After adding they can check the total amount of the thing which has been added to the cart. A successful payment gateway way enabled so payment can be done by debit card, credit card, and net banking.

E-commerce

E-comm, EC for brief (E-commerce) could be a concept alluding to exchanges, buy and deal of merchandise and services by the internet. E-commerce was to begin with known within the 1960s (King and King, 2004). After a long time of advancement, as portable gadgets got to be well known, social media progressively confirmed the control and the boom of the webpage. Launchers advance the fast improvement of commerce (E-commerce) (Le Shen, 2013).

ADVANTAGES:

Worldwide advertise

Clearly, after you open a physical store, you'll as it were be able to convey your merchandise and services in a little geographic range. E-commerce will assist you illuminate that issue. E-commerce makes a difference you reach the showcase rapidly, extending the showcase to the greatest level compared to coordinate deals, so that items and administrations are effortlessly introduced, purchased and sold through retailers. and online market.

Always open

In e-commerce, running an internet trade is much simpler, it's continuously open 24h / 7/365. For businesses, it's a extraordinary opportunity to extend deals openings all the time.

Budget reserve funds

Compared with conventional shapes of commercial trade, all costs when e-commerce commerce are decreased: the taken a toll of leasing booths, sales representatives and administration is much more conservative. . Actually, when venders spare working costs, they can offer more motivating forces and way better rebates for their clients. At this time, the client is the another recipient. Shared advantage, isn't it great?

Inventory administration

By utilizing electronic devices to speed up the requesting, conveyance, and installment forms, e-commerce businesses can spare billions of working costs and diminish sum of inventory.

Most accurate customer marketing

With get to to client information and the opportunity to track customers' buying propensities, e-commerce businesses can rapidly recognize and showcase items and administrations. benefit. Benefit most reasonable for consumers. Work anyplace, purchase anyplace: Running an e-commerce commerce permits you to not have to be sit within the office, and buying does not drive you to go to the general store. Everything the dealer and the buyer needs is an internet-connected gadget and that's all (Niranjanamurthy *et al.*, 2013).

Research and development

PWA (Progressive Web App)

PWA is the result of a interesting cross-platform app improvement strategy that conveys web pages introduced on your phone through the versatile browser. It could be a cross breed of a local app and a versatile site and employments standard web innovations such as CSS, HTML, and JavaScript to provide an app-like client experience (Bozikovic and Stula, 2018)

Unlike local apps, PWAs have distant better;a much better;a higher;a stronger;an improved" a stronger stacking encounter, can work offline, and are discoverable by look motors. They are why certain brands such as Alibaba, Trivago, and Twitter offer a consistent browsing involvement on mobile (Gerardus Blokdyk, 2018)

MERN

MERN stands for MongoDB Expressjs Reactjs Nodejs. These are the four technologies that help us to construct or to build this web application.

MongoDB

MongoDB is an open source database; it is additionally the driving NoSQL (*) database as of now utilized by millions of individuals. It is written in one of the foremost well-known programming dialects nowadays. In expansion, MongoDB is cross-platform information that works on the concepts of Collections and Records, giving tall execution with tall accessibility and ease of development (Patil, 2016)

ExpressJS

Express.js could be a system built on best of Nodejs. It gives capable highlights for web or versatile advancement. Express.js underpins HTTP and middleware strategies, making the API amazingly capable and simple to utilize (Liang, 2017).

ReactJS

React.js is an open-source JavaScript library that's utilized for building client interfacing particularly for single-page applications. It's utilized for taking care of the see layer for web and portable apps. Respond also allows us to make reusable UI components. Respond was to begin with made by Jordan Walke, a program build working for Facebook. Respond to begin with conveyed on Facebook's newsfeed in 2011 and on Instagram.com in 2012 (Javeed, 2019)

NodeJS

Node.js is the select application that with as it were a single string, it can gotten handle various associations. Building unused strings for each inquiry isn't required, subsequently the structure uses the slightest sum of Smash and run quickly. Secondly, Node.js produces the foremost of server property without create inactivity with the JavaScript's non-blocking I/O (Hoque, 2020;) (Sterling,2019).

