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E-Commerce Website

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ABSTRACT

Building a single page web application for e-commerce, to create a platform over online portals that facilitates online transactions of goods and services through transfer of information and trade over the Internet. In this project we are going to build a dynamic webpage which is different from the usual website, where in we are introducing to a website which dynamically loads the content and details of the products and services to the user in which he is interested in. Users will have a great experience while surfing on the web site because in a dynamic web page user need not load the entire page. Single page applications are fast and responsive because it does not load the entire page which significantly increases the website's speed and efficiency. Keeping the value of time user under consideration, when user is spending his valuable time, our aim here is to provide him with the best experience as well as user friendly interface to save his time. This makes the website less complex for implementation, better performance experience, different from other web sites, better search engine optimization. To successfully run this website, we will need HTML5, CSS, and JavaScript and some of its libraries as Front End and Firebase as a Backend. JavaScript libraries are used to manage dynamic content and Firebase for databases, to build an entire e-commerce site. It is used by the many web developers to create a dynamic web page and this technique helps web pages to be updated asynchronously by exchanging small amounts of data with the server behind the scenes, which makes it possible to update the parts of a web page, without reloading the whole page at any instance, it also helps developers to make webpages interactive and dynamic. We use HTML because the dynamic characteristic of the way it functions while a page is viewed.

Keywords— E-Commerce

1. INTRODUCTION

Loading a static webpage has greater time complexity when compared to dynamic web page. A single page application removes the need of constantly reloading the entire webpage, and it dynamically reloads the relevant content in web page according to the user interaction and interest. This results in a user experience that is faster while transitioning between different navigational sections. It is a website that allows you to buy goods, digital products or services online. Trade of goods and services has been prevalent for centuries. Hence managing the need for demand and supply of goods and services is also important. Transactions are never ending processes all over the world since centuries, locally, and across locations. Keeping the same concept in mind, now we switch to UPI. Many of the top website's function as SPA's including several of Google's tools like Gmail, Google Maps, and Google Drive. And social media giants, including Facebook and Twitter. This single page ecommerce platform provides smooth and simple way of adding, updating and manipulating changes in products, stocks etc for quickly updating the website. Adding promotional banners at the header is our initiative to drive perfect call to actions to help our visitors make smart decisions. To stand out we have decided to provide a perfect shopping experience to the visitors by making the product price, quantity, discount, and the total amount are shown on the same page hence, the customer can purchase all the products side by side instead of redirecting them to some other pages for the checkout process. Our web page also has an amazing feature that enables customers to track their orders through the order tracking page.

2. LITERATURE SURVEY

Internet has become the virtual world in this 21st century and has major influence on the globe which is serving billions of users all over the world. Creating something new with growing technologies and trying to bring a change in the traditional business brought us to build a successful E commerce. E-

commerce is a platform where we can buy and sell goods and services over the Internet. Businesses are now adapting to this and have built their websites which allow consumers to browse products and services. Consumers then purchase the goods and services using various methods (e.g., credit card, debit card, electronic check, PayPal) via the website payment gateway. Finally, the businesses deliver the orders to the consumers' doorsteps. Consumers can track the status of the product or service ordered as needed at any instance. All of these activities are conducted online.

There are different types of successful e-commerce businesses out there but the most common are as follows:

- **Business-To-Business:** B2B involves trade dealings between businesses where sale of merchandise is made to an interim purchaser. B2B e-commerce model deals with interactions among businesses. About 80% of e-commerce is in this category. Some examples of B2B are transaction between a manufacturer and a wholesaler, or between a wholesaler and a retailer.
- **Business-To-Consumer:** In this model the trade is conducted directly between company and consumers via a website. In the B2C model, businesses or organizations trade goods or services to customers over the Internet for consumer's own use.
- **Consumer-To-Consumer:** This is the fastest-growing type of e-commerce. Businesses create and provide a platform to advertise the product, and buyers can buy the product directly from the seller. In the C2C model, businesses provide an environment where consumers buy and sell goods and services directly to each other.
- **Consumer-To-Business:** In a C2B model, customers sell goods and services to businesses, and the corporations purchase the products and services. Consumers provide value added good or service, and the businesses consume that value. This project is precisely made for B2C method as it is Single Seller and Multiple Buyer System.

3. SYSTEM DESIGN

To design an E-commerce website the method of shaping the coding is done in HTML5, CSS3, JavaScript and Boot Straps for designs, interfaces and information for a system to satisfy mere needs.

