Lifezy E-Com Site

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Abstract -This abstract describes electronic commerce as a process of doing business through computer networks, allowing users to buy or sell products online. E-commerce has significantly reduced physical work and saved time for users. However, security remains a challenge, hindering the growth of e-commerce. The main advantage of e-commerce over traditional commerce is that users can browse online shops, compare prices, and order merchandise from the comfort of their own home. Lifezy is a Business-to-Business-to-Customer (B2B2C) e-commerce website that allows businesses to sell their products or services to consumers online. It is a dynamic website that uses PHP for server-side scripting and MySQL for the database. The website features various web pages, including login/signup, homepage, products, settings, profile, cart, checkout, payment (using Razorpay payment integration), order tracking, contact us, about us, Mailer, and Chatbot. These web pages are created using HTML5, CSS3, Bootstrap 5.1.1, and JavaScript. To ensure secure registration, the blowfish algorithm is used to hash user's password.

- *Key Words*:E-commerce, Online shopping, B2B2C, Website development, Blowfish algorithm, SMTP, Admin, Chatbot, Order tracking

1. INTRODUCTION

This Document provides information about the Lifezy E-commerce website and its important factors. Electronic commerce is an emerging model of new selling and merchandising tools in which buyers are able to participate in all phases of a purchase decision, while stepping through those processes electronically rather than in a physical store or by phone (with a physical catalogue). The processes in electronic commerce include enabling a customer to access product information, select items to purchase, purchase items securely, and have the purchase settled financially.

Lifezy is a business-to-business-to-consumer (B2B2C) type of E-commerce website where general customers and shop owners have access to different features under same login. It is a dynamic website where server-side scripting is done by using PHP and database is created in MySQL. This website contains Webpages like login/signup page, homepage, products page, settings page, profile page, cart

page, checkout page, payment page, order tracking page, contact us page, about us page, Chabot, etc. Which are created using html5, css3, bootstrap 5.1.1 and JavaScript.

In this project we are using Razorpay payment integration which provides end-to-end security and makes the payments secured. Simple mail transfer protocol (SMTP) to send the mails like successfully creation of account and order confirmation which enhance our website and makes it more useful. We are using blowfish algorithm for hashing the password entered during the registration process which is making the registration process secure.

We are providing the search bar at the header where user can search for a particular product by inserting or voice searching the name, brand or feature of the product which makes the process of selecting the appropriate product easy and step up the website.

We are providing the order tracking system where user can track his order by entering the auto generated unique tracking id displayed on the success page or order confirmation mail.

2. Literature Survey

Shahjee R. (2020) states that e-commerce has provided a platform for businesses to showcase their varied products and make it easier for customers to quickly find high-quality products. However, e-commerce faces challenges related to infrastructural capacities and lack of computer and internet knowledge among clients, especially rural buyers [1]

Deepthi, Pradyumna G.R (2016) compared the MD5 hashing algorithm and Blowfish symmetric encryption algorithm. The results show that MD5 is superior to Blowfish in terms of total and CPU usage, but in terms of security, Blowfish would be the strongest algorithm if implemented in hardware as it does not have any known cryptanalysis to date [2]

Aaftab Aalam1 (2020) highlights the benefits to companies that achieve Business-to-Customer (B2C) e-commerce. Effective B2C e-commerce implementations can help organizations realize substantial cost savings, increase revenue, provide faster delivery, reduce administration costs, and improve customer service. Thus, e-commerce is a major area for research due to its novelty and explosive growth. Extensive research in e-commerce implementation studies indicates that the definition of implementation has been argued and confusing for researchers. Development of e-

commerce is done by B2B and B2C and helps customers to fulfill their requirements.

Kumar N. (2018) suggests that there will be a phenomenal growth in e-commerce, which is expected to rise multiple times by the year 2021 compared to 2015. The most significant contributors to this growth will be web users and mobile phones, an increase in awareness among the general public, superior internet services, digitalization of storage capacities with government support, entry of business players and foreign investors, and advance payment options available to consumers. However, the government needs to find ways to deliver a fair legal system and minimize development issues. [2]

Mitra Abhijit. (2018) suggests that e-commerce has unleashed a revolution that is changing the way businesses buy and sell products and services. The role of geographic distances in forming business relationships is reduced. E-commerce is the future of shopping, and with the rapid expansion of the internet, e-commerce is set to play a very important role in the 21st century. The new opportunities that will be thrown open will be accessible to both large corporations and small companies. The role of the government is to provide a legal framework for e-commerce so that while domestic and international trade is allowed to expand their horizons, basic rights such as privacy, intellectual property, prevention of fraud, consumer protection, etc., are all taken care of.

