S-CART :: WELCOME BUDDY

Project Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of
Technology in the field of Computer Science and Engineering

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CERTIFICATE

This is to certify that **SHUBHANJAN BARAI (123180703083) , RIYA DUTTA (123180703065) , SANA ASGAR(123190703215) , SAUNAK NANDI (123180703076)** have completed their project entitled **S-CART :: WELCOME BUDDY,** under the guidance of **MRS. SONALI BHATTACHARYA** in partial fulfillment of the requirements for the award of the **Bachelor of Technology in Computer Science and Engineering** from JIS college of Engineering (An Autonomous Institute) is an authentic record of their own work carried out during the academic year 2020-21 and to the best of our knowledge, this work has not been submitted elsewhere as part of the process of obtaining a degree, diploma, fellowship or any other similar title.

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Signature of the Supervisor   **Signature of the HOD**   **Signature of the Principal**

Place: KALYANI

Date: 30.05.2022

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CONTENTS

PUBLICATIONS FROM THE WORK

INTRODUCTION

WHAT IS E-COMMERCE?

Business transaction of any form which is managed online is referred E-commerce. One of the best examples of E-commerce is online shopping, online shopping can be of anything like buying goods or selling of goods through internet. We can do online shopping from any device. Apart from online shopping we can also perform various other works such as internet banking, ticketing, payments, and online auction.

E -Commerce also known as electronic commerce is dealing of services or goods on cyberspace. It is your crowded city center or brick and mortar shop which is interpreted into zeroes and ones on the information superhighway. Around 2.14 billion individuals worldwide have a tendency to buy services and goods online.

E commerce is a way for numerous people for buying and selling products in retail. E-Commerce gives an opportunity to small business and large companies or start-ups to sell their goods and connect with people around the globe. There are number of companies that uses E-Commerce to sell their products online but for numerous companies it

is a distribution channel which is included in broader strategy like physical store and revenue system.

WHAT IS E-COMMERCE WEBSITE?

E-commerce website is a automated shopfront on the cyber. It makes the transaction very smooth between the buyer and the seller. It is an imaginary room where you can present your items or things and the consumer will make their choice. The E-Commerce online shopping website will act as product holder, dealer and cashbox for online marketing.

Businesses on E-commerce website perhaps make branded shop experience on Amazon store, they make their own E-Commerce website on dedicated domain and create multi-channel approach.

ABOUT S-CART

S-cart is an online shopping website that means an e Commerce website where people of all ages can buy stationary products such as scissors, project paper, pencil box etc within a very affordable price range.it takes care of all security aspect and assist the user secure order and payment.

both logged in and guest user can use and shop from the website securely. Users can make a secure payment through PayPal or debit card or credit card or cash on delivery.

TYPES OF E-COMMERCE

E-Commerce has plenty of different form because there are many different ways to do online shopping, there are Business models that shaped the world of e-commerce and some of them are -

1. Business to Consumer (B2C):
   B2C, Business to Consumer, this is a commerce transaction, here people sell their items or services to consumers. In business to consumer the primary driver is behaviour of the consumers. If you are able to figure out what the consumers wants and found a way to motivate the customer for making purchase, then you will be successful. This drive is the reason behind the B2C sector, but this can also prove to be major challenges for any business entity working in B2C. Identifying what consumer wants and deciding how to distinguish your items or services from other sellers are major area of interests for market research and R&D divisions in the 21st century.
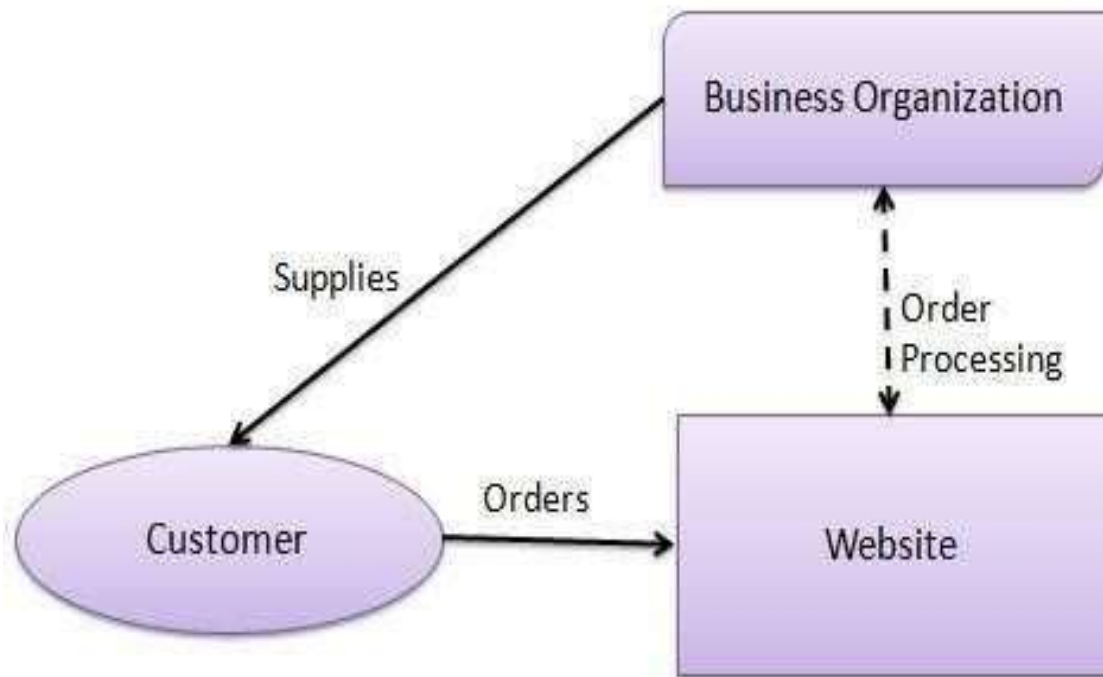
FIG 1: B2C MODEL

2.Business to Business (B2B):

Business-to-business (B2B), also known as B-to-B, is transaction between businesses, such that one of them including a manufacturer and wholesaler, or a wholesaler and a retailer.

Business-to-business refers to business that is conducted between businesses or companies, not between a business and individual consumer. Business-to-business stands in contrast to business-to-consumer (B2C)and business-to-government (B2G) transactions. The transaction of Business-to-business (B2B) or business is held between one business or another, such as a wholesaler and retailer. This transaction mainly takes place in the supply chain, where one

company will buy raw materials from another company to use in the manufacturing process. In auto industry companies, property management, housekeeping, and industrial clean-up companies B2B transaction are commonplace for them.
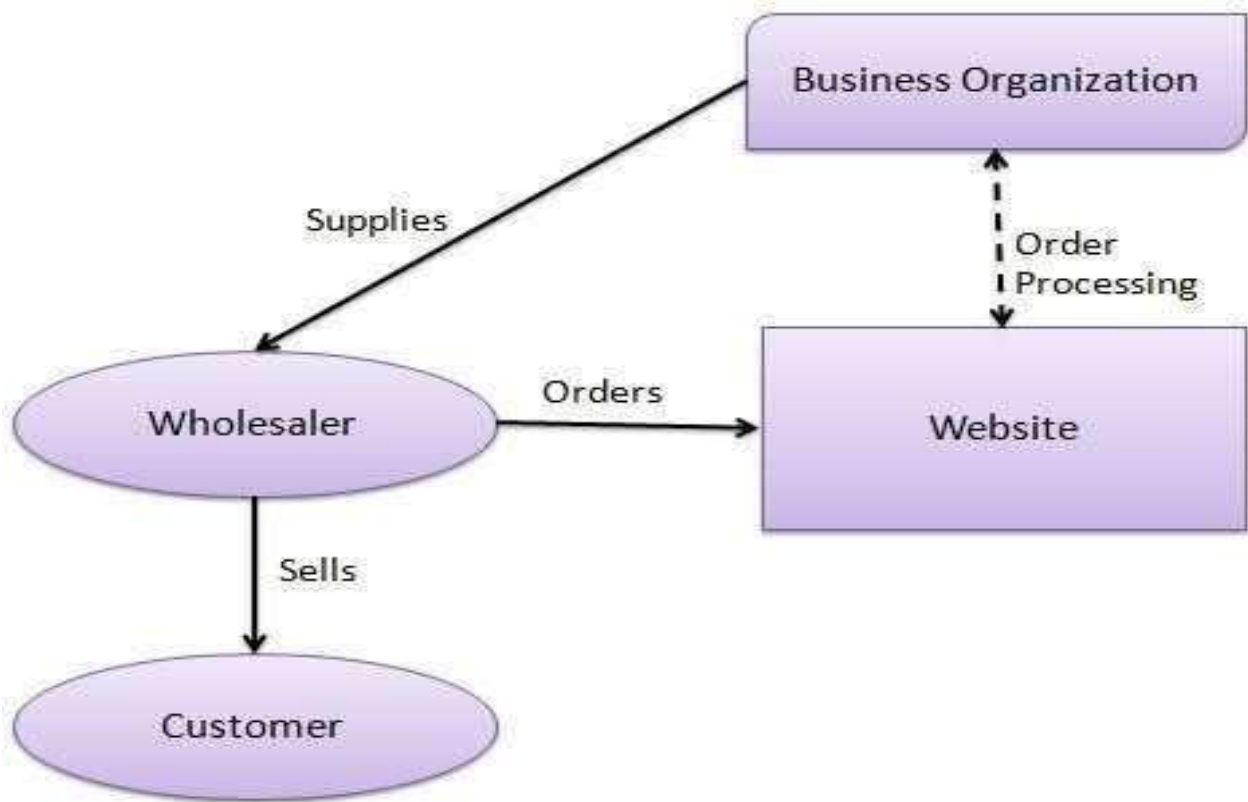

FIG 2: B2B MODEL

3.Consumer to Consumer (C2C):

This business model is for customer to customer where two or more customers can trade with each other in online environment.

Implementations of two C2C markets are auctions and classified advertisements. C2C marketing has gained popularity with the presence of the Internet and companies such as eBay, Etsy, and Craigslist. Customer to customer (C2C) is a business model that allows consumers to trade within themselves, more frequently in an online environment. This is a type of business model that emerged with sharing economy and e-commerce technology. some of Online C2C company sites include Craigslist, Etsy, and eBay, which sell products or services through a classified or auction system. Some C2C companies have issues, some of them are lack of quality control and payment guarantees.
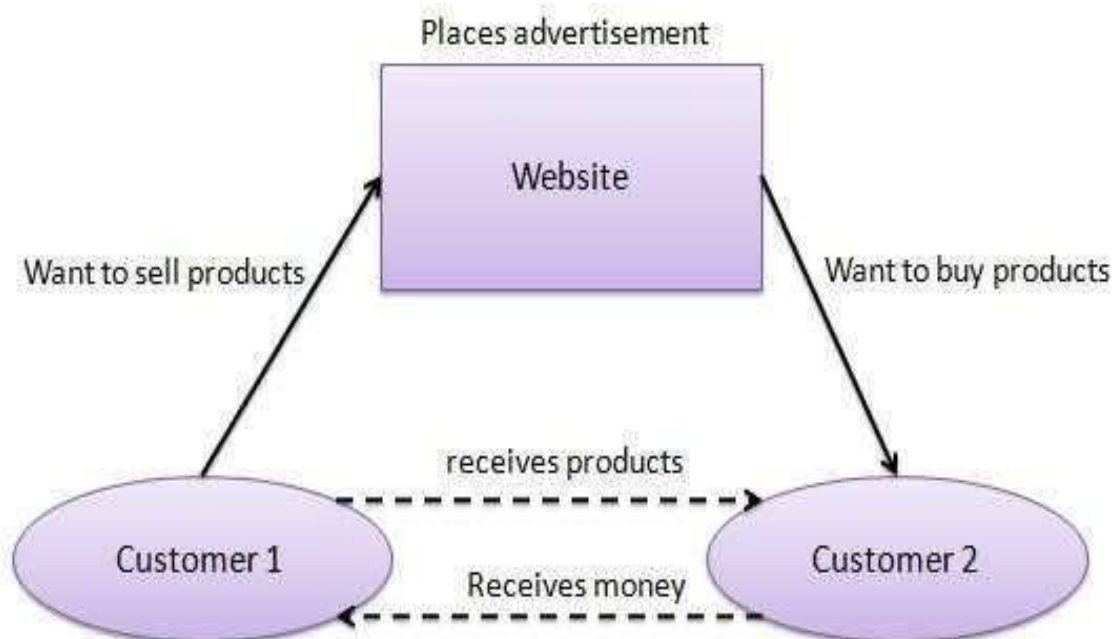