System Module Description:

- Coding (HTML, CSS3, JavaScript, React JS, Node JS, Fire Base)
- Methodology
- Software Architecture
- Data Design Model

HTML

The **Hyper Text Markup Language (HTML)** is the standard, basic and easy to learn language which helps to build a web site. It provides functionalities, features and marks the information like documents in the web browser. With the use of 'HTML' we can include images, texts, paragraphs, videos, hyperlinks, buttons, search box, lists, check boxes etc in a web site. Which makes HTML language a must to learn for developing or constructing a web page. HTML is the first language which was invented by Tim Berners Lee in 1980 for web development. But it was made standard at 1993 by IETF (Internet Engineering Task Force). HTML language is more of opening and closing tags which are used to include all types of information and document in different format. For example: to include a paragraph we use <p> opening tag and </p> closing tag and the content is written in between the opening and closing tag.

Inclusion of CSS defines the look, layout and styling of content in the page.

CSS

Cascading Style Sheets (CSS) is a style sheet language used for styling the web page. Without using CSS, we can't expect a webpage to look appealing, and doesn't draw any attention from the user. In simple words it makes the page look attractive, creative and beautiful by adding some colours, animations, motions and 3D effects to images, describing the presentation of a document written in a markup language such as HTML. CSS is designed to the separate the presentation, content, including the layout, colours, and fonts. CSS improves accessibility which provides more control in the specification of presentation of characteristics in the code which enables multiple web pages to share same style formatting by specifying the CSS in a separate .CSS file which reduces the complexity of the code and repetition in the structural content. CSS file is used to improve the rate of speed at which the page reloads between the pages so that the code is shared by the different other files and their formatting.

JavaScript

Java Script is often abbreviated as **JS**, it is an object oriented, is high-level programming language. It has curly-bracket syntax and includes dynamic typing and first-class functions. It is a programming language used both on the client-side and server-side that allows you to make web pages interactive. Every browser has an embedded engine which is also called a JavaScript virtual machine. Different engines have different "codenames". For example, V8 – in Chrome and Opera. Spider Monkey – in Firefox. Java Script was initially called type script.

React (Java Script Library)

React is an open-source library built at Facebook by Jordan Walke on 29 may 2013. It is used to develop single page applications. It is used in front end. In React, JavaScript library is used for building user interfaces or UI components for web page. It is maintained by community of individual developers and their companies. React is a basic need in the development of single page or mobile applications. React mainly focuses on managing the state and to render the state of DOM. In the process of creation of a react app we will also need some different libraries in successfully establishing routing and some functionalities for managing the client side as well. In react coding there are some entities, which are called components and these components are rendered in a particular element called DOM and to do so we can use react DOM library

Node JS

Node.js is also an open-source frame work which runs on different cross platforms and is mainly used in backend management. It runs easily and smoothly in V8 engines. It executes java script code outside the browser. Which encourages browsers to write commands for server-side scripting and running to load the content dynamically in a web page. Node alone can manage the backend so most of the full stack developers use node as their backend management coding language. Node was actually managed by Node JS foundation but now it is merged with Java Script Foundation

Firebase

Firebase is a free platform developed by Google for users to create mobile and web applications. Firebase was an individual company which was very unique and google acquired this platform on 2014. Its first product is to provide a real time data base for API's which synchronizes application data across

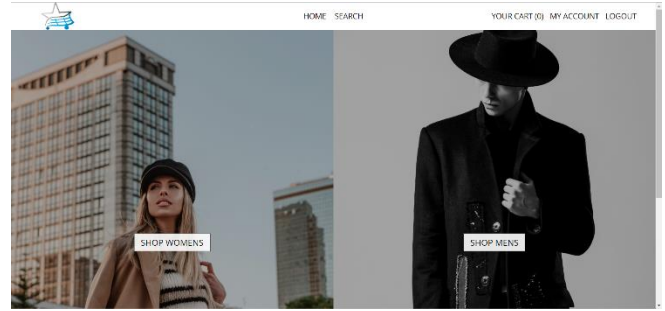
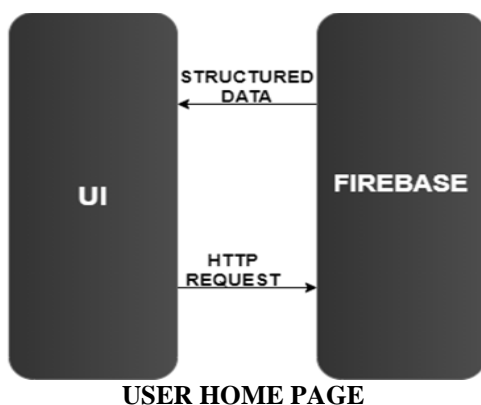
different operating systems like IOS and Android and stores the data in the Firebase's Cloud. Fire base helps in building real time collaborative applications.

