Multipurpose Progressive E-Commerce Web Application

ABDULLA AL JABER

20175344004

SOFTWARE ENGINEERING

***Overview:***

E-commerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions. Global retail e-commerce sales are projected to reach $27 trillion by 2020.

Using e-commerce, organizations can expand their market to national and international markets with minimum capital investment. An organization can easily locate more customers, best suppliers, and suitable business partners across the globe. E-commerce helps organizations to reduce the cost to create process, distribute, retrieve, and manage paper-based information by digitizing the information. E-commerce improves the brand image of the company. E-commerce helps the organization to provide better customer services. E-commerce helps to simplify the business processes and makes them faster and efficient. E-commerce reduces paperwork. E-commerce increases the productivity of organizations. It supports "pull" type supply management. In "pull" type supply management, a business process starts when a request comes from a customer and it uses just-in-time manufacturing way. In that way, E-commerce made our work very efficient.

In this project I’m going to build a multipurpose progressive web application. Which can deal with any kind of product. No matter is it car, a pen or a laptop. User will be able to buy any product. And it is a cross platform application.

***Tools:***

Tools I’m going to use in this project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Platform** | **Language** | **Motive** | **Framework** | **Version** |
| Phpstorm | Php | Server side | Laravel | 8.0 |
| Webstorm | JavaScript | Client side | ReactJs | 17.0.1 |
| MySQL-Workbanch | MySQL | Database | Query Builder/ Eloquent | 7.4.9 |

***Project Strategy:***

We will create an admin dashboard to control the whole website. And to control the client site we will use API(Application Programming Interface). And this admin panel will be build using Laravel and React Scaffold. That is to say the admin panel will be build using Laravel and React Scaffolding. And the API will be used by client application.

For the user web application we are going to use pure React Client Application. And many more features will be included.

As I mentioned before our application is going to be the progressive web application. And using the PWA technology we will extract ios and android application. So that we do not need to build ios and android application separately. We can extract android application from the PWA features directly. Or we can use android trusted web activity, PWA android wrapper, android webview and so on. Later I will decide which strategy to choose.

And for the ios application I am going to do the same as android. For simplicity take a look at the diagram below:-

Directly From PWA Feature

PWA IOS Wrapper

Using IOS Webview

ANDROID APP helps organizations to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.

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Directly From PWA Feature

Android Trusted Web Activity

PWA Android Wrapper

Using Android Webview

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Pure React Client Application

Consume Admin API

User Features

PWA Features

USER WEB APPLICATION helps organizations to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.

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Admin Features

API for Client Application

Laravel and React Scaffold

ADMIN DASHBOARD helps organizations to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.

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Besides this application, we have online payment functionality. So that client from any district in Bangladesh can order product easily. To let the client know about the update of our application or product, we will be using the push notification system to send push notifications. Once the user orders a product, we will notify the user by sending an SMS. For doing that we will be using Short Messaging Service API. At last not least, to keep track of the client location, GEO location functionality will be added. If the user allows the location, the admin will get the client's current location.

***Technology to Be Used:***

PWA (Progressive Web Application) technology is going to be used in this project. We should know how it is useful in this project.

PWA is a modern way to develop the high-performance web application. It’s not like an ordinary web application view. PWA is an alternative ordinary web application. Using PWA features we can access the native function of android or ios.

Companies like AliExpress, Flipcart, Twitter Lite, Forbes, OLX, Lancome, MakeMyTrip, Uber, and many more companies are using this technology these days.

Benefits of PWA:

* Improved performance
* Faster loading times
* Engaging user experiences
* Less data use
* Smaller android app size
* Smaller ios app size
* Low cost, faster development

***Advantages of Ecommerce:***

* Faster buying/selling procedure, as well as easy to find products.
* Buying/selling 24/7.
* More reach to customers, there is no theoretical geographic limitations.
* Low operational costs and better quality of services.
* No need of physical company set-ups.
* Easy to start and manage a business.
* Customers can easily select products from different providers without moving around physically.

***DISADVANTAGES OF ECOMMERCE:***

* Any one, good or bad, can easily start a business. And there are many bad sites which eat up customers’ money.
* There is no guarantee of product quality.
* Mechanical failures can cause unpredictable effects on the total processes.
* As there is minimum chance of direct customer to company interactions, customer loyalty is always on a check.
* There are many hackers who look for opportunities, and thus an ecommerce site, service, payment gateways, all are always prone to attack.