FIG 3: C2C MODEL

4.<u>Consumer to Business (C2B)</u>:

This is consumer-to-business model, or C2B, it is type of commerce where a customer or end user gives a product or service to an organization. C2B business solutions are often used to drive business to a company's e-commerce platforms.C2B evolved more recently because popular consumer-generated media and content across consumer segments-social networks, websites, blogs, podcasts etc. It also allows customers to make an informed decision about purchasing goods from your company without having any pressure from salespeople. Here, you might imagine a freelance photographer contracting with a great professional sports team or a brand-new restaurant.
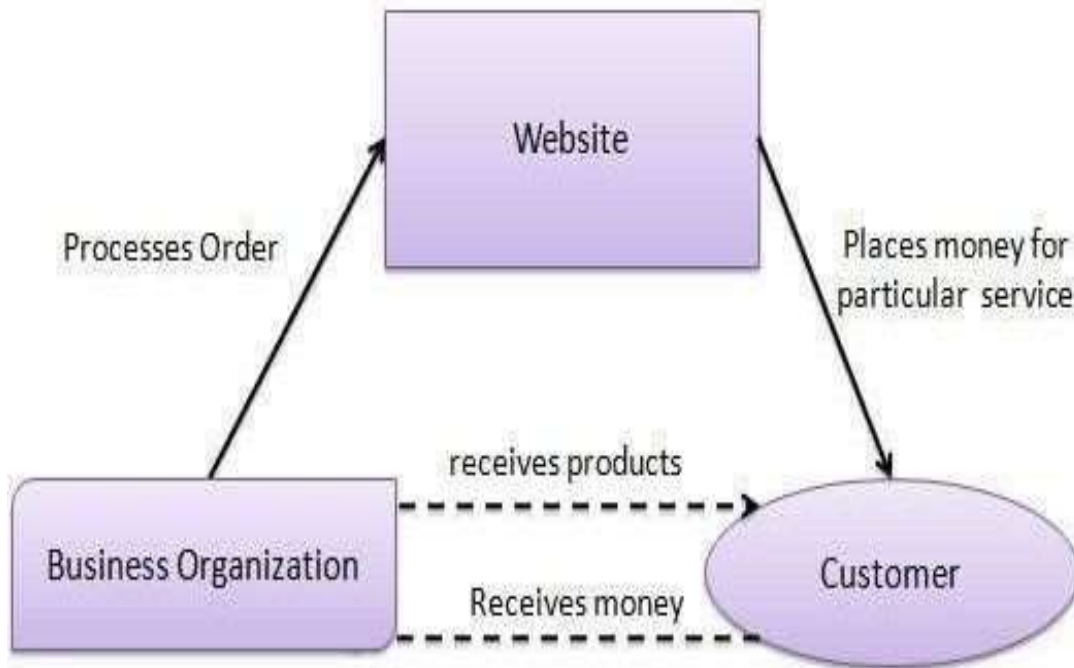
WHERE AND HOW DOES E-COMMERCE TAKE PLACE?

E-commerce is generated by the internet, where user can have access to an online shop to browse through, and place orders for items or services through their own devices.

Online shopping evolves and shifts daily. People can use their computers, phones, tablets, and other devices to shop. People like to shop online, and they give importance to website and social media pages and participate in thriving virtual channels. Let's see three methods of conducting e-commerce today.

M-commerce

Online transactions which are done on mobile devices are known as mobile commerce or "m-commerce." With portable devices in the hands of consumers worldwide, it's no wonder m-commerce is expected to overtake non-mobile commerce in 2021.be it a smartphone, tablet, or even a wearable device are m commerce.

M-commerce allows the consumer to book air ticket, movie tickets, event ticket, railway tickets, and hence saving a lot of time.
For example Book My Show, IRCTC mobile applications offers the online reservation services.

Enterprise E commerce

Enterprise E commerce is the buying and selling of products to large business or organizations. Commerce enterprise has an end-game objective that's common for both the large and small businesses looking for online solutions. Choosing the right enterprise E commerce platform is essential in ensuring the smooth running of your company's online sales, including crucial touch points such as product fulfillment and customer service.

<u>Social media E commerce</u>

E commerce social media is the practice of using social media to market an E commerce store. Social media can help you market and promote E commerce stores to a broad audience. Just as social media allows you to connect with friends and family, it also has the ability to attract customers to your business. And the very basic thing is that social media is absolutely free. Businesses can set up their website pages, respond to messages, and form a following without spending a dime on the platform.

Social media can help you:

- Attract new customers

- Build brand awareness

- Generate online sales

<u>BENEFITS OF E-COMMERCE</u>

Clearly online commerce offers a plethora of benefits. Let's look at some of the biggest ones.

1. <u>Convenience:</u> Each product is on the tip of your fingers on the internet, literally. Type the of the product you are searching for into your

favourite search engine and every option will appear in a well-organized list in a matter of seconds.

2. <u>Price comparisons</u>. Customers can buy products around the world and conduct comparisons either directly by visiting different sites, or by visiting a single site where prices are aggregated from a number of providers and compared.

3. <u>Global marketplace:</u> Time saving. In e-commerce we don't need to drive in circles for searching and digging in hopes to find what you need. Online stores provide their full line and use warehouses instead of store fronts—items are easy to locate and can be delivered in just few days.

People from around the world can easily shop from e-commerce sites –

companies are not dependent or restricted by geography or physical barriers.

4. <u>Minimized expenses:</u> With every online business wanting you, more and more coupons and unavoidable deals, which are extremely great for customers.

Though brick and mortar are no longer required, online sellers can launch online stores with very less start-up and operating costs.

WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF E-COMMERCE?

As the business grows, most E commerce brand owners comes to crossroads: to scale up in-house operations and search for a way to store, manage, and ship more inventory, or enlist a fulfilment service? Here are three potential solutions:

Retail E commerce is growing rapidly

In the upcoming years, it is assumed that growth of e-commerce will rise like never before with all the current technologies. As internet accessibility and adoption are rapidly growing worldwide, the number of online buyers keeps climbing every year. Euromonitor International projects states that half of the absolute value growth for the global retail sector from 2020-2025 period will be digital.

Global marketing reach

The Internet has revolutionized the international company's arena and global marketing in particular. In the past, a business's reach was limited by the number of people able to physically enter through a

store's front doors. There is big boost in opening global market for small companies. Businesses that had been exporting for more than five years or more via e-commerce platforms have reported boosts in sales of more than 30%.According to a study by Inviqa, 59% of millennials use Amazon first when online shopping. Millennials also gear towards e-commerce businesses to make price comparisons, with 41% of them almost always using multiple websites when buying an item.

Lower operating costs

When determining transaction costs, businesses have to factor in expenses required to maintain and process the activities. You can start an E commerce business channel without leasing retail space, recruiting a team of employees, or having a large warehouse.

Selling online has turned almost every business into a global marketplace. While potential profits are bigger than ever before, competition is higher than it has ever been. Once online, your store is open 24 hours a day—without the need to be monitored or staffed like a physical store. To reduce operating costs, businesses can centralize the space necessary for production. By examining and measuring your business's working efficiency, you can reduce and

adjust the use of available resources. Many businessmen sell their products on numerous online eCommerce sites.

Direct-to-consumer access

Due to the internet, E commerce brands can directly build relationships with their target audience. We don't need to pay for a giant billboard or TV ad campaign to capture your consumers attention. You can alter your brand and marketing to fit your customers' wants and requirements down to special offers and personalized product recommendations.

CHALLENGES OF ECOMMERCE

Despite a lot of benefits, E commerce does have limitations. Some businesses may try to avoid E commerce due to challenges like:

- Limited face-to-face interaction

- Technical difficulties

- Data security can be a challenge

- Shipping and fulfilment at scale

Technical difficulties

Technical challenges beyond our control can have very negative impact. Just like a hiccup in your supply chain can prevent timely delivery of items, internet problems, or a hard drive failure can cost a lot time and money.

Keep in mind that, for every technical issue which can arise, there's likely a solution or a preventative measure you can take. Be sure to back up your data on regular basis.

Data security concerns

There are a number of hazards on the online store that you must guard against. Some of the instance of security concern are Hacking, exploitation of personal data, monetary, unsecured supply of services, phishing, assaults and theft.

Shipping and fulfilment at scale

It may sound easy to wrap up and ship orders from your garage or spare room when you're starting out in E commerce. But as your business grows, fulfilling the order becomes a much more time-consuming process. Sudden rise in orders can leave you scrambling to fulfil orders. Using a service like Fulfilment by Amazon can help bring down the strain on your business and keep customers satisfied.

WHAT MAKES AN E-COMMERCE STORE SUCCESSFUL?

Use High-Quality Photographs and Good Product Descriptions

High-quality items images and pictures are an extremely important part of your e Commerce digital strategy and necessary for attracting the attention of potential e Commerce customers. Outside the brick-and-mortar world, consumer can't touch the product and are making their buying decisions entirely dependent on product images and feedback.

Great products

A successful e commerce brand has High-quality, reliable products, and services at their heart. Your product should be able to solve an unmet customer requirement or challenge. You must also offer it at a good price point.

Your products' quality and pricing will make or break your e-commerce business.

Do some market research to get idea of what types of items your competitors are selling, also the market value of similar items.

Personalization

IT is an excellent technique that records what consumer viewed or visited on their last session on your e Commerce website and give them new buying suggestions on every following visit based on experience in the store. This can be a personalization based on previous behaviour such as last purchases or based on real-time data such as a location or time.

A target audience

Target your audience and then attract them towards your products. find loyal and enthusiastic customers. Whom do you wish to serve with your products? Target your marketing efforts at that group.

When you see your business gains steam, maintain the momentum by considering who will be moved by your brand story. Instead of chasing after buyers who don't want your items, focus your efforts on a group of consumers that will appreciate your brand.

A smooth online experience

User friendly online stores are the best. When the online experience of a shop is well-designed, making the purchase feels hassle free. If

customers have to jump through so many hoops, they will abandon their carts before completing the transaction, and your sales will suffer.

Keeping the spotlight on your product will make your online store successful by streamlining the checkout process. Remove any unwanted steps, make your user experience intuitive and straightforward, and bask in the glow of happy customers.

Timely order fulfilment
Consumer wants speed and efficiency, especially when shopping online. Doesn't matter what you sell, buyer want their purchases delivered intact and on time.

Fulfilment includes all step in the consumer journey from the moment a customer presses the "buy" button to the moment they unbox the item. Successful e commerce shops pay careful attention to the fulfilment process and make sure they have enough product on hand to fulfil their orders, even during their busiest season .

E-COMMERCE TRENDS AND STATISTICS

Ecommerce is growing

The eCommerce field is rapidly growing as the internet has becomes more accessible in the recent years and shows no sign of receding and are predicted by experts to grow by $6.54 trillion in 2022.

Holiday sales

During the 2020 holiday season—including Black Friday to Cyber Monday—independent businesses selling on some online store gained over 50% year-over-year growth in worldwide sales.

The report that Mastercard has shown was an 8.5 percent increase in retail sales over the holiday season compared with normal days.

Sales in stores and showrooms were upto 8.1 percent as compared to last year sales, while e-commerce sales were up 11 percent. Compared with 2019, before the pandemic brought a huge rise in online orders, e-commerce sales just jumped over 61 percent.