4. METHODOLOGY

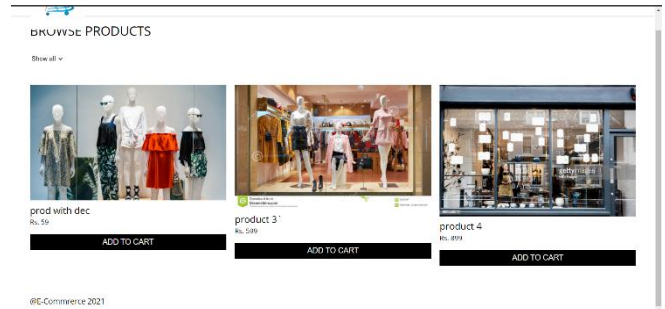
Almost 70 percentage of Indian population has switched to shopping online. According to google trends and surveys its estimated to grow more by 8% by 2025. Hence building an e commerce website is a successful business. Almost 40% of Indian population has switched to online business during the pandemic. Taking this as an opportunity we are trying to solve the problem of switching the small scale and retail offline businesses to online. Throughout the process of building a web site our main scope is to integrate it with some unique features to make it stand out of the others. And also, to make the website's UI simple and UX to be more interactive and connecting to costumer. Each product has multiple images from different angles for costumer's satisfaction. In this web site a new user can view, search, sort, filter the products without any login credentials but, he or she has to register to add products to wish list and cart to save for later or to place an order. When user proceeds to check out, his credentials will be auto authenticated and verified by our data base and is provided with all the details to which the further services are provided like phone number, delivery address, shipping charges, mail id etc. Then the user is redirected to a secure payment service gate way through which transaction is carried out. Once the transaction is placed user will be notified with an email as well as a message regarding the purchase invoice, order summary and all other updates related to the order i.e., order id, delivery service provider number, live order location etc. We have included a live order tracking page for the costumers to know about the live location of the product to ensure that the product is in right track and predict the delivery time. Every time when a registered user logs into the website he has a quick access to the products of his wish, cart list which is viewed in the separate column. Which saves the time of the costumer We are also trying to implement a chat bot for 24/7 costumer queries assistance.

Managing and updating the entire website may sound difficult task for admin. Keeping this in mind we have used firebase as our data base which serves a very user-friendly tool. Admin has access to the entire website for future modifications. He has access to products, quantity, price, images, offers, promocode etc that is provided to the costumers and all other features. He can add new category, product, make changes in the stock quantities of the products, add offers make changes in promocode time etc. He can use the data provided by the costumers and make some changes according to the customer needs and comments and can serve them with better offers and discounts.