E-commerce, also known as electronic commerce, internet or online shopping, is the activity of buying and selling goods and services via the internet and its network system. In other words, it involves business transactions of buying and selling goods and services or exchanging information between businesses and consumers without both the buyer and seller meeting physically but rather over the internet. (Mehra, 2015; Rahman, 2018). In the last three decades, the revolution of the internet from the 1960s to the present is fascinating.

3. Proposed Work

3.1 Proposed Concept

We are trying to build such an ecommerce website where there will be different features for general customers and shop owners under same login at one place. The criteria for shopkeeper's login are that the shopkeepers will need to authenticate themselves by providing business PAN number or GST number from Lifezy at the time of registration, after successful registration they will get the products at wholesale rate with other benefits other than general customers.
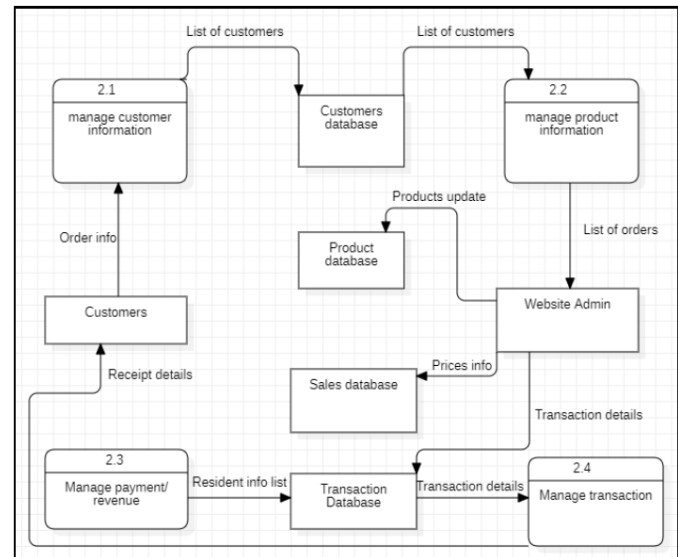
3.2 System Architecture / Design

Fig –1: Dataflow diagram

The figure 1 presented above illustrates the data flow diagram of each an actor is associated with at least oneusecase and can be associated with multiple use cases like in our system customer can be associated with multiple use cases like register online, login search product, place order, track order, etc.

Customer: The customer is the primary actor in the system and initiates the process by accessing and performing various actions such as searching for products, adding items to the shopping cart, and completing the checkout process.

Manage Customer Information: This component is responsible for managing the customer's personal information, such as their name, address, and payment details. It allows the customer to update their profile, view order history, and manage their preferences.

Website Admin: It is responsible for managing the overall e-commerce site. It includes tasks such as managing user accounts, updating the product catalog, monitoring order fulfillment, and generating reports.

Manage Product Information: It is responsible for managing the product catalog of the e-commerce site. It includes product details such as name, description, price, and availability. The product catalog is updated regularly to reflect changes in inventory, pricing, and other factors.

Manage Transaction: The process involves updating the inventory and sales records in the system and generating a receipt for the customer. The process is initiated when a customer places an order and makes a payment for the items they want to purchase

Manage Payment/Revenue: The process involves processing customer payment and updating the revenue records in the system. The process is initiated when a customer makes a payment for their order.
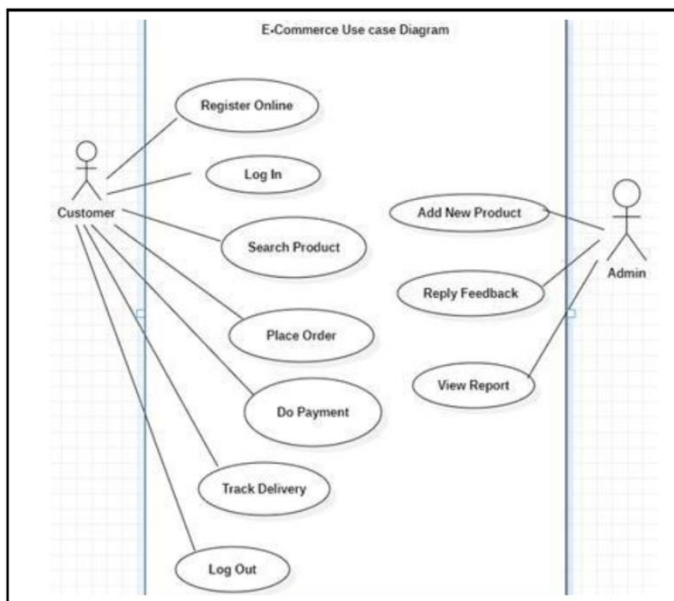

Fig -2: Use case Diagram

The above use case diagram represents the different actors and their interactions with the system under consideration. Here Customer and Admin act as actor and solid line between actor and use case shows the association between actor and use case.