FLOW DIAGRAM
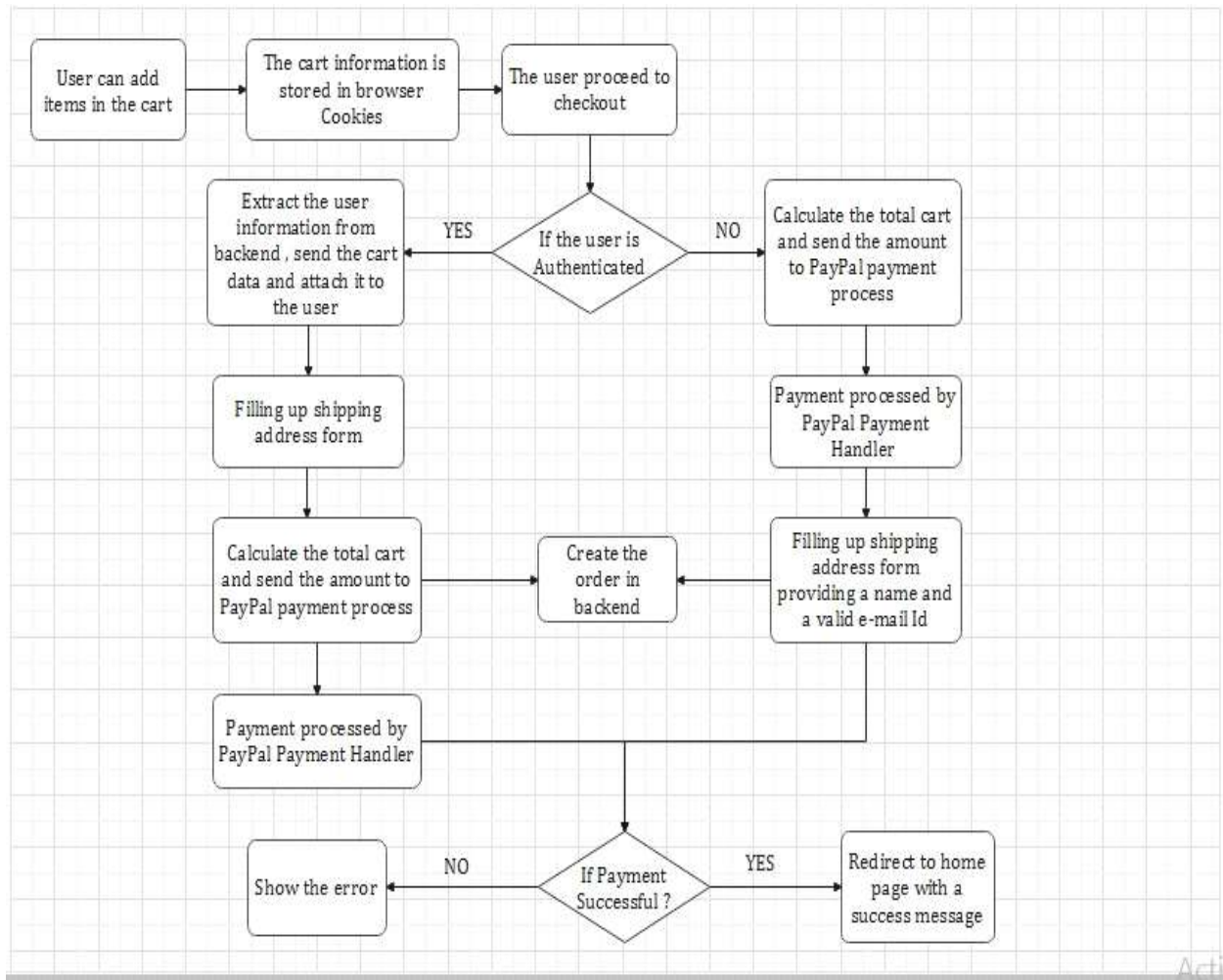
LITERATURE SURVEY

In a study, it was discovered that purchasing goods and products online by customers is still relatively low in India. Given the above issue, a study on online buying behavior was taken. Based on the literature review, four major dominant psychographic parameters that are attitude, motivation, personality, and trust were studied with respect to online buying. The online purchasing decision models based on all four parameters were devised after a statistical analysis. These models were integrated with business intelligence, knowledge management, and data mining to design a Behavioral Business Intelligence framework or BBI framework with a cohesive view of online buyer behavior. For a proper understanding of the factors of the internet and customers' behavior toward purchasing goods online, this branch demonstrates a picture of academic research reviews and relative ideas that are expressed in the literature that are associated with this subject.

Moreover, some hypotheses will be tested to answer the research questions. Current research shows that online shopping has become a very effective and well-established business model, therefore there are several studies that have been done based on online shopping and customer behavior.

In the following chapter, some points will be taken from the literature and need a very careful study on them to utilize them as a resource of the subsequent research investigation.

METHODOLOGY

The design that is being used for making this project is called Meta-Analysis Design.

Meta-analysis is defined as an analytical methodology designed to systematically evaluate and summarize the results from a number of individual studies, thereby, increasing the sample size and ability of the researchers to study the effects of interest.

IMPLEMENTATION

There are many software tools available to develop and create a web-based online shopping website. I have chosen these tech stacks that are open source so that they will minimize the development cost of the project to some extent. For developing the project, we have used HTML, CSS, and JavaScript as a web server and to design the frontend part of the website. NodeJS has a security feature to handle all the order and user management processes in the backend.

PROPOSED METHOD

DESCRIPTION OF DIFFERENT LANGUAGES USED TO ACCOMPLISH THE WEBSITE

- **EJS** – stands for Embedded JavaScript. It is same as HTML (Hypertext Markup Language) with some additional features like forEach loop, for loop, conditional statement i.e., if-else etc. EJS is a simple templating language that lets you generate HTML markup with plain JavaScript. No religiousness about how to organize things. No reinvention of iteration and control-flow. It's just plain JavaScript. The features are -

  o We love JavaScript. It's a totally friendly language. All templating languages grow to be Turing-complete. Just cut out the middleman and use JS!
  o Don't waste time and attention figuring out arcane new syntax because 'elegance' — or how to pre-process your data so it will actually render right.
  o JavaScript code in simple, straightforward script let tags. Just write JavaScript that emits the HTML you want, and get the job done!
  o EJS has a large community of active users, and the library is under active development.

- **CSS** – stands for Cascading Style Sheet. EJS just provides a skeleton of the Website, CSS fills the color and styling for the website. The features are –

  o You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.

29

- o If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So, less code means faster download times.
- o Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.

- **JavaScript** - JavaScript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities. The features are –

  - o You can validate user input before sending the page off to the server. This saves server traffic, which means less load on your server.
  - o They don't have to wait for a page reload to see if they have forgotten to enter something.
  - o You can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.
  - o You can use JavaScript to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.

- **NodeJS** – Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux. Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent. Simply,

  Node.js = Runtime Environment + JavaScript Library. The Features are –

  - o All APIs of Node.js library is asynchronous, that is, non-blocking. It essentially means a Node.js based server never waits for an API to

30

return data. The server moves to the next API after calling it and a notification mechanism of Events of Node.js helps the server to get a response from the previous API call.

o Being built on Google Chrome's V8 JavaScript Engine, Node.js library is very fast in code execution.

o Node.js applications never buffer any data. These applications simply output the data in chunks.

- **ExpessJs** - Express.js tutorial provides basic and advanced concepts of Express.js. Our Express.js tutorial is designed for beginners and professionals both.Express.js is a web framework for Node.js. It is a fast, robust and asynchronous in nature. The features are –

  o It can be used to design single-page, multi-page and hybrid web applications.

  o It allows to setup middleware to respond to HTTP Requests.

  o It defines a routing table which is used to perform different actions based on HTTP method and URL.

  o It allows to dynamically render HTML Pages based on passing arguments to templates.

- **Mongoose** - Mongoose is an ODM (Object Data Modeling) library for MongoDB. While you don't need to use an Object Data Modeling (ODM) or Object Relational Mapping (ORM) tool to have a great experience with MongoDB, some developers prefer them. Many Node.js developers choose to work with Mongoose to help with data modeling, schema enforcement, model validation, and general data manipulation. And Mongoose makes these tasks effortless. The Features are –

  o MongoDB has a flexible data model.

  o MongoDB databases very easy to alter and update in the future. But a lot of developers are accustomed to having rigid schemas.

  o Mongoose forces a semi-rigid schema from the beginning. With Mongoose, developers must define a Schema and Model.
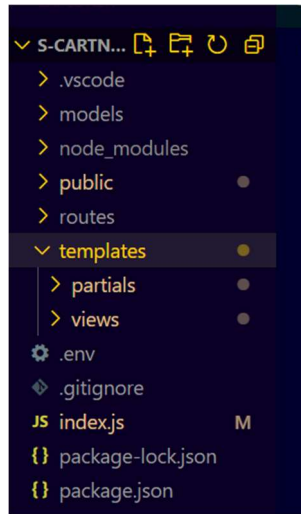
31

COMPONENTS OF S-CART

FIG 4: FOLDER STRUCTURE

FOLDER STRUCTURE

models – All the MongoDB Schema is written here. Schema is the structure in which format the data is stored in the Cloud Storage. Each Schema is discussed in the Later Section.

node_modules – It's just a directory created by npm and a way of tracking each package you install locally via package.json. If you had tried deleting the node_module folder and ran the application, you would get, Error: Cannot find module 'some-module/methods'. That basically means that your machine would complain that you are using some module, but the machine is unable to locate it.

public – It's just a directory in which HTML, CSS and JS Files are stored.

templates – The code for Frontend is written here. It consists of EJS files which is a Template Engine. EJS stands for Embedded JavaScript Templating. It consists of two sub directories:-

    partials – HTML template doesn't provide the facility of Code reuse; this problem can be resolved by using EJS. In the "partials" folder write code which is repeated in every page or there is need of including some lines of code in every single page, into a .ejs file. We can use that .ejs file by the keyword "include" in any of the page where we need. For example, Navigation Bar is the code we need in

every page of our website that's the reason we have put the navigation bar code in the navbar.ejs file and we can use just by writing
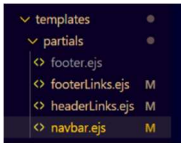<%- include(../partials/navbar.ejs) %>. Refer to the figures 5 and 6 attach for better understanding.

FIG 5   FIG-6

views – This is the folder where the frontend part of the website is written. All the frontend which a user is viewing comes from the .ejs files written in the views folder. Refer to the below figure 7 for better understanding.
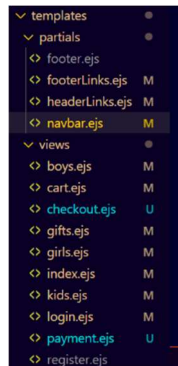

FIG 7

Why EJS Template Engine?