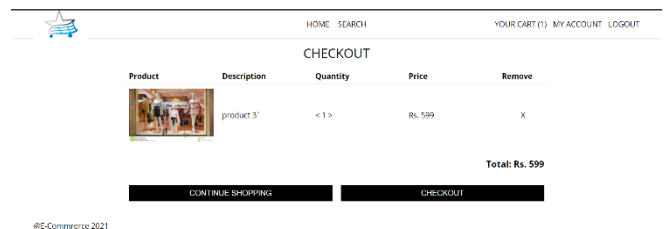
5. SOFTWARE ARCHITECTURE



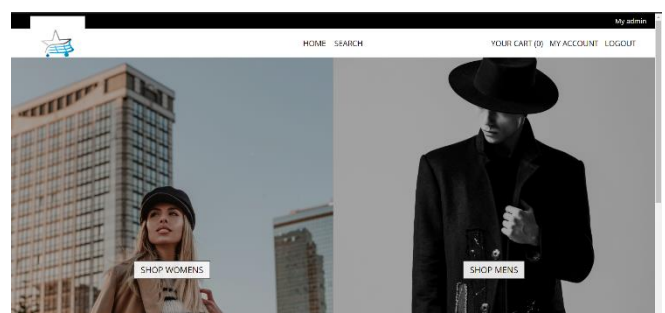
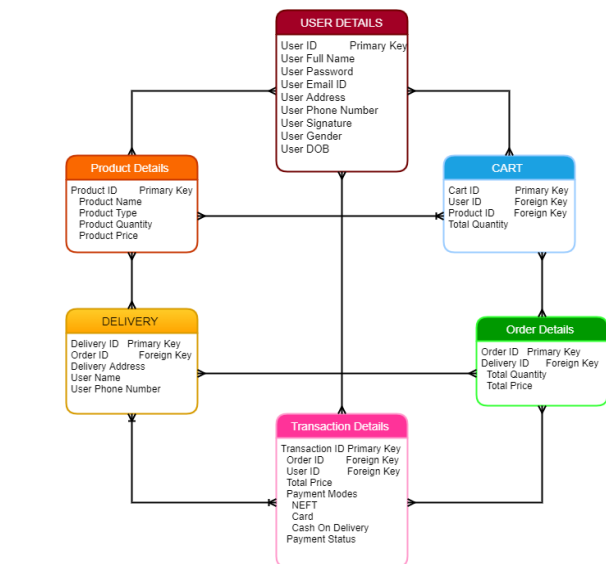
Products page