React Powered PWAs

Released by Facebook in 2013, React is a popular choice amongst developers for its extensive JavaScript library. The Progressive Web App development framework can create both single-page

and multi-page apps and ensure the content loads and changes within a single page. It makes use of JSX to render functions for connecting HTML structures, and thus creating a React PWA solution.

Pros

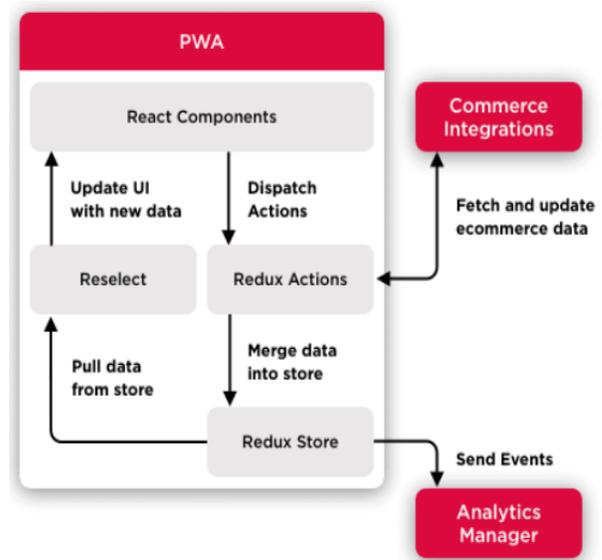
React-powered PWAs have higher flexibility and are scalable with additional packages. Developers can deploy the same code for native apps. The rendering process is speedy because of Virtual DOM.

Using different JavaScript libraries, the Progressive Web App development framework enables the generation of API interactions, server-side and static rendered pages, and routing.

Cons

The React PWA solution needs knowledge of JSX apart from JavaScript. Implementation is tricky due to the lack of a clearly-defined methodology. Migration from AngularJS is difficult due to the presence of JSX. The more you go for flexibility, the more functionality issues will go up in the React PWA solution (Tal Alter, 2017).