EJS is a simple templating language which is used to generate HTML markup with plain JavaScript. It is highly scalable because we can use forEach loops, conditional statements, code reusability and many more features.
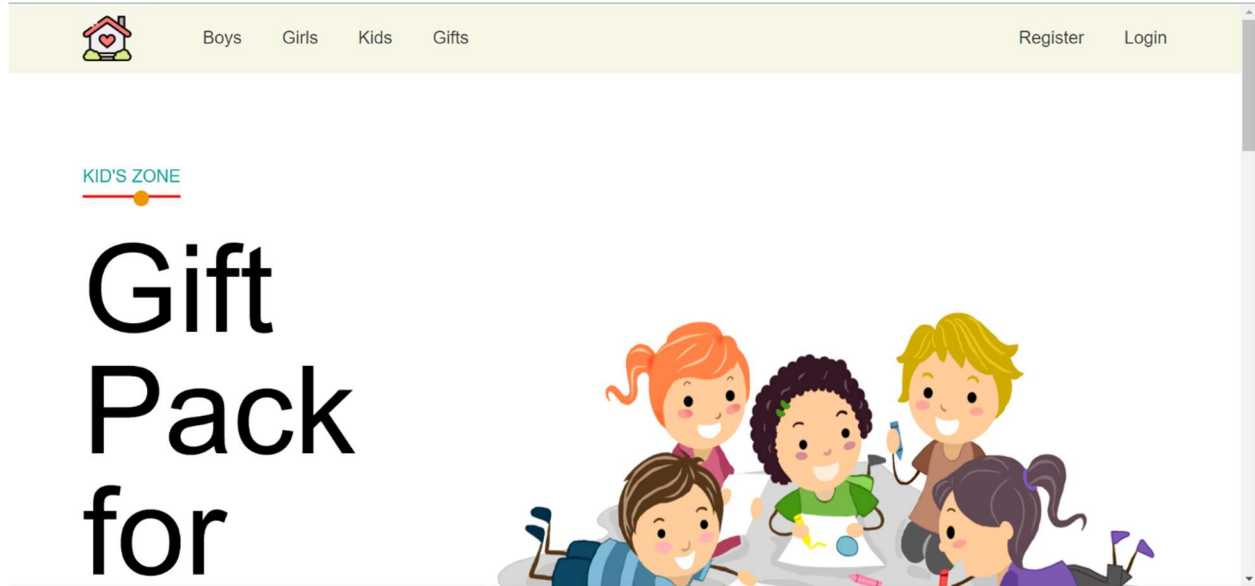
HOME PAGE

Preview:

FIG 8: HOME PAGE

This is S-Cart's Home Page it is made with EJS (Template Engine), Node Js, Cascading Style Sheet and JavaScript.

Home Page will get rendered as soon as any Customer comes into our website.

According to the picture there is a Navigation Bar at the Top, a body section and a footer.
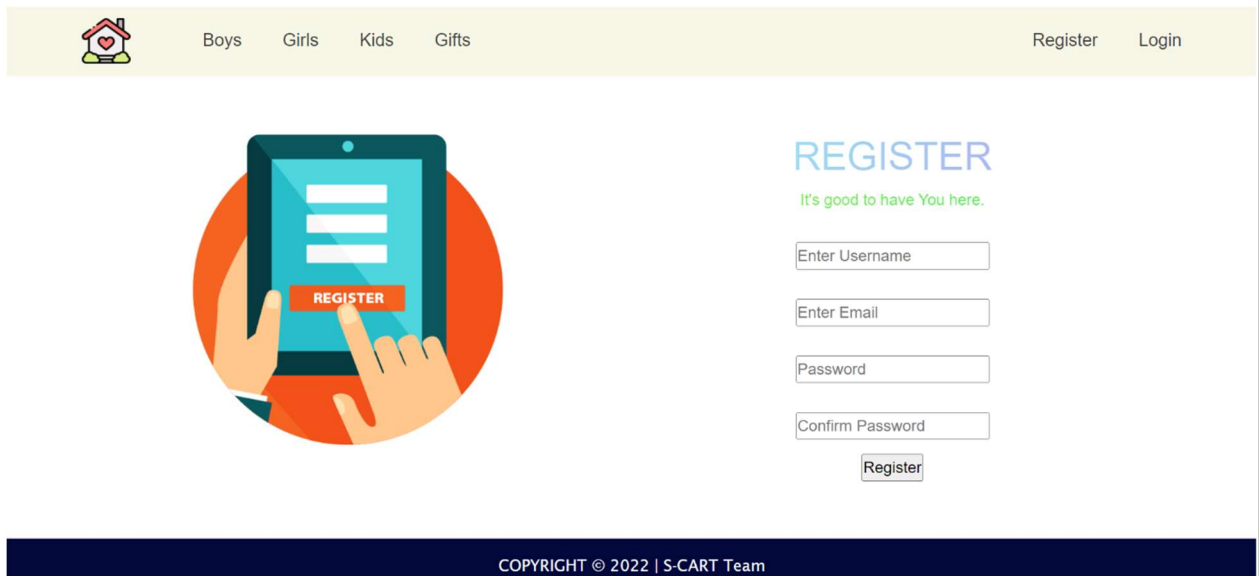
Navigation Bar – commonly known as Nav Bar, there are 4 sections 'Boys', 'Girls', 'Kids', 'Gifts'.

- Boy's Section consists of products for Boy's like Bags, Mugs, Pencil Box, Gifts Set etc. Any customer can 'Add to Cart' and continue shopping and the Cart value increases.
- Girl's Section consists of products for Girl's same as Boy's Section.
- Kids' Section consists of products for kids like Toys, Bags, Soft Toys etc.
- Gift's Section consists of products for everyone such as Combo offers, huge gift hampers with combination of many things etc.

    There are two more Pages 'Register', 'Login' (Explained in Later Sections).

REGISTRATION PAGE

Preview:

FIG 9: REGISTRATION PAGE

- Registration Page consists of 4 inputs that are Username, E-mail, Password and Confirm Password.

- It will show a red alert message if User is already registered and when Password doesn't match with Confirm Password input.

- It will show a green alert message if new User is registered successfully.

- After then User can navigate to Login Page and can Login by using following credentials -

Username,
Password.

Registration Schema for Database is as follows –

const mongoose = require('mongoose');

const UserSchema = new mongoose.Schema(

35

```
{
    username: { type: String, required: true, unique: true },
    email: { type: String, required: true, unique: true },
    password: { type: String, required: true },
    isAdmin: {
        type: Boolean,
        default: false,
    },
}, { timestamps: true });

module.exports = mongoose.model("User", UserSchema);
```

Below image is the example of the Schema for User Registration.

FIG 10: MONGODB CLOUD

PASSWORD ENCRYPTION AND STORING DATA IN DATABASE

Following the above image of the Data from the User who got registered, one thing is to be noticed that the Password which user entered is not the real password, it is stored in the form of Hashed Password, so as to prevent leakage of personal information from the website.

To achieve this CryptoJs was used.

CryptoJs - JavaScript implementations of standard and secure cryptographic algorithms

CryptoJS is a growing collection of standard and secure cryptographic algorithms implemented in JavaScript using best practices and patterns. They are fast, and they have a consistent and simple interface.

```
const newUser = new User({
    username: req.body.username,
    email: req.body.email,
    //encrypt password which user entered
    password: CryptoJs.AES.encrypt(
      req.body.password,
      process.env.PASS_SECRET).toString(),
});
```

We need Secret Pass Key(stored in .env named PASS_SECRET) and then finally password got encrypted and got saved in database.

After all these processes finally the registration work is over, the data is ready to get stored in the Cloud Database.

```
try {
    const savedUser = await newUser.save();
     res.render("register", { message: "User Added Successfully!!", status:
    "loggedOut", quantity: null });

  }
  catch (err) {
      res.render("register", { message: "User is already Registered!!", status:
    "loggedOut", quantity: null });
  }
```

newUser.save() function is used to transfer the Data from frontend to Database.
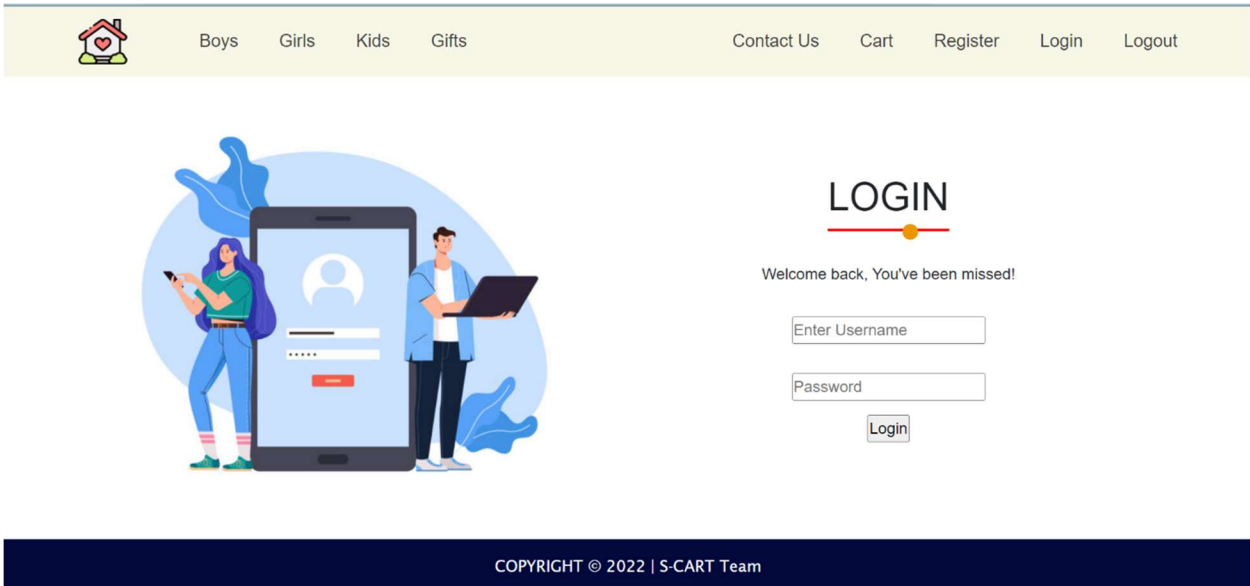
LOGIN PAGE

Preview:

FIG 11: LOGIN PAGE

- Login Page consists of two input Sections that are Username and Password.

- It will show a red alert if the User has entered Wrong credentials.

- On successful login, the User is redirected to home page for Shopping.

```
try {
      const user = await User.findOne({ username: req.body.username });
      if (!user) {
        res.render("login", { message: "You have entered Wrong Credentials", status:
      "loggedOut", quantity: null })
        return;
      }
```
User.findOne() function is used to find the record from the Database.

PASSWORD DECRYPTION AND LOGIN

The encrypted password from database must be decrypted to check whether the user has entered correct credentials or not. Then print the message accordingly.

```
const        hashedPassword       =        CryptoJs.AES.decrypt(user.password,
process.env.PASS_SECRET);
    const OriginalPassword = hashedPassword.toString(CryptoJs.enc.Utf8);

    //check the password matches or not
    if (OriginalPassword !== req.body.password) {
        res.render("login", { message: "You have entered Wrong Credentials",
status: "loggedOut", quantity: null })
        return;
    }
```

After the user entered all the credentials correct, he will be redirected to the home page for Shopping.