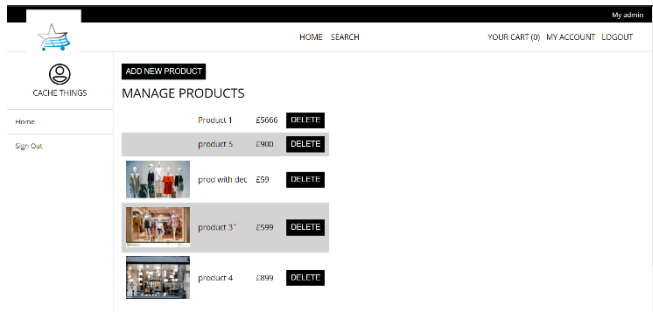
Checkout page



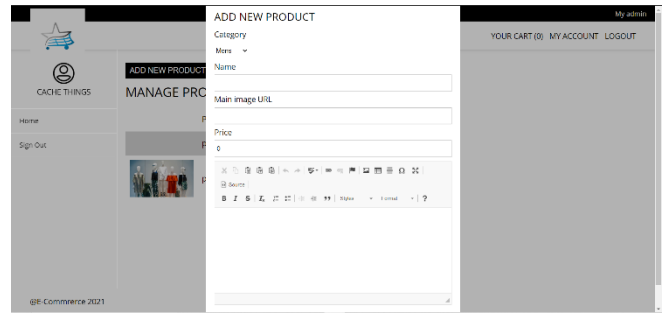
Data design model



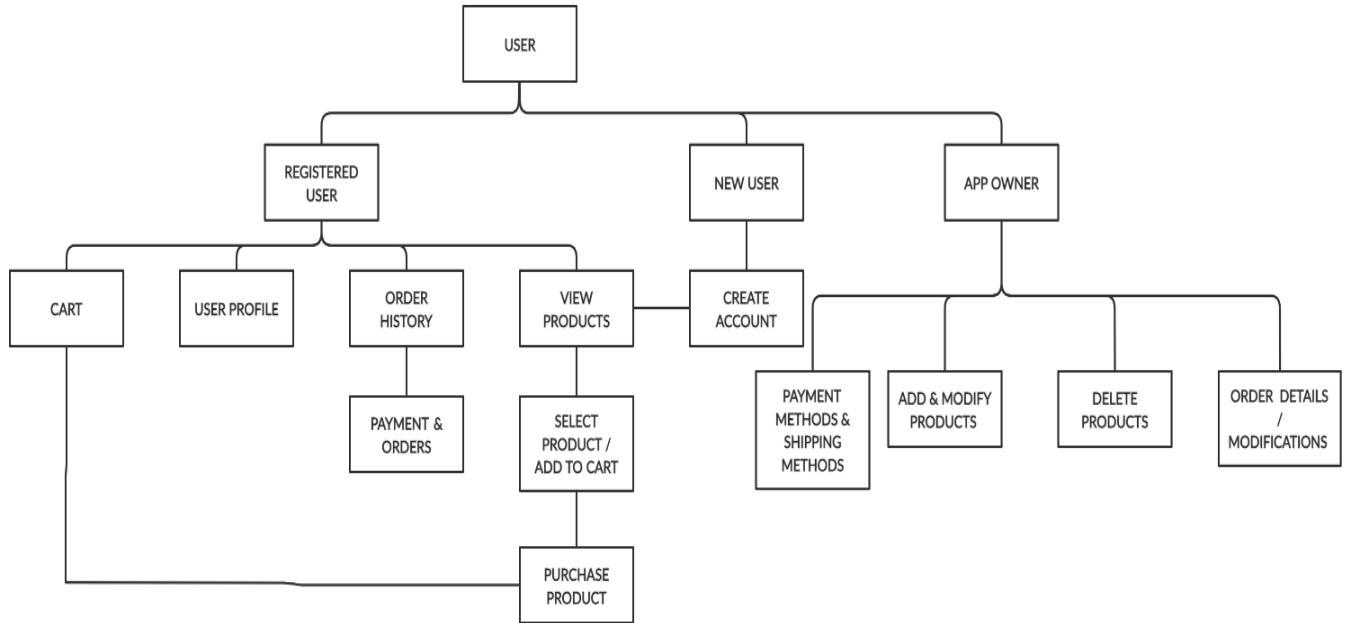
Admin Products Managing Page



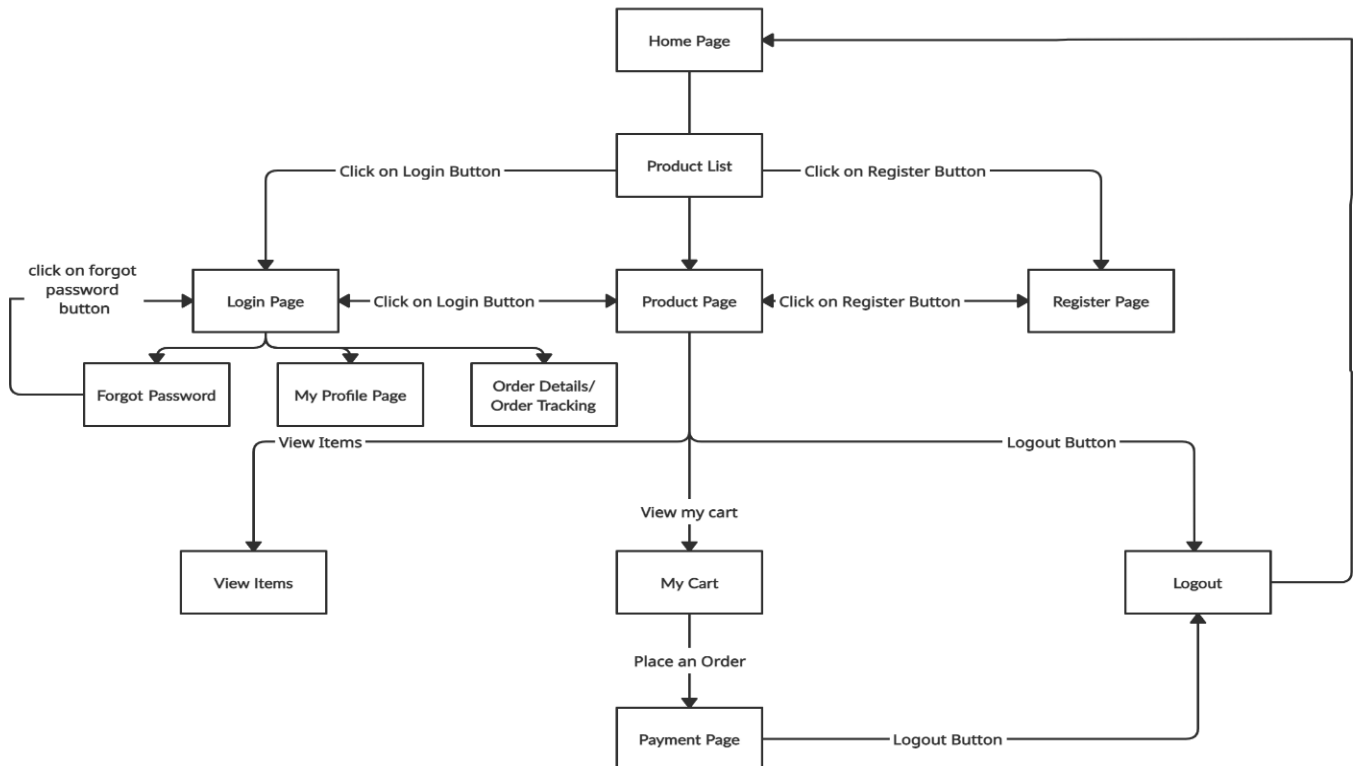
Admin adding products page



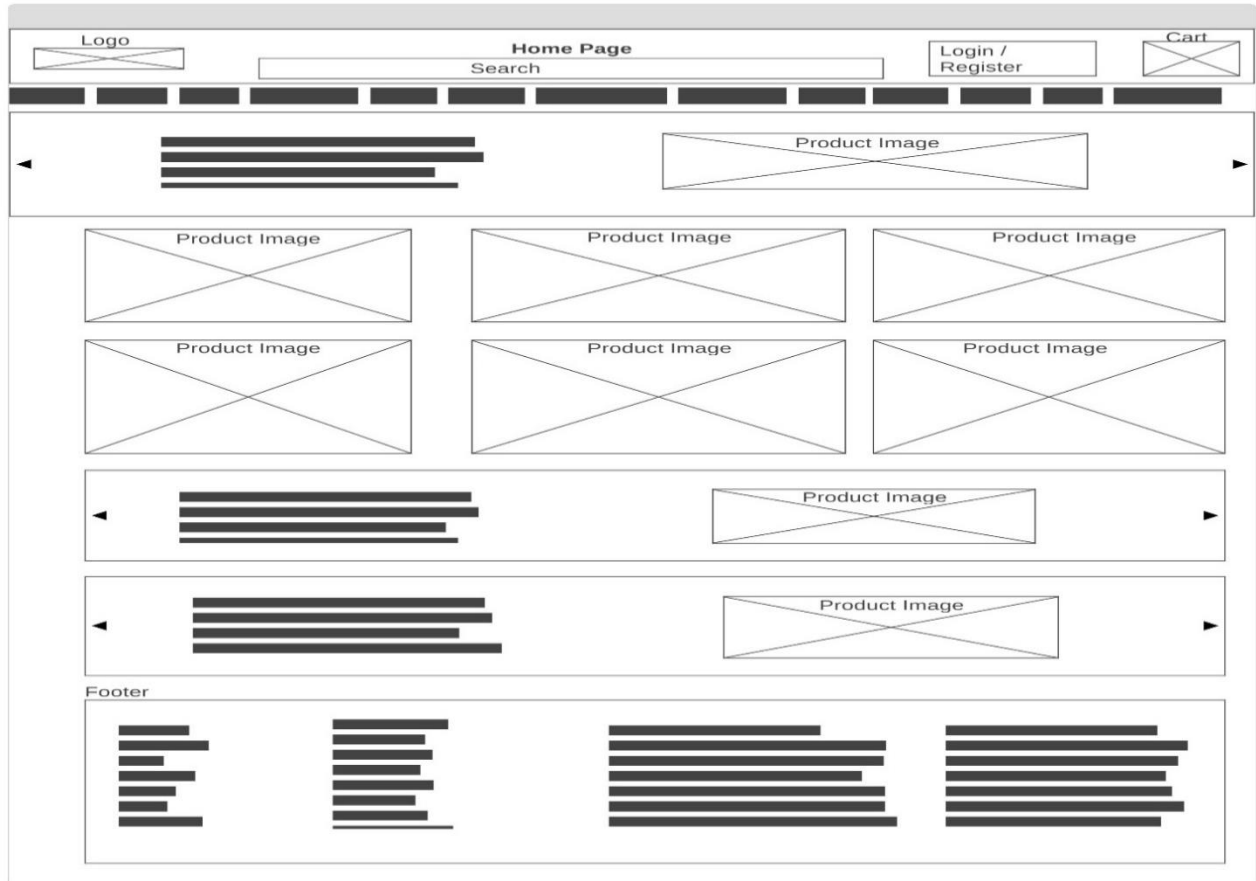