Customer: -

i. Register Online: This use case represents the customer registering for an account on the e-com site. The customer actor initiates this use case by entering their personal information, such as name, email, and password, and creating a new account. The association between the

ii. the fact that the customer must create an account before they can perform any other actions on the site.

iii. Login: This use case represents the customer logging into their account on the e-com site. The customer actor initiates this use case by entering their login credentials, such as email and password. The association between the customer actor and the login use case represents the fact that the customer must be authenticated before they can perform any actions on the site that require access to their account.

iv. Search Product: This use case represents the customer searching for products on the e-com site. The customer actor initiates this use case by entering keywords or browsing categories to find the desired product(s). The association between the customer actor and the search product use case represents the fact that the customer is the one who is looking for and selecting products to purchase.

v. Place Order: This use case represents the customer placing an order for one or more products on the e-com site. The customer actor initiates this use case by selecting the desired product(s) and entering their shipping and billing information. The association between the customer actor and the place order use case represents the fact that the

customer is the one who is placing the order for the products.

vi. Do Payment: This use case represents the customer making a payment for their order on the e-com site. The customer actor initiates this use case by selecting a payment method and entering their payment information. The association between the customer actor and the do payment use case represents the fact that the customer is the one who is making the payment for the products.

vii. Track Delivery: This use case represents the customer tracking the delivery status of their order on the e-com site. The customer actor initiates this use case by checking the delivery status of their order through a tracking number or other means. The association between the customer actor and the track delivery use case represents the fact that the customer is the one who is monitoring the progress of their order delivery.

viii. Log Out: This use case represents the customer logging out of their account on the e-com site. The customer actor initiates this use case by clicking the "Log Out" button on the site. The association between the customer actor and the log out use case represents the fact that the customer must log out of their account to end their session on the site.

ix. Add New Product: This use case represents the admin adding a new product to the e-com site. The admin actor initiates this use case by entering the product details, such as product name, description, category, and price. The association between the admin actor and the add new product use case represents the fact that the admin is responsible for managing the products available on the site.

x. Reply Feedback: This use case represents the admin replying to feedback from customers on the e-com site. The admin actor initiates this use case by selecting the feedback to respond to and entering their response. The association between the admin actor and the reply feedback use case represents the fact that the admin is responsible for managing and responding to customer feedback on the site that help to admin understand user demand so that admin can upgrade details on site.

xi. View Report: This use case represents the admin viewing reports related to the e-com site. The admin actor initiates this use case by selecting the type of report they want to view, such as sales or traffic data, and viewing the relevant information. The association between the admin actor and the view report use case represents the fact that the admin is responsible for monitoring and analyzing the performance of the site.

Admin: -

i. Add New Product: This use case represents the admin adding a new product to the e-com site. The admin actor initiates this use case by entering the product details, such as product name, description, category, and price. The association between the admin actor and the add new product use case represents the fact that the admin is responsible for managing the products available on the site.

ii. Reply Feedback: This use case represents the admin replying to feedback from customers on the e-com site. The admin actor initiates this use case by selecting the feedback to respond to and entering their response. The association between the admin actor and the reply feedback use case represents the fact that the admin is responsible for managing and responding to customer feedback on the site

that help to admin understand user demand so that admin can upgrade details on site.

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3.3   Working of Proposed System

3.3.1   Entity relationship diagram
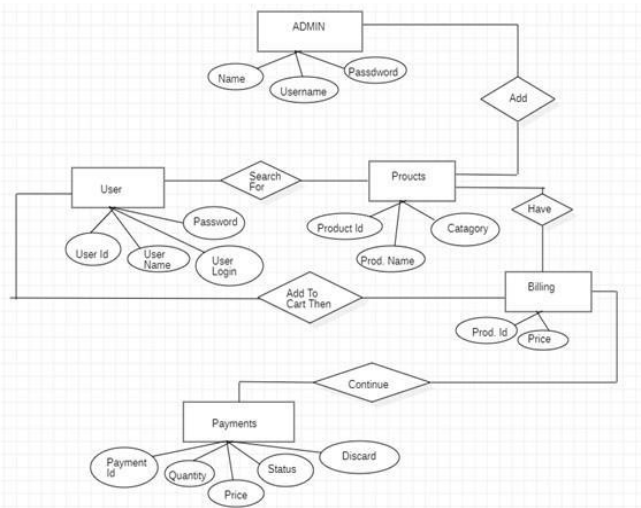
Figure 3.3: E-R Model Diagram of Lifezy

The above E-R diagram depicts the entity-relationship model for the database design of Lifezy having various entity and attributes explain below:

I.   Admin: - An admin is an individual or group responsible for managing the site. They have access to the backend of the system and can perform tasks such as adding or removing products, managing user accounts, and processing orders. An admin manages the products offered on the site, as well as the user accounts and orders placed by those users.