BUTTONS ARE DISABLED UNTIL LOGIN

When a new User enters our website, the User will only be able to view the product's image, name, and price but the user can't shop. The new user must register then login to get the buttons "Add to cart", "Buy now" etc.
Example: Fig 12 – No User is logged in that's why no buttons are available.
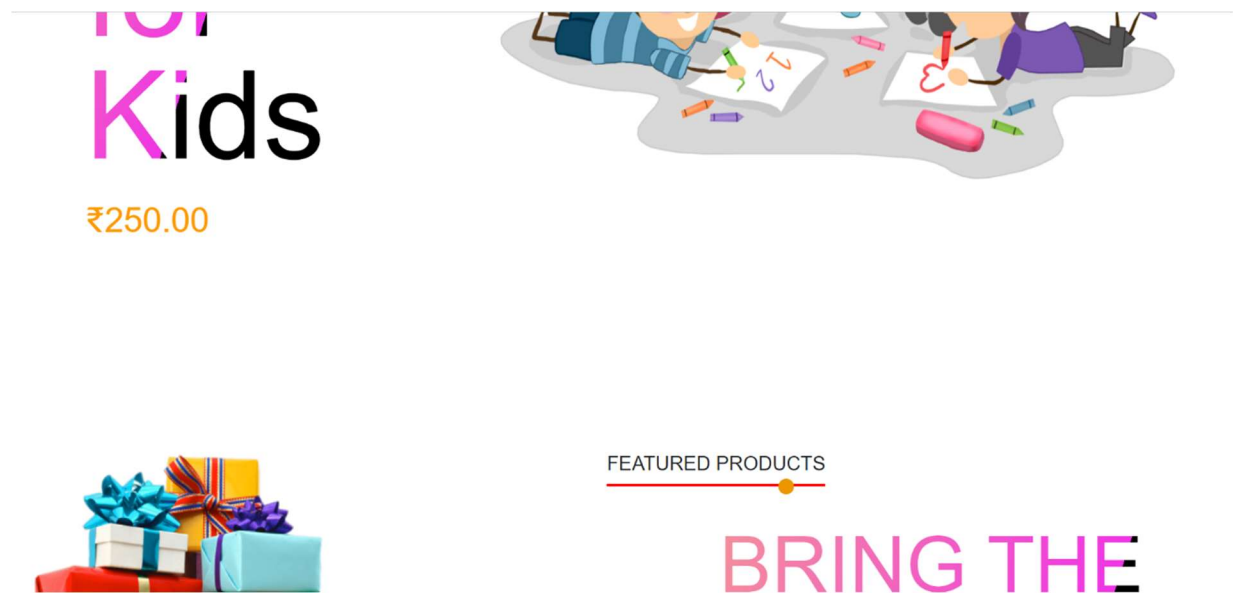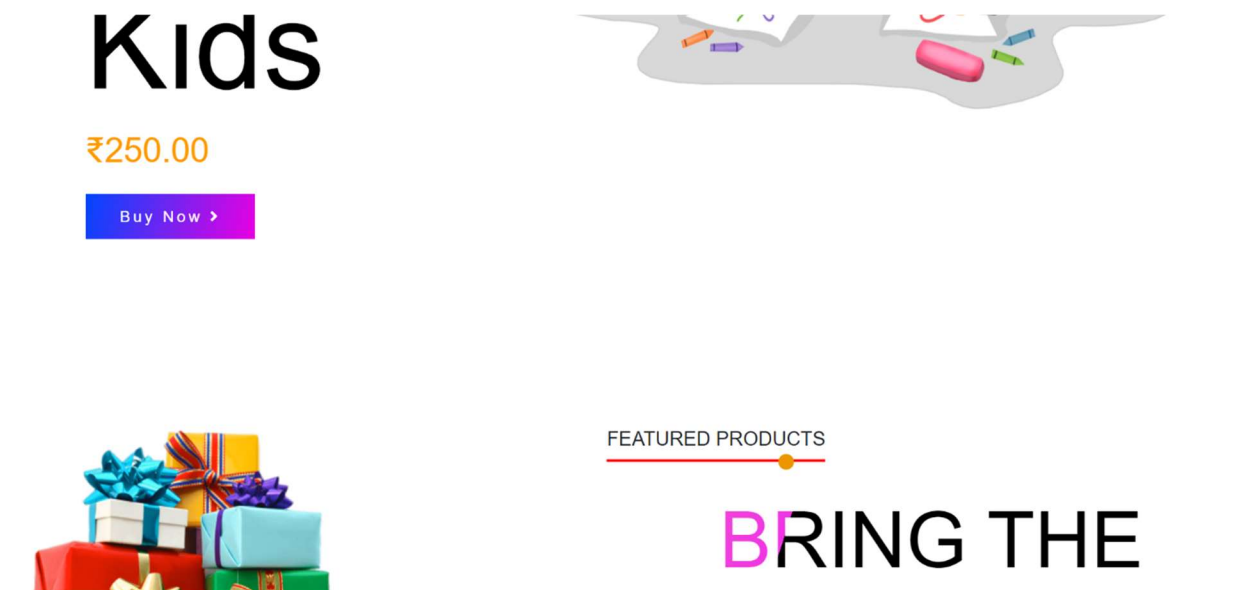 Fig 13 – A User is connected that's why "Buy Now" is activated.

Fig 12:

Fig 13:

DIFFERENT SECTIONS OF S-CART
HOME SECTION

Already home page has been discussed earlier, now it's time to discuss the way to add products in the home section. We will dynamically add the products to the frontend using Postman.

FIG 14: HOME PAGE

Only one product is added in the home page, now let's add another product by using Postman.
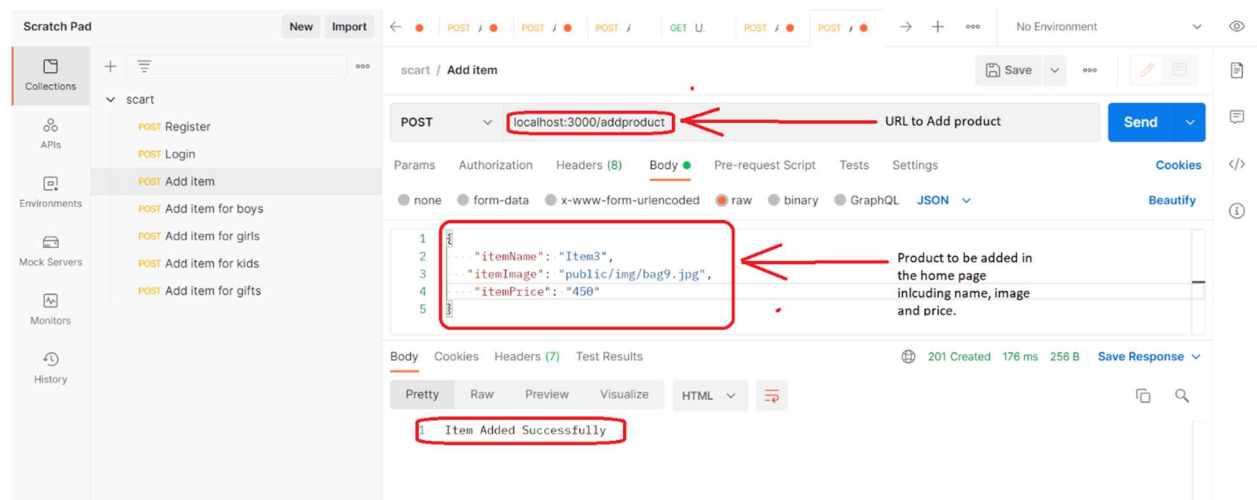

FIG 15: POSTMAN SENDING REQUEST

41

On adding product by Postman there is change in the home page i.e., one new product is added.

FIG 16: NEW ITEM ADDED

API TO ADD PRODUCTS

To add product dynamically, an API (Application Program Interface) is coded in the Backend so as to prevent static behavior of the website.

```
app.post("/addproduct", async (req, res) => {
  try {
    const product = new Product({
        itemName: req.body.itemName,
        itemImage: req.body.itemImage,
        itemPrice: req.body.itemPrice,
        category: "sample"
    });

    await product.save();
    res.status(201).send("Item Added Successfully");
  }
  catch (err) {
    res.status(500).send("Something went Wrong");
  }
});
```
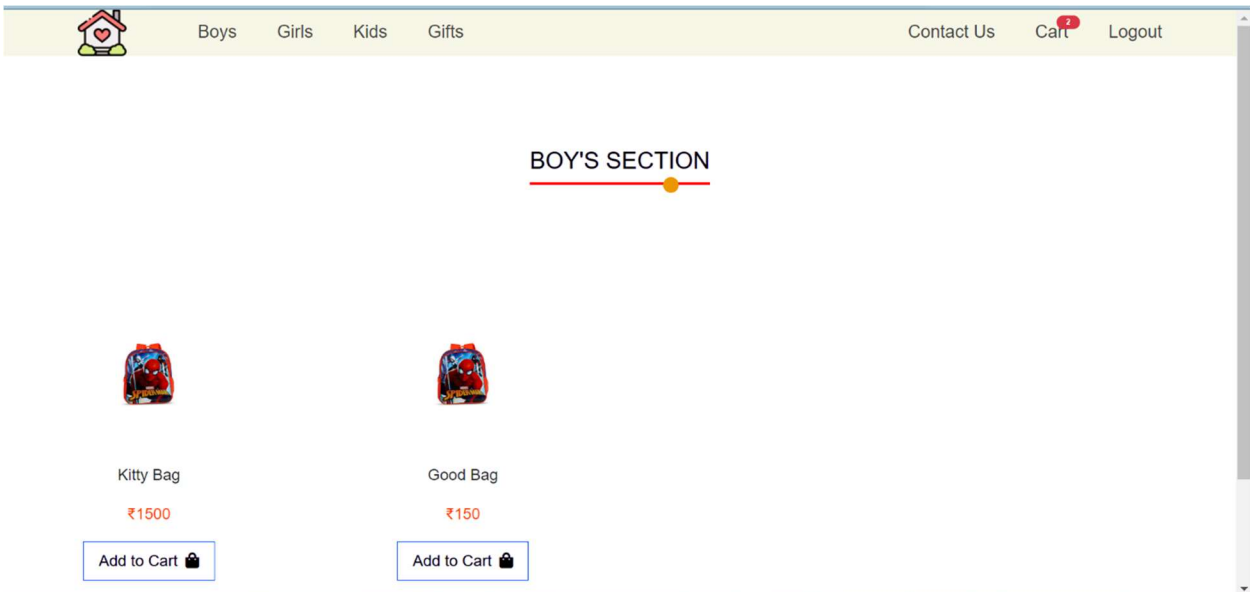
42

BOYS' SECTION

Preview:

FIG 17: BOYS' PAGE

There is separate section for Boy's products like Marvel Labelled Bags which are Spider Man Bag, superman bags, name labels, Mugs etc.

Same as home section here also we are sending request from Postman to add product in boy's section. We have different URL for that which is a post request to the page.
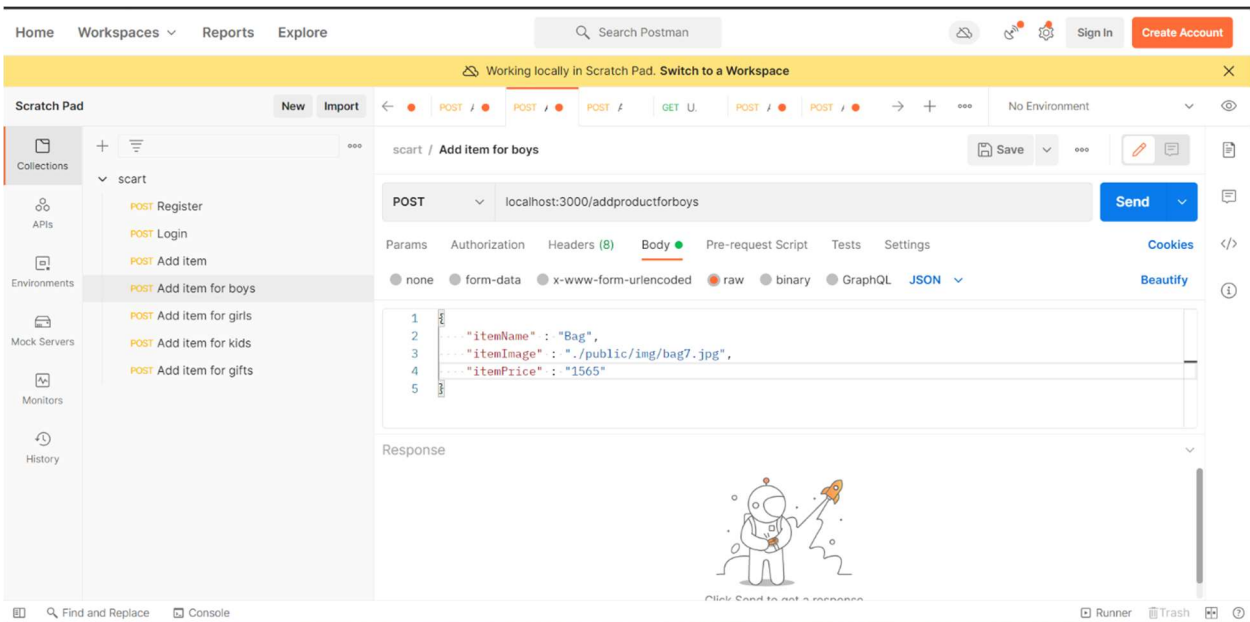
FIG 18: POSTMAN SENDING REQUEST