Information architecture diagram



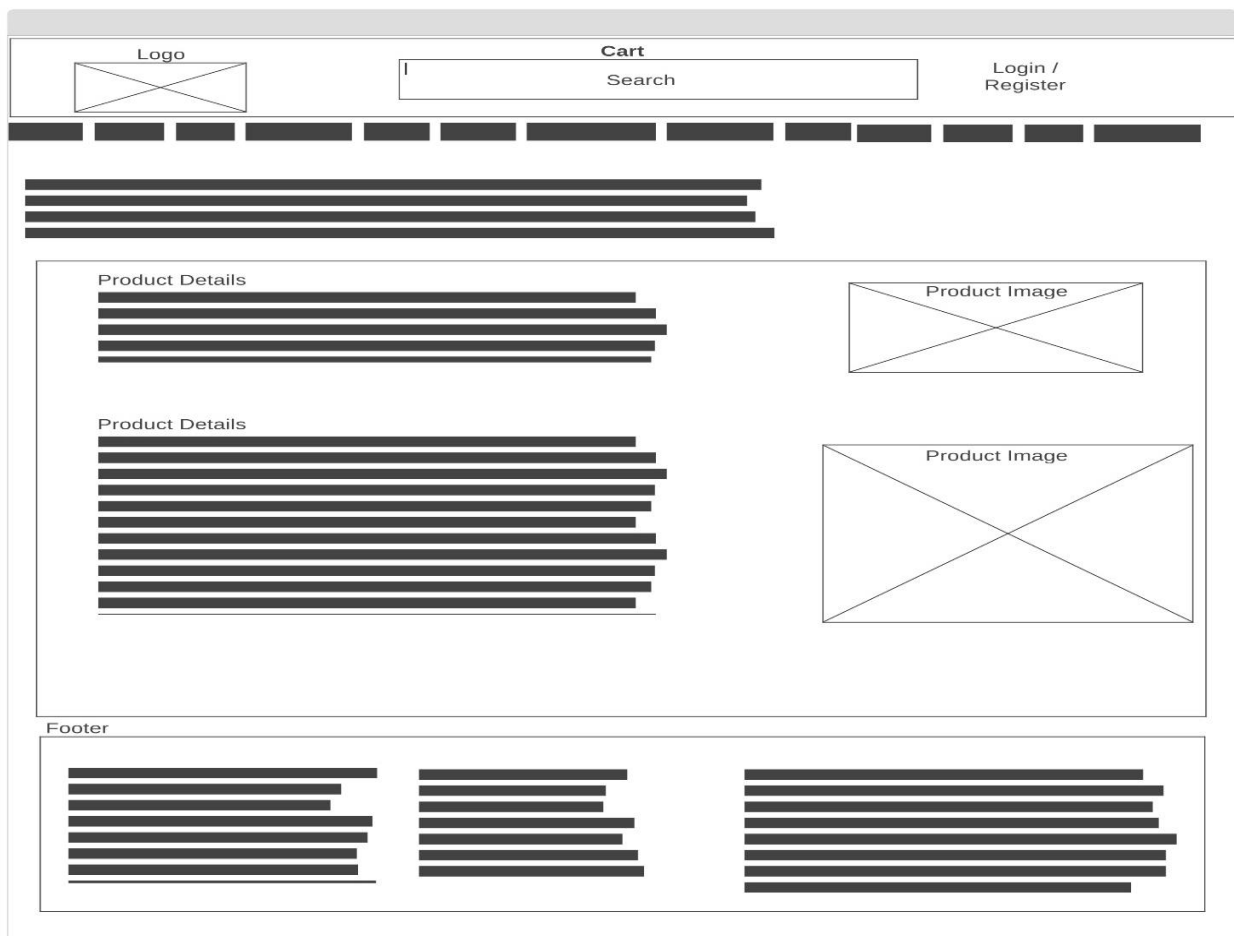
User Flow Diagram



HOME PAGE






CART PAGE



PRODUCTS PAGE

Product Page



PRODUCT NAME

PRODUCT IMAGE


PRODUCT DESCRIPTION



ADD TO CART

FOOTER

CHECKOUT LIST

CHECKOUT PAGE



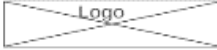
PRODUCTS DETAILS



TOTAL AMOUNT DETAIL

PROCEED

PROFILE PAGE

PROFILE PAGE



PERSONAL DETAILS

PROFILE PIC

ORDER HISTORY

Login Page

Logo

Username / Mail-ID

Password

Login

Registration Page

Logo

Username / E-Mail

E-Mail Address

Password

Verify Password

Register

Login

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