The admin entity has the following attributes:

i.   Name: This refers to the admin full name, and is typically stored as two separate fields for the first and last name.
ii.   Username: This refers to the admin unique identifier for accessing the system, which is typically chosen by the admin during the account creation process.
iii.   Password: This refers to the admin secret code for accessing the system, which is used in combination with the username to authenticate the admin identity.

II.   Products: A product is any item or service that is offered for sale on the e-com site. Each product has a unique identifier, a name, a description, and a price. A product is associated with one or more orders, as users add the product to their cart and then complete the checkout process to place an order.

The product id entity has the following attributes:

i.   Product ID: This is a unique identifier for the product with system. The product ID might be generated automatically by the system when the product is added, or it might be assigned manually by an admin.
ii.   Product name: This refers to the name of the product, which is typically a brief and descriptive title that helps users understand what the product is.
iii.   Category: This refers to the category that the product belongs to, which is used to organize and display products on the site. Categories might include things like electronics, grocery.

These fields would be stored in a database and it used by the system to manage and display products on the site. Additionally, the product entity might be associated with other entities within the system, such as orders and users, as users add products to their cart and place orders for them.

III.   User: A user is any individual who creates an account on the e-com site. Each user has a unique identifier, a username, and a password. Users can browse products, add items to their cart, and place orders. A user can have one or more orders associated with their account, and each order is associated with a billing and payment method.

The User entity have the following attributes:

i.   User ID: This is a unique identifier for the user within the e-com system. The user ID might be generated automatically by the system when the user creates an account, or it might be assigned manually by an admin.
ii.   User name: This refers to the name of the user, which is typically their full name or a username of their choosing.
iii.   User Login: This refers to the user's unique identifier for accessing the system, which is typically their email address or a username of their choosing.
iv.   Password: This refers to the user's secret code for accessing the system, which is used in combination with their login to authenticate their identity.

IV.   Billing: Billing information is used to process payment for orders placed. This includes the user's billing address, shipping address, and payment method. The billing entity is responsible for storing information related to the financial transactions associated with an order. When a user places an order for one or more products on the site, the billing entity is used to track the total price of the order. Billing and payment are associated with each order, as the user provides this information during the checkout process to complete the order.

The entity relationship of billing includes the following attributes:

i. Product ID: This is a unique identifier for the order within the system, and is used to associate the billing information with a specific order.

ii. Price: This refers to the total cost of the order. The total price be calculated automatically by the system based on the price of the products in the order.

V. Payment: Payment information is used to process payment for orders placed on the site. This includes the user's payment method, such as a credit card, net banking, debit card or cash on delivery and any relevant payment details. The payment entity is responsible for storing information related to the financial transactions associated with a user's purchase. When a user places an order for one or more products on the site, the payment entity is used to track the amount paid by the user and the status of the payment.

i. Payment ID: It is used to associate the payment information with a specific order.

ii. Quantity: This refers to the quantity of the product(s) purchased by the user. The quantity might be stored as a separate field or as part of the product entity.

iii. Price: This refers to the total cost of the product(s) purchased by the user. The cost of particular product or multiple products is get displayed to user before transaction of payment.

iv. Status: This refers to the status of the payment, such as "pending", "done", or "not done". The status might be updated automatically by the payment processing system. After completion of payment, it shows status.

v. Discard: This refers to whether the payment has been discarded or cancelled. This field might be used to track the status of refunds or cancellations.

4. System Implementation

4.1 Setting Environment

Database: A database is a structured collection of data that is organized in a way that enables efficient storage, retrieval, and management of the data. In the case of an e-com site, the database is a crucial component that stores all the information related to the site's products, customers, orders, and transactions.

Following are the tables included in Lifezy database:

id	name	email	password	contact	city	address
48	Abhishek	rdradio6943@gmail.com	055e943ea929cd940f881ca67b302f2c	7558731960	Amravati	Amravati
50	Roshan	roshandabhade123@gmail.com	055e943ea929cd940f881ca67b302f2c	9518538743	Brahmanwada Thadi	Brahmanwada Thadi
49	Rahul	rahul123virghat@gmail.com	055e943ea929cd940f881ca67b302f2c	8855937719	Amravati	Amravati

elected: ✏ Edit ⊞ Copy ⊜ Delete ⊟ Export

Table 4.1

i. ID - It is a unique number or code assigned to every user in the database. The ID field serves as a primary key, which means it is used to identify and differentiate one record from another in the database. For example, in the customer's table, each customer record will have a unique ID assigned to it. This ID can be used to retrieve all information related to that particular customer, such as their name, email, contact information, and address. The ID field is also useful for maintaining the relationship between different tables in the database.