API TO ADD PRODUCTS TO BOYS' SECTION

```
app.post("/addproductforboys", async (req, res) => {
  try {
    const boysproduct = new Product({
      itemName: req.body.itemName,
      itemImage: req.body.itemImage,
      itemPrice: req.body.itemPrice,
      category: "boys"
    });

    await boysproduct.save();
    res.status(201).send("Boys Item Added Successfully");
  }
  catch (err) {
    res.status(500).send("Something went Wrong");
  }
});
```
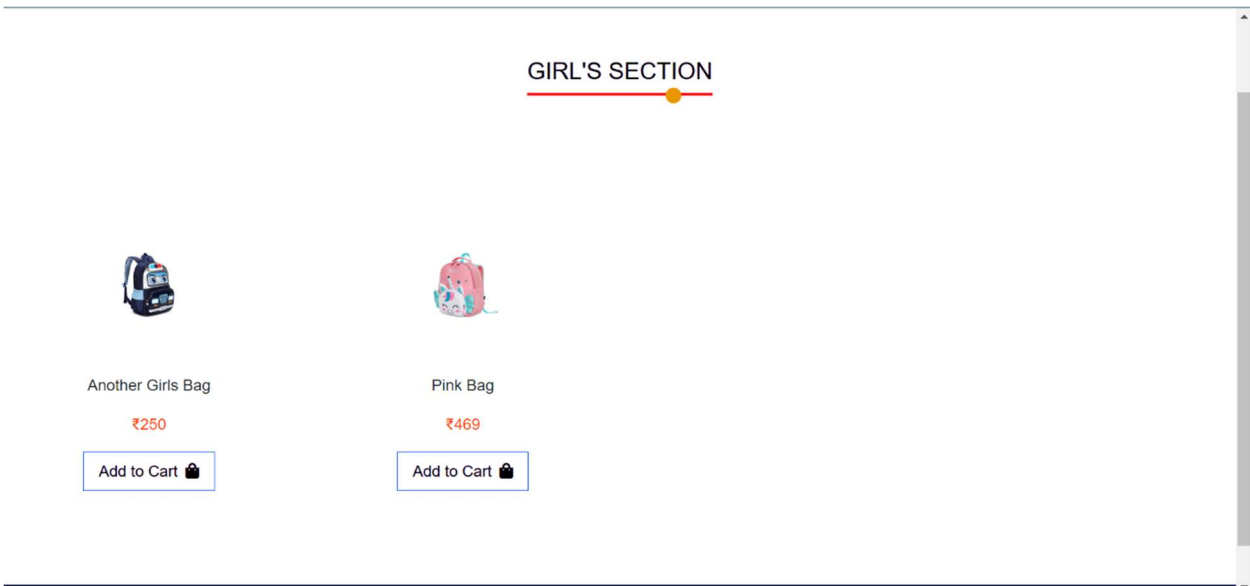
44

GIRLS' SECTION

Preview:

FIG 19: GIRLS' PAGE

There is separate section for Girls' products like Barbie labelled bags and different girls' character out there.

Same as home and boys' section here also, we are sending request from Postman to add product in girls' section. We have different URL for that which is a post request to the page.
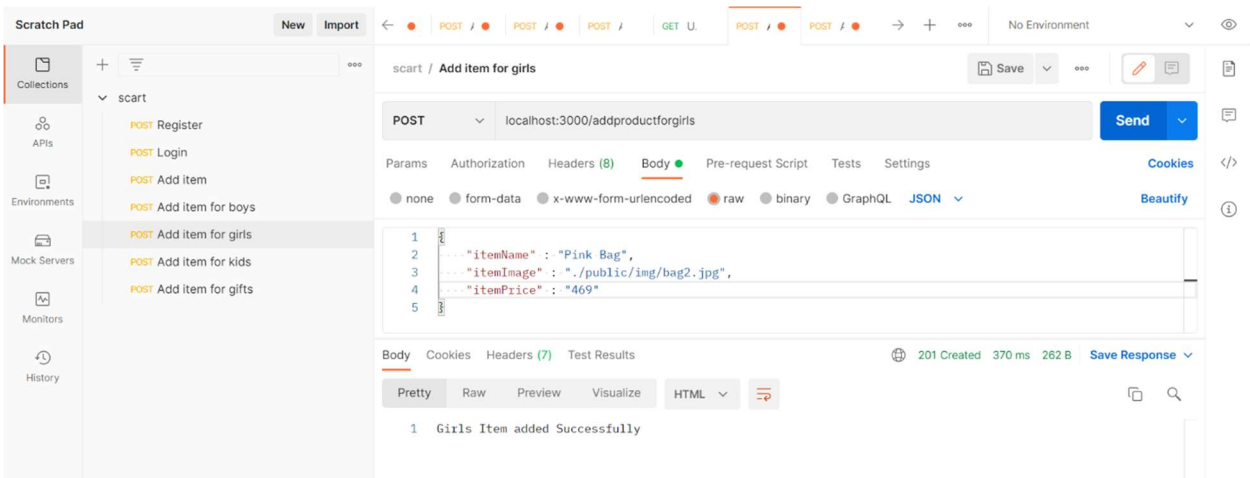

FIG 20: POSTMAN SENDING REQUEST

45

API TO ADD PRODUCTS TO GIRLS' SECTION

```
app.post("/addproductforgirls", async (req, res) => {
  try {
    const girlsproduct = new Product({
      itemName: req.body.itemName,
      itemImage: req.body.itemImage,
      itemPrice: req.body.itemPrice,
      category: "girls"
    });
    await girlsproduct.save();
    res.status(201).send("Girls Item added Successfully");
  }
  catch (err) {
    res.status(500).send("Something went wrong!");
  }
});
```
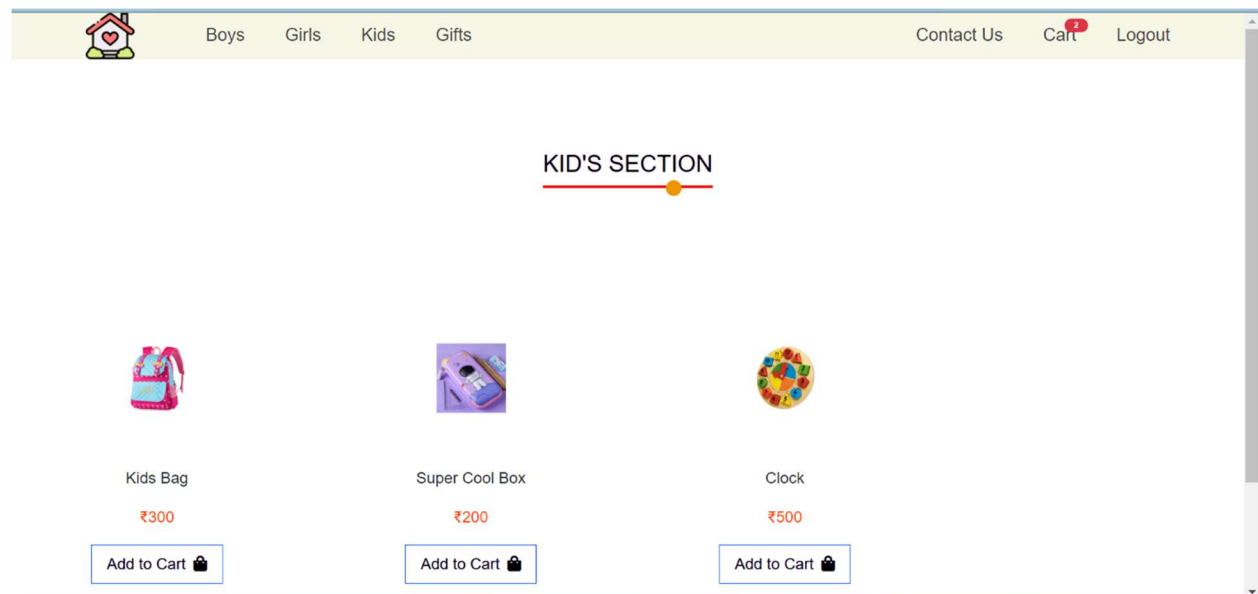
KIDS' SECTION

Preview:

FIG 21: KIDS' PAGE

There is separate section for Kids' products like Colorful toys to make them interest over the studies, bags, fiber mugs, leaning toys etc.

Same as home, boys', girls' section here also, we are sending request from Postman to add product in kids' section. We have different URL for that which is a post request to the page.
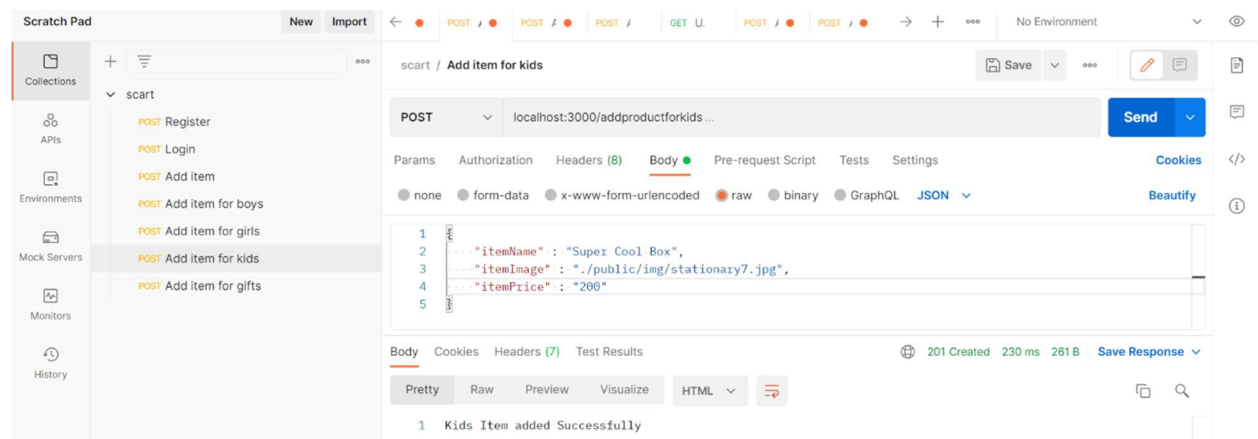

FIG 22: POSTMAN SENDING REQUEST

47

API TO ADD PRODUCTS TO KIDS' SECTION

```
app.post("/addproductforkids", async (req, res) => {
    try {
        const kidsproducts = new Product({
            itemName: req.body.itemName,
            itemImage: req.body.itemImage,
            itemPrice: req.body.itemPrice,
            category: "kids"
        });
        await kidsproducts.save();
        res.status(201).send("Kids Item added Successfully");
    }
    catch (err) {
        res.status(500).send("Something went wrong!");
    }
});
```

GIFTS' SECTION

Preview:

GIFT'S SECTION

Abascus
₹1500
Add to Cart 🛍️

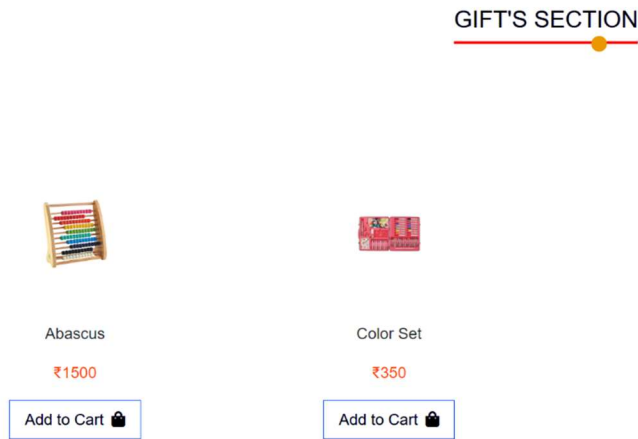Color Set
₹350
Add to Cart 🛍️

FIG 23: KIDS' PAGE

There is separate section for Gifts' products like Abacus, colorful pens, Color set, and many more gift item which any customer can gift someone.