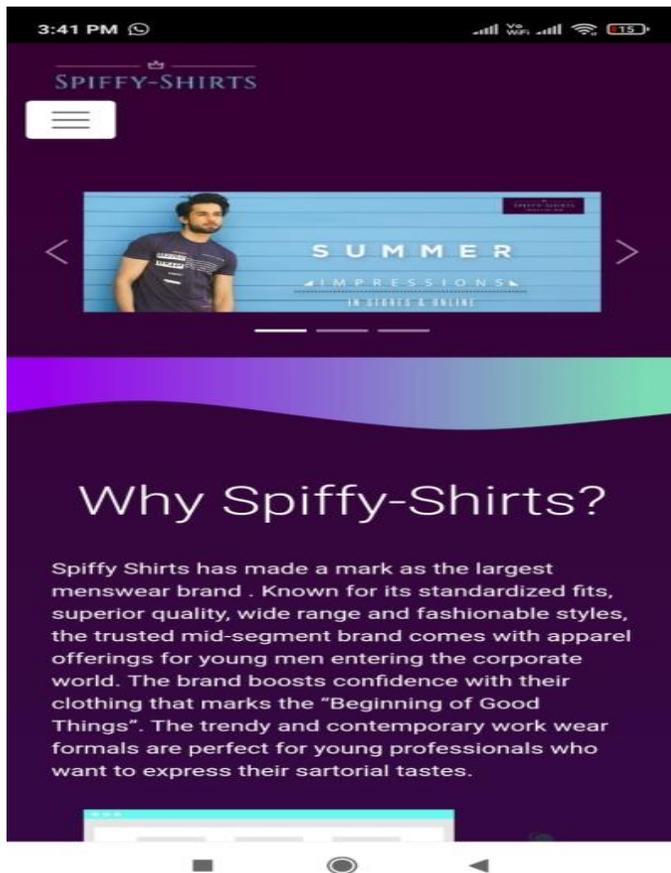
PWA React app Architecture



Result

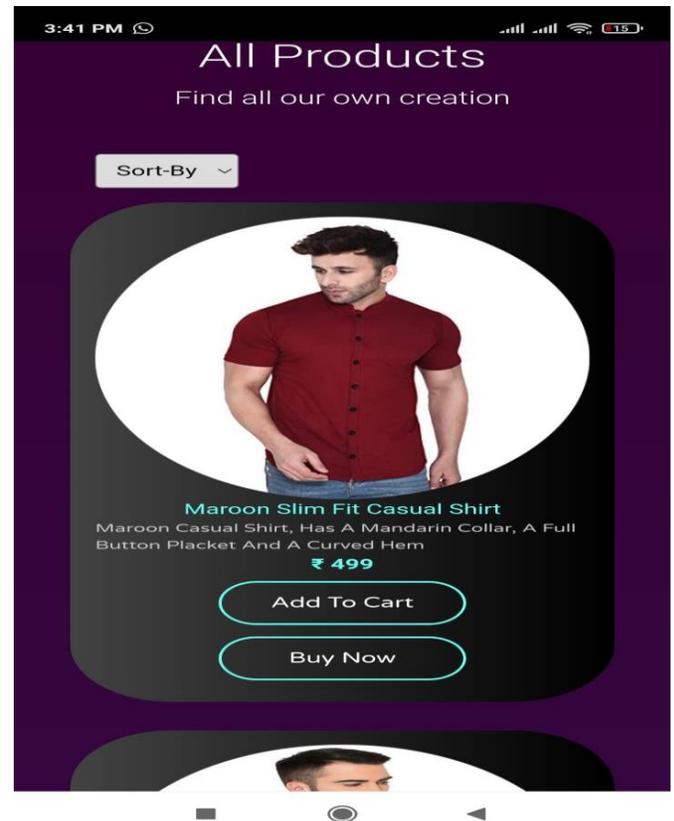
Home Page

The home page of the application mainly contains new arrivals of products which are saved in the database and it also contains features of the application and the variety of products offered by the application. And there some options that will be in the menu bar if the user does not sign in/login in yet then "Sign in" and "Sign up" options will be there.



Product Page

Item page of the app. It incorporates the vital components of a web store just like the work bar, the look bar and a list of products. Customers who visit the store can explore for the products they need to purchase and they can customize the channel on the toolbar to be able to purchase the finest products.