ii. Name - The name field in the database is used to store the name of each customer who has registered or sign up on the site. It is a string or text data type that can hold alphanumeric characters and symbols. The name field can be split into separate first name and last name fields, allowing the site to address the customer by their name accurately.

iii. Email - The email address serves as a unique identifier for each customer and allows the site to associate orders and other activities with the correct customer account. This field is used for communication with the user and to send order confirmation and other notifications related to product like order confirmed, order placed.

iv. Password - This field is usually encrypted to ensure the security of the user's account. To ensure the security of customer passwords, we use encryption algorithms to store them in a hashed format. i.e., algorithm for password hashing is the Blowfish algorithm. The Blowfish algorithm is a widely-used symmetric encryption algorithm. It is known for its strong security and high performance, making it a popular choice for password hashing. When a customer registers on the site, their password is first encrypted using the Blowfish algorithm before being stored in the database. To validate the password during login, the entered password is hashed using the same algorithm, and the resulting hash is compared to the hash stored in the database. Purpose of Using the Blowfish algorithm to hash customer passwords helps ensure the security of customer data. It protects against attacks such as password cracking, dictionary attacks, and rainbow table attacks. It also helps ensure that even if the database is compromised, customer passwords remain secure and cannot be easily decrypted.

v. Contact - The phone number or mobile number of the customer. This field is used for communication with the user and to send SMS notifications. When a customer registers on the site, they are required to provide their contact information as part of the registration process.

vi. City - The city where the user resides or where the product is to be delivered. This field is used to calculate the shipping charges and to ensure that the product is delivered to the correct location. This information can be used for various purposes, such as to determine shipping rates, display relevant products or services, and track customer demo graphics.

vii. Address - The complete address of the customer, including the street name, house number, and zip code. This field is used to ensure that the product is delivered to the correct location.

viii. GST Number - The "GST number" field in the database of an site is optional and used to store the Goods and Services Tax (GST) registration number of customers who want to create a business account on site. The customer with a business account gets the privileges of both general customer and business account holder. Having GST number account is considered as business account so our site provide discount on buying product in bulk and the quantity of any product to buy more than 10 for only business account customer. It is also used to generate invoices and other financial documents for the customer.

ix. Business PAN Number - The "Business PAN number" field in the database of an e-com site is used to store the Permanent Account Number (PAN) of customers who have a business account. PAN is a unique identification number assigned by the Indian Income Tax Department to individuals, firms, and companies. When a customer registers for a business account on the site, they required to provide their Business PAN number as part of the registration process. This information is stored in the database. It is also used to verify the customer's business status and eligibility for tax exemptions. It is also used to generate invoices and other financial documents for the customer.

x. Authentication - This field indicates whether the user is authenticated for business account or not.

4.2 Products table

Table 4.2

i. ID: - ID is a unique identifier that is assigned to each product on our e-com site. This ID helps to distinguish each product from others and is useful for keeping track of inventory and orders usually in numerical format. The product ID can be retrieved using SQL queries that select the ID column from the products table in the database.

ii. Title: - The product title is one of the most important pieces of information displayed on an e-com site's product page. It is the name or title of the product that appears on the product page and helps customers understand what the product is. It should include any relevant details such as the brand name and model number.

iii. Price: The price of the product clearly visible on the product page. That will be the regular price. It tells them how much they will need to pay to purchase the product. This makes it easy for customers to find and compare the price of the product with other products. If the product is on sale or has a discount, the discounted price should be clearly displayed on the product page. This can help entice customers to purchase the product. It is typically stored as a decimal or float in the database and can be retrieved using SQL queries that select the price column from the products table.

iv. Brand Name: The brand name of the product is displayed on the product page. This information is particularly important for customers who are loyal to a particular brand or who are looking for a specific type of product. It helps them identify the manufacturer of the product and can influence their purchasing decision based on their familiarity with the brand. It is typically stored as a string in the database and can be retrieved using SQL queries that select the brand name column from the products table.

v. Product Image: A high-quality product image is included on the product page. This image should show the product from different angles and in different contexts so that customers can get a better idea of what they are purchasing. Zooming in and out functionality may also be included to allow the customer to inspect the product in more detail. The product image is a visual representation of the product that appears on the product page. It is typically stored as a file path or URL in the database and can be retrieved using SQL queries that select the image column from the products table.

vi. Product Description: A detailed product description should be included on the product page. This should describe the product's features and specifications like color, storage and any other relevant information that customers need to know before making a purchase. It is typically stored as a string in the database and can be retrieved using SQL queries that select the description column from the products table.

vii. Featured: Featured section on product page where they highlight particular product that indicate mobile, refrigerator, washing machine etc.

viii. Category: The product should be categorized under a specific category. This makes it easier for customers to find the product they are looking for and to browse related products. Our website contains three categories as electronics, grocery and fashion.