Same as home, boys', girls' and kids' section here also, we are sending request from Postman to add product in gifts' section. We have different URL for that which is a post request to the page.
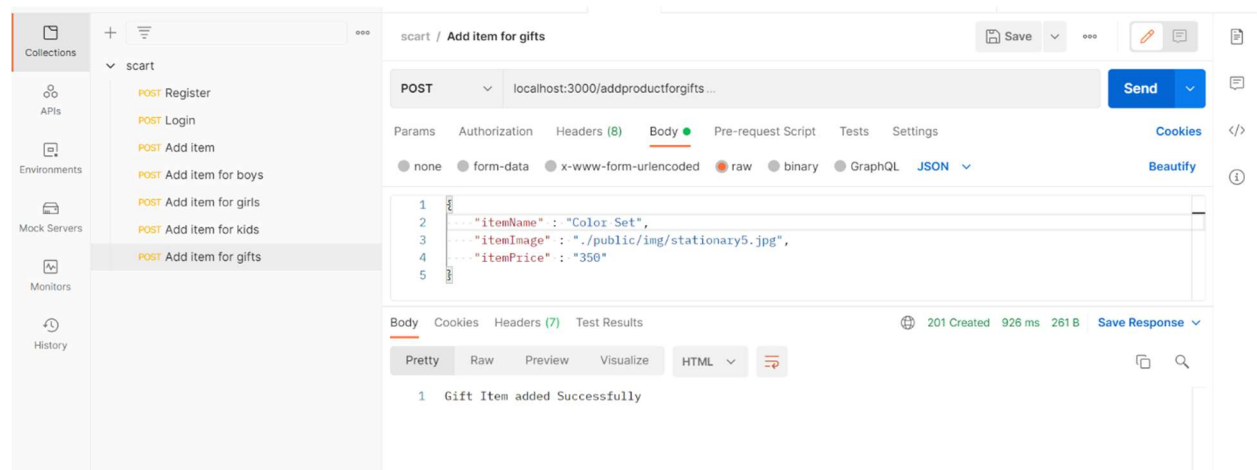

FIG 24: POSTMAN SENDING REQUEST

API TO ADD PRODUCTS TO KIDS' SECTION

```
app.post("/addproductforgifts", async (req, res) => {
  try {
    const giftsproducts = new Product({
        itemName: req.body.itemName,
        itemImage: req.body.itemImage,
        itemPrice: req.body.itemPrice,
        category: "gifts"
    });
    await giftsproducts.save();
    res.status(201).send("Gift Item added Successfully");
  }
  catch (err) {
    res.status(500).send("Something went wrong!");
  }
});
```

We came across all the sections of S-Cart. Now let's study the "Add to Cart" button functionality.

"Add to Cart" BUTTON

"Add to Cart" button is used to Put the items user liked in a cart. For example, when we went to shopping mall for shopping usually people shop many things which can't be accommodated in two hands, that's the reason shopping mall uses cart in which people could Put their items and can easily take away items from one place to another without any hassle.

Here "Add to Cart" button creates an Array of Objects for the Particular user who is logged in. It was already discussed that "Add to Cart" button is only visible to the user when he/she logs into the website, until then he/she can only view the Name, image, and price of the Item.

User can view the product(s) for which he clicked "Add to Cart" button in the Cart Section in the Navigation Bar. Every time when the user clicks a new product, the refreshes and the Cart quantity increases by 1.
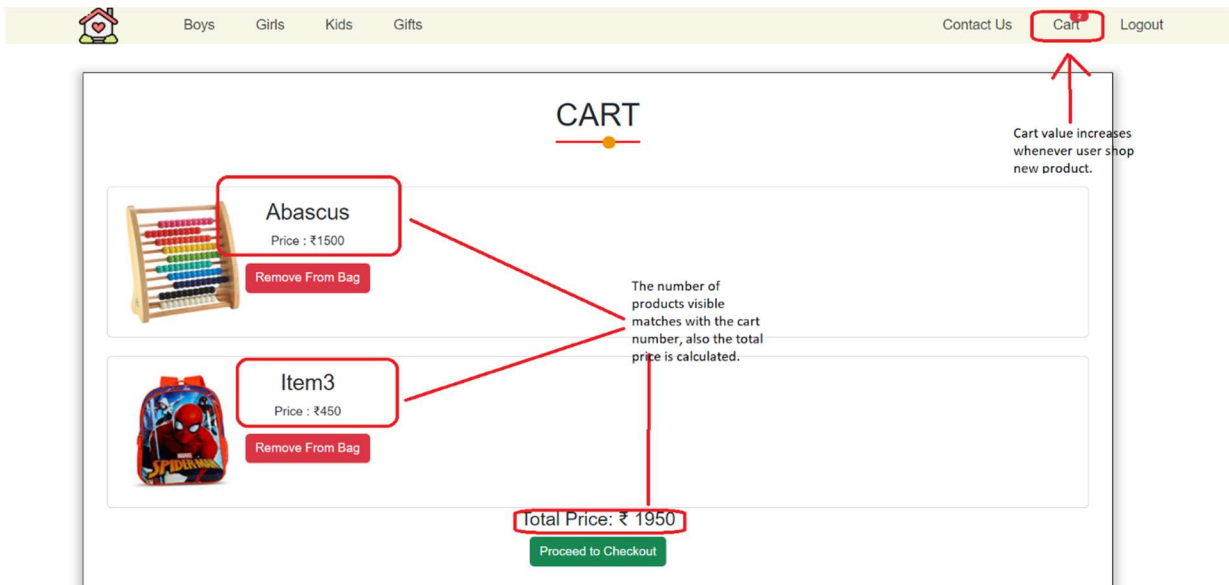
FIG 25: REFER TO IMAGE

The Cart is the Array of Objects which consists of Name of the User, productId, quantity selected, and which Object selected.
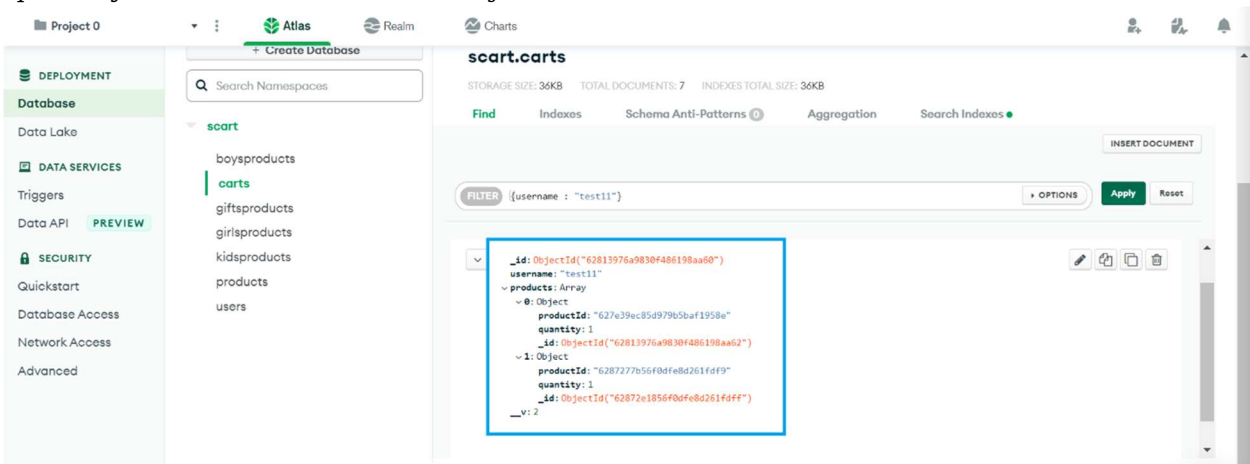

FIG 26: MONGODB CLOUD STORAGE

HOW "Add to Cart" WORKS?

```
app.post("/addtocart/:itemid", async (req, res) => {
    const itemId = req.params.itemid;
    try {
        const query = await User.find({ username: req.cookies.username });
        const userCart = await Cart.findOne({ username: query[0].username });
        if (userCart == null) {
```

```
        const cart = new Cart({
            username: query[0].username
        })
        const userCart1 = await cart.save();
        const product = new Products({
            productId: itemId
        })
        userCart1.products.push(product);
        await userCart1.save();
    } else {
        const product = new Products({
            productId: itemId
        });
        userCart.products.push(product);
        await userCart.save();
    }
    res.redirect("/");
    }
    catch (err) {
        console.log(err);
    }
});
```

To print the Cart to the User whenever he/she clicks the Cart in the Frontend the following code is needed -

```
app.get("/cart", async (req, res) => {
    if (!req.cookies.jwt) {
        return res.redirect("/")
    }
    const userCart = await Cart.find({ username: req.cookies.username });
    if (userCart.length == 0) {
        return res.render("cart", { status: "loggedIn", quantity: null, products: null });
    }
    const cartQuantity = userCart[0].products.length;

    let cart = [];
```

52

```javascript
const getProductDetails = async (productId) => {
  const productDetail = await Product.find({ _id: productId });
  let obj = {
    name: productDetail[0].itemName,
    image: productDetail[0].itemImage,
    price: productDetail[0].itemPrice,
  };
  return obj;
}
const newFunc = async () => {
  let sum = 0;
  for (let i = 0; i < userCart[0].products.length; i++) {
    const productId = userCart[0].products[i].productId;
    const details = await getProductDetails(productId);
    sum += parseInt(details.price);
    cart = [
      ...cart,
      details
    ];
  }
  return res.render("cart", { status: "loggedIn", quantity: cartQuantity, products:
cart, totalPrice: sum });
  }
  newFunc();
});
```

Now in the frontend EJS Template Engine uses a forEach loop and display all the items he/she selected.

```
<% products.forEach(product=> { %> //Syntax used in EJS Template Engine
          <div class="card mt-4">
             <div class="card-body">
                <div class="image">
                   <img src="<%= product.image %>" />
                </div>
                <div class="info">
                   <h3>
```

```
                        <%= product.name %>
                    </h3>
                    <p>Price : &#8377;<%= product.price %>
                    </p>
                    <form>
                        <button type="submit" class="btn btn-danger">Remove
From Bag</button>
                    </form>
                </div>
            </div>
        </div>
        <% })%>
            <div>
                <h4>
                    Total Price: &#8377; <%= totalPrice %>
                </h4>
            </div>
            <button          type="submit"          class="btn          btn-success"
onclick="checkoutPage()"> Proceed to
                Checkout</button>
    </div>
    <% } %>
```

<u>SCHEMA FOR CART AND PRODUCT PAGE</u>

Already discussed earlier the Structure in which data is getting stored in the Cloud
Storage.
models directory stores the schema of Cart and product as follows –
<u>Cart.js</u>

```
const mongoose = require('mongoose');
const ProductsSchema = new mongoose.Schema({
    productId: { type: String,},
    quantity: {
        type: Number,
```

```
      default:1,
    }
});
const CartSchema = new mongoose.Schema({
    username: { type: String, required: true },
    products: [ProductsSchema]
});
const cart = mongoose.model("Cart", CartSchema);
const products = mongoose.model("Products", ProductsSchema);
module.exports.Cart = cart;
module.exports.Products = products;
```

Product.js
```
const mongoose = require('mongoose');
const ProductSchema = new mongoose.Schema(
  {
      itemName: {type: String, required: true},
      itemImage: { type: String, required: true},
      itemPrice: { type: String, required: true},
      category: { type: String, required: true}
  }, { timestamps: true });

module.exports = mongoose.model("Product", ProductSchema);
```

CHECKOUT SECTION

Preview:

FIG 27: CHECKOUT PAGE

Checkout Page consists of a form in which user has to fill the details where the products are delivered. There are some placeholders which guides user to fill out the correct details. It consists of –