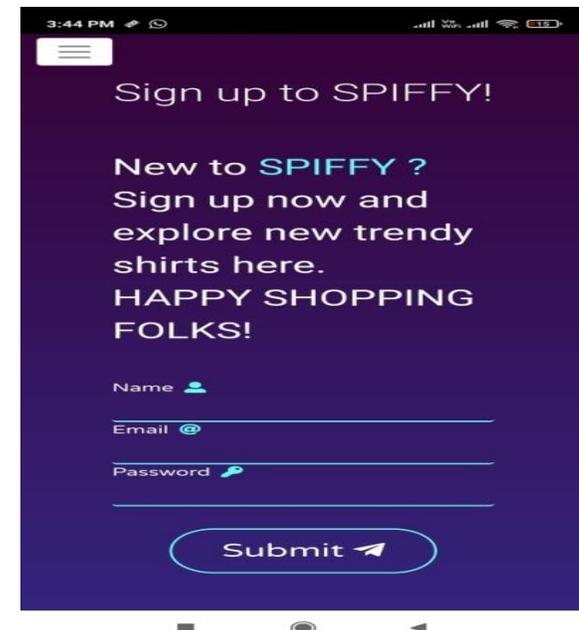
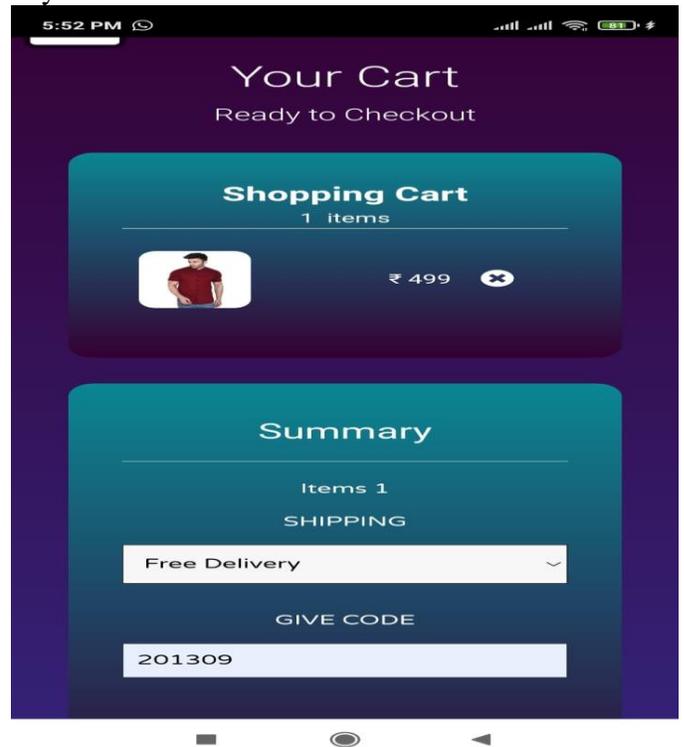
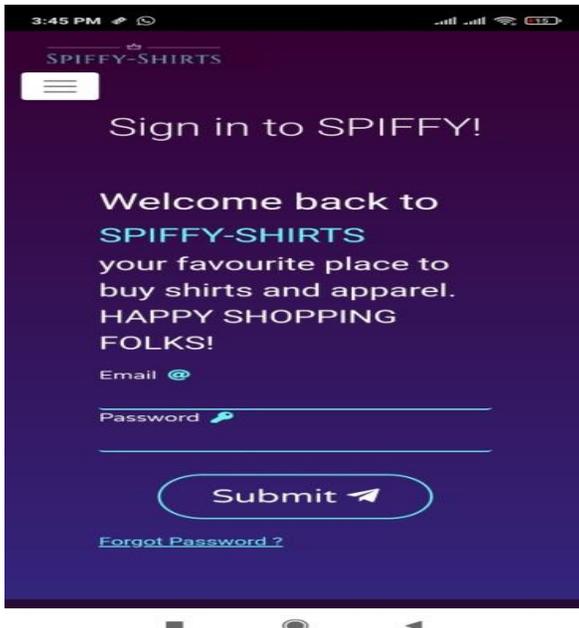
Sign In/ Sign Up

Clients login into the site got to sign in something else they ought to enroll a unused account. The sign-up screen as it were has 3 areas that require clients to fill in is Title, E-mail and Password.

The purge strings are setting up for each field. After a client wrapped up the shape and clicked yield button, the handle Alter will set Values to each string and store all the information to the backend framework. In case there's a mistake happened, none of information is put away. After a client sign up effectively. A green notice will show and tell them to sign in with their account.

the delivery address field that required client to fill within. The add up to cost of the products.

Below that's the installment door. The installment portal is for those clients who employments Debit/Credit Card. In each product recorded in Cart, client can expel them from the cart moreover in case they don't need to purchase it anymore.



Cart Page

Clients select all of the items they need to purchase and include to the cart. All of these items will move to Cart. On the cleared out side there's list of items that client included to cart. On the correct is

Conclusion

The accomplishment of the proposition is investigating the essential components of MERN stack innovation: MongoDB, ExpressJS system, ReactJS library, NodeJS stage and PWA innovation. Utilizing MERN stack innovation in conjunction with stripe to construct an e-commerce web application with instalment door. Since the reason of the proposal is the e-commerce application, the understanding around MERN advances and PWA innovation and applying it to this app is the foremost critical. Overcome current inadequacies, tune in to customers' comments and making enhancements, making a

difference clients have an awesome encounter within the future.

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