4.3 Users issue table

Table 4.3: Users issue table

The user issue table is a component of the database for site that is designed to store information related to customer issues and complaints. The purpose of this table is to track issues that customers may have with the site, its products or services. It includes various factor in table to easily identify issues of customer that are: -

i. Issue ID: A unique identifier for each issue, typically generated automatically by the database system.

ii. User ID: The ID of the user who reported the issue. This links the issue to the user's account information, allowing customer service representatives to quickly access relevant information about the user.

iii. First Name: This field stores the customer's first name. It is typically a text field with a maximum length of 50 characters. The customer's first name is important because it allows customer service representatives to address the customer in a personalized manner, which can help to build rapport and establish trust.

iv. Last Name: This field stores the customer's last name. Like the first name field. The customer's last name is important because it helps to differentiate customers who may have the same first name, and it can also be used to address the customer in a more formal manner.

v. Email Address: This field stores the customer's email address. The email address is one of the most important pieces of customer contact information because it allows customer service representatives to communicate with the customer via email. This can be a convenient and efficient way to update the customer on the status of their issue and to gather any additional information that may be needed to resolve the issue

4.4 Users item table

Table 4.4:Users item table

i. ID: This is a unique identifier for each record in the table. It is often an auto-incremented integer that is automatically assigned by the database.

ii. User id: This field identifies the user who added the item to their cart or made the purchase. It can be linked to the user's profile in the site's user table.

iii. Name: This field contains the user's name. It is often included in the user items table for easy reference.

iv. Email: This field contains the user's email address. It is often included in the user items table for communication purposes.

v. Contact: This field contains the user's contact number. It is often included in the user items table for communication purposes.

vi. City: This field contains the user's city of residence. It can be used to provide location-based recommendations or to calculate shipping costs.

vii. Address1 and address2: These fields contain the user's address details. Address1 is typically used for the proper street address, while address2 can be used for additional details like nearby location, apartment number or building name.

viii. Pin code: This field contains the user's postal code or zip code. It is often included in the user items table for location-based calculations.

ix. State: This field contains the user's state of residence. It can be used to provide location-based recommendations or to calculate shipping costs.

x. Status: This field indicates the status of the user's order. It can have values like "order placed," "shipped," "Delivered," or "cancelled."

xi. OrderTotal: This field contains the total cost of the items in the user's cart or purchase. It includes the cost of the items, shipping charges, taxes, and any other applicable fees.

xii. Time: This field contains the date and time when the user added the item to their cart or made the purchase.

xiii. Payment status: This field indicates the status of the user's payment. It can have values like "Done," "Not done," or "refunded."

4.5 Checkout table

i. User id: A foreign key that references the user table, which stores information about the customer who made the checkout. This column ensures that each checkout is associated with a specific user. This column is a foreign key that references the user table, which stores information about customers. It is used to associate each checkout instance with a specific user. For example, if a user makes a purchase, a new row is created in the checkout table, and the user id of that user is stored in this column. The 'user id' columns would require string input that corresponds to the unique identifier of the respective user and item being checked out. The length of these strings would depend on the data type and length of the identifier being used.

id	user_id	item_id	status	Quantity	Checkout_id
190	23	82	Confirmed	1	37
189	24	46	Confirmed	1	36
188	23	3	Confirmed	1	35
187	23	31	Confirmed	2	35
186	23	31	Confirmed	1	34
185	23	106	Confirmed	1	34
184	23	1	Confirmed	1	34
183	23	32	Confirmed	1	33
182	23	93	Confirmed	3	32
181	23	32	Confirmed	2	32
180	22	70	Confirmed	1	31
178	21	94	Added to cart	1	NULL
177	21	81	Confirmed	2	30
176	21	31	Confirmed	4	30
175	14	105	Added to cart	1	NULL

Table 4.5: Checkout table

ii. Checkout id: The checkout ID can be a number or alphanumeric string, and it is usually generated automatically by the site's checkout system. In some cases, the checkout ID may be left null or blank if the user does not complete the checkout process or if there is an error during the checkout. When a user completes the checkout process and their order is successfully processed, the checkout ID is assigned to the order and stored in the site's database. The checkout ID can then be used to track the status of the order, such as whether it has been shipped or delivered. The checkout ID is also used to associate the order with the user's account. This allows the user to view their order history and track the status of their orders from their account dashboard.

iii. Item_id: When an item is added to the site's database, a new row is created, and a unique item id is assigned to that product. This item id is typically a number and it is used to uniquely identify that item throughout the site. The item id is used in various parts of the site, such as the product pages like electronic page, Grocery page, fashion page where the details of each item are displayed. For example, when a customer clicks on a product to view its details, the item id is used to retrieve the information for that specific item from the database.