- Name
- Contact number
- Full Address
- Landmark(if any)
- Pin Code

After filling all the details, it will get stored in the Database and then he/she will be redirected to the Payment Page for different Payment options.
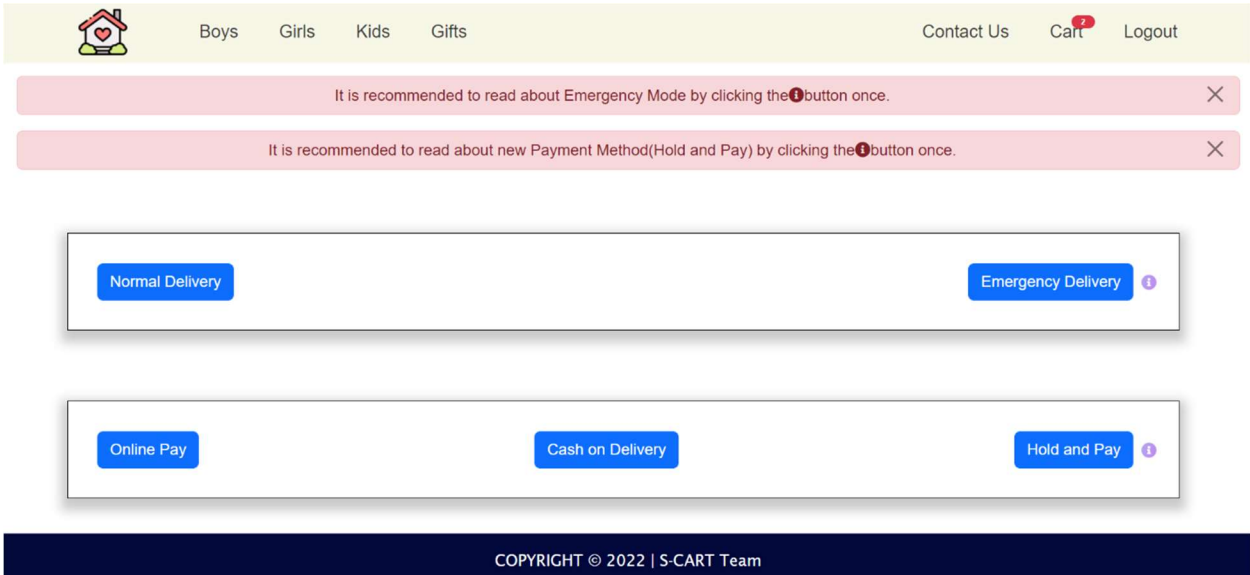
PAYMENT SECTION

Preview:

FIG 28: PAYMENT PAGE

Now let's discuss the Payment section.

There are two modes of Delivery –

1) Normal Delivery, and
2) Emergency Delivery.

Normal Delivery – A Normal Delivery button is there on the sub section, when it gets clicked it will open a modal which will indicate the type of delivery i.e., Products will get delivered in 4 to 5 days (Maximum 7 days due to Bad weather). Click "Understood" when the user understood about the Normal delivery.
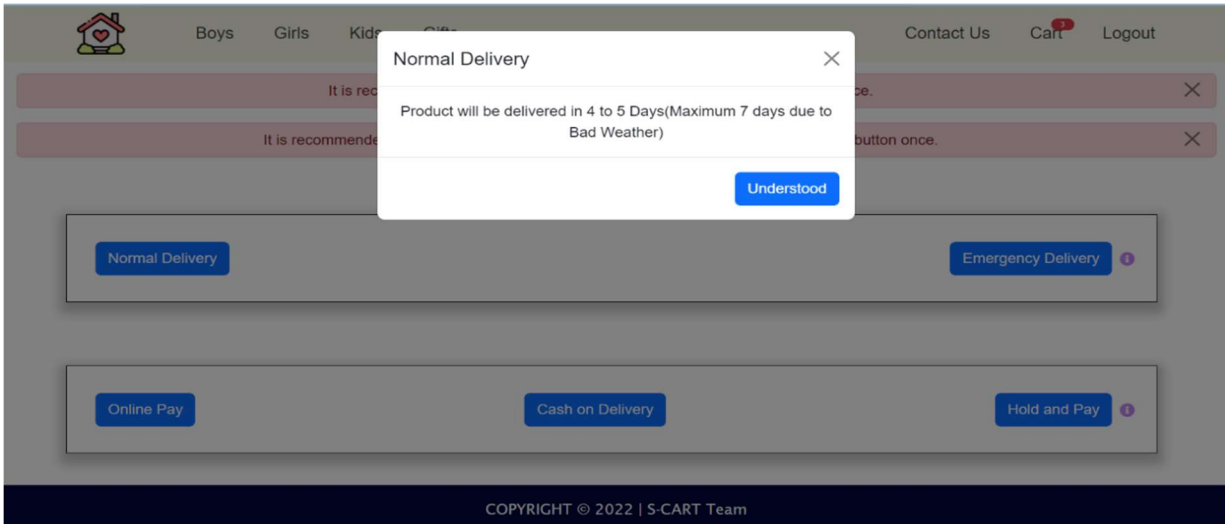
FIG 29: MODAL TO UNDERSTAND NORMAL DELIVERY

Emergency Delivery – A Emergency Delivery button is also there in the sub section, when it gets clicked it will open a modal, which will indicate the type of delivery i.e., Products will get delivered based on user's date. For example, any customer wants to buy a gift for his/her relative, but that particular relative has birthday tomorrow, if the customer gifts the relative after 4 days it would not be that good, but S-Cart solves the problem by introducing "Emergency Delivery".

By clicking Emergency Delivery, the customer can choose whether he/she wants the product to be delivered earlier but for this he/she needs to pay additional charges based on the day he/she wants. S-Cart comes up with two great options –

- "Tomorrow" – Additional Charges : Rs. 100
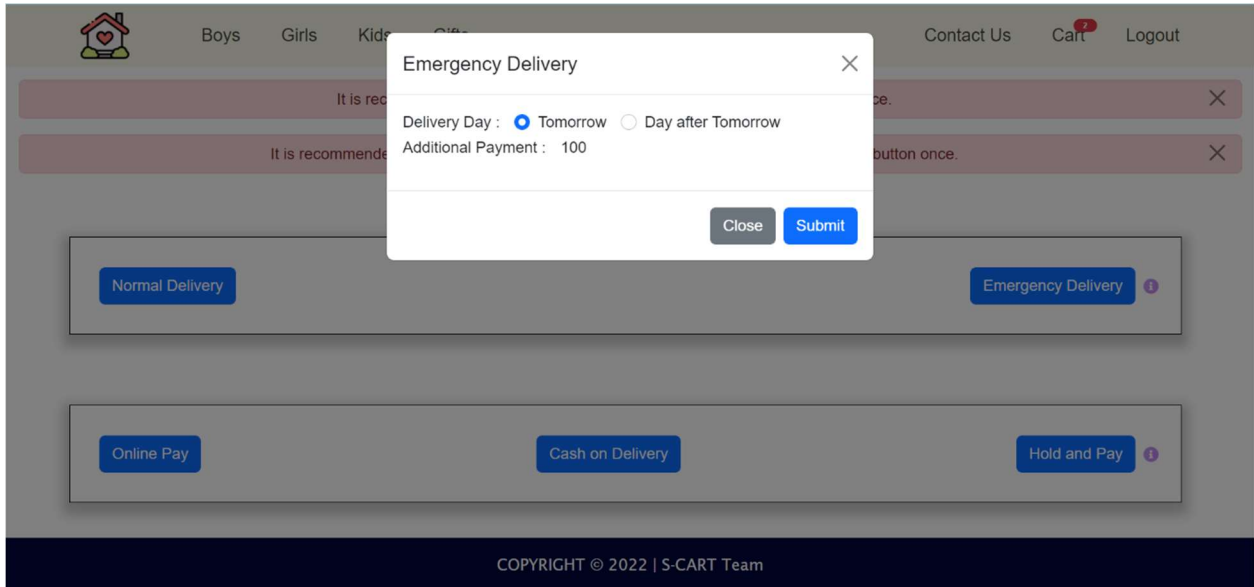- "Day after Tomorrow" – Additional Charges : Rs. 50

FIG 30: MODAL TO UNDERSTAND EMERGENCY DELIVERY

What is that "i" button beside Emergency Delivery?

Basically, whenever "i" button is hovered, it will show the information regarding that particular button.

THREE MODES OF PAYMENT

1) **Online Payment** :- Due to COVID-19 Pandemic, Online payment took the market for cashless delivery. S-Cart comes up with QR Scanner, an individual can easily scan the code and make the payment. Once the admin of S-Cart receives the Payment, they inform the delivery man to continue for the products opted by the user. Debit Card and Credit Card Payment System is also available here. All the data of the user will be completely safe.

2) <u>Cash on Delivery</u> :- It is the most used delivery mode of all time; many customers use to check the product then pays for the product. The customer pays cash in return if required change money is given. Valid Phone number and Address makes this payment happen. Products get return to the Hub if no one receives the product.

3) <u>Hold and Pay</u> :- This is new Mode of Payment; Online Payment and Cash on Delivery integrates in the case of Hold and Pay. Customer can Pay a part of money online and remaining part Cash when the delivery man goes for the delivery. Suppose a customer buys a product of Rs. 100, and the customer has Rs. 50 in the Online Banking System and Rs. 50 Cash available, he/she places the order and makes a payment of Rs. 50 and message is shown that "Remaining Cash to be Collected :- Rs. 50". This way both Online and Cash mode gets integrated.

HOW WAS THE DATABASE CONNECTED?

In the Server page the MongoDB Cloud was connected where we are storing the Data of the user, products, users' cart, payment, and orders.

```
mongoose.
  connect(process.env.MONGO_URL)
  .then(() => console.log("Database Connected!!!"))
  .catch((err) => {
    console.log(err);
  });
```

What is MONGO_URL?

MONGO_URL =
mongodb+srv://scart:barai123@cluster0.y2cq1.mongodb.net/scart?retryWrite
s=true&w=majority

It is dot env file which stores the Secret keys, password, authentication key and database related text. It can be called by process.env.NAME_OF_SECRET_KEY.

MONGODB FUNCTION

.save()	When user or the admin enters the data from the frontend like a form for registration, the backend uses .save() query to send the data inputted in the form to the MongoDB Cloud storage.
.find()	will display all the documents in a non-structured way. When backend calls .find() query it will show all the users active on the website, or which products are added in which section.
.findOne()	The .findOne() method finds and returns one document that matches the given selection criteria. If multiple documents satisfy the given query expression, then this method will return the first document according to the natural order which reflects the order of documents on the disk.

CONCLUSION

This project is created to satisfy the needs of a student and help them whenever there is a need for some stationary products. This website shall prove to be a simple and reliable website in satisfying all the requirements of the buyers. The main motive of this website is to provide students with all types of stationary products necessary for their studies or projects. This website provides a variety of products that will benefit the customers visiting this website. It makes the entire process online where users can search for the by-products of their choice and needs. It also has a facility where users can log in and see the status of their order as well as request items or give their feedback. It provides the facility of admin's login where admins can add or update various items, review users' activity and also give holiday discounts or holiday sales. In general, every business always strives to create the best possible things that customers will prefer and find valuable because consumers continue to like their quality of products, services, cost of products, and discounts to continuously be better, faster, and affordable. In this generation of new technology, businesses need to consider the new needs and choices of the customers because it is important for the growth, sale, and survival of their business. E-commerce is continuously advancing and evolving and is becoming more and more important and demanding to businesses and to the customers because of the advancement of technology. From the growth and development of the Internet and e-commerce, the possibilities have become endless for both businesses and customers thereby creating more opportunities for profit and advancements for businesses, while creating more product choices for customers.

However, just like anything else, e-commerce also has some disadvantages including customer uncertainties or some unfortunate scams, but nothing that cannot be resolved or avoided by good business practices.

FUTURE SCOPE

The scope of E-commerce is expanding day by day and will become more advanced in the near future due to the huge number of internet users from every corner of the world. People are investing more time in looking for products and deals/sales in their favorite eCommerce platform.

Mostly there are mobile users, in future S-Cart will be available in Mobile Version also. Android Development of the Website will be the Future but for the time being it will be a Web-app.

Many users are confused whenever they visit any website, if there is any assistant that will help them in directing or guiding about the different components of the website. It's basically a contact assistant where auto generated messages will be coded and answer will be set accordingly.

Advertisement plays an important role in promotion of the website and it's products. It will also be done to attract customers from different part of the country. Discounts and offers will also be endorsed to attract customers.

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