iv. Quantity: This column specifies the quantity of the item that was checked out by the user. For example, if a user adds three items to their cart and checks out, a new row is created in the checkout table, and the quantity of that item is set to 3.

v. Status: When a customer adds a product to their cart on an e-commerce site, it means that they have expressed an interest in purchasing the product but have not yet completed the checkout process. Therefore, providing a status update of "added to cart" alone does not give the customer any indication of whether the product is actually available for purchase or not. The "confirmed" status update typically means that the customer's order has been received and is being processed by the seller after successful payment by the user. However, this status does not provide any information on when the order will be shipped or delivered. To provide a better shopping experience for customers, an our site offer additional status updates such as "shipped," and "delivered." This would give customers a better idea of when they can expect to receive their order and would help to build trust and satisfaction with the site. Additionally, providing customers with tracking information for their order can also be helpful in keeping them informed about the status of their purchase. The length of the string would depend on the length of the status description used. Typically, the length of the status string would be relatively short, usually no more than 20 characters.

4.6 Implementation details

The coding for the development of Lifezy e-com site is done using the Apache NetBeans IDE and the database is created using the WAMP server. There is separate coding for each and every webpage present in the website and associated CSS file and scripting file. All the Web pages are connected with each other in order to maintain the flow of ecommerce website.

At the time of sign-up process customer need to provide the password, the entered password is encrypted using Blowfish password encryption algorithm and the hash value is then stored into the database. To validate the password during login, the entered password is hashed using the same algorithm used during the sign-up process to encrypt the password i.e., Blowfish algorithm, and the resulting hash is compared to the hash stored in the database. It is a dynamic website where server-side scripting is done by using PHP and database is created in MySQL.

All the Web pages are created using html5, css3, bootstrap 5.1.1 and JavaScript. To solve the customer issues, we have implemented Chabot in our Lifezy site that is powered by TIDIO - TIDIO is a popular platform for building chatbots for e-commerce sites, offering pre-designed templates that can be customized to suit the needs of a particular business. Here is a detailed explanation of how an e-commerce site chatbot built with TIDIO's template works: Simple mail transfer protocol (SMTP) is used to send the mails like successfully creation of account and order confirmation.

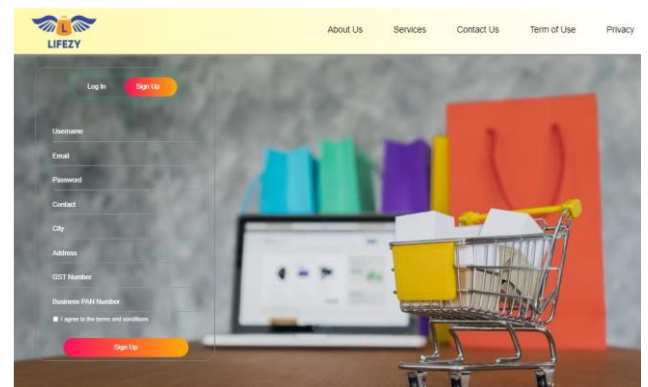## 4.7 System Execution Details

I. Sign-up page

Fig 4.1: Sign-up page

A sign-up page is a webpage designed for new users to register an account on the website. This page typically includes a form that requires the user to fill out fields such as their name, email address, contact details, city, and address. Additionally, the form may include optional fields such as the user's GST number and business PAN number, which are required to create a business account. Failure to provide these numbers will result in the user being treated as a general customer and they will not receive the privileges of a business account .Once the user has provided all the necessary information, the password is encrypted using the Blowfish password encryption algorithm, and the resulting hash value is stored in the website's database for security reasons.
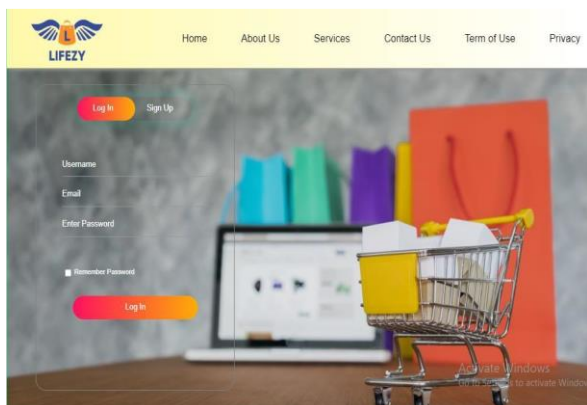
II.   Login Page

Fig 4.1: Login page

The login page is designed for registered users to access their accounts by entering their login credentials, such as their email address, username, and password. To validate the password during login, the password entered by the user is first hashed using the same encryption algorithm used during the sign-up process, which is the Blowfish algorithm. The resulting hash is then compared to the hash value stored in the database. This measure ensures the security of customer data by protecting against various attacks, including password cracking, dictionary attacks, and rainbow table attacks. Using the Blowfish algorithm also helps to ensure that even if the database is compromised, customer passwords remain secure and cannot be easily decrypted.
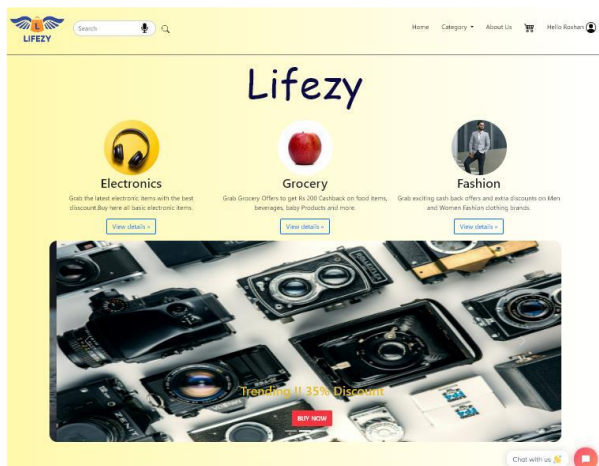
III.   Homepage page

Fig 4.3: Homepage page

The homepage of an e-commerce site is the main gateway for users to browse and interact with the website. It is specifically designed to offer a visually engaging and user-friendly experience while highlighting the various products or services available on the site. In the case of Lifezy, the homepage features a product category section that includes electronics, fashion, and grocery items. Additionally, there is a carousel that showcases the trending products. The homepage also contains a chatbot and various navigational links such as categories, cart, and user profile.If the user has a business account, they will see an additional option labeled "Business" in the header. Clicking on this option will enable the user to purchase products at a discounted rate for their shop.
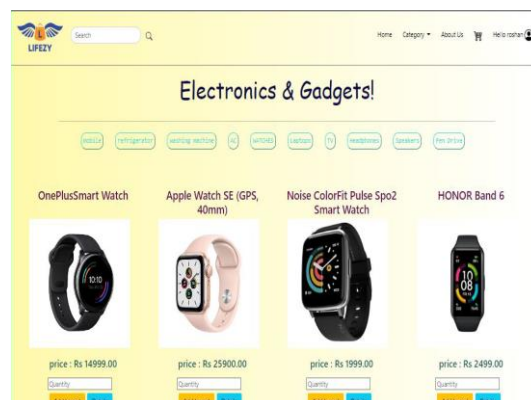
IV.   Product Page

Fig 4.4: Product page

A product page is a crucial part of e-commerce website, as it showcases a specific product and provides detailed information, images, and pricing to entice customers to make a purchase. Typically, a product page consists of the following components:

i.   Product Title: This displays the name of the product.
ii.   Product Image: This is a visual representation of the product.
iii.   Product Description: This section offers an in-depth explanation of the product, highlighting its features, specifications, and benefits.
iv.   Add to Cart Button: This button enables customers to add the product to their shopping cart and proceed to checkout.
v.   Related Products: This section displays other products that are related to the one being viewed, potentially encouraging customers to purchase additional items.

Overall, the primary goal of a product page is to provide customers with all the necessary information to make an informed decision about purchasing the product, as well as to streamline the purchasing process for their convenience.
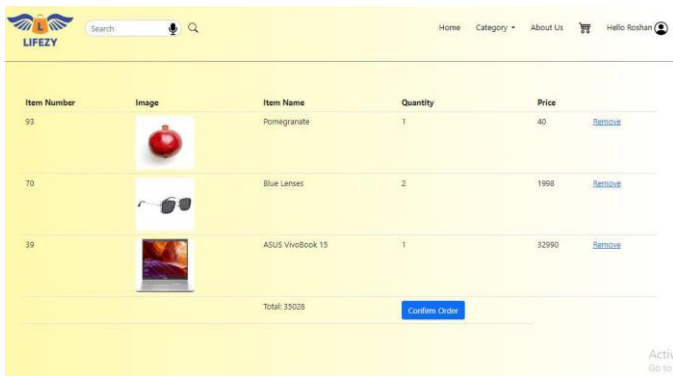
V. Cart Page

Fig 4.5: Cart Page

A cart page is a crucial component of an e-commerce website that allows users to review and confirm their order details before making a purchase. The page typically displays the following information:

i. Item name: The name or title of the product that the user has added to their cart.
ii. Image: This is an image of the item to help the customer easily identify the product they have added to their cart.
iii. Price: The cost of the item, either per unit or for the total quantity ordered.
iv. Quantity: The number of units of the item that the user has added to their cart.
v. ID: A unique identifier for the item, which is often used to keep track of the product in the website's database.
vi. Remove button: A button or link that allows the user to remove the item from their cart.

Additionally, the checkout page typically includes a "Place Order" button that initiates the payment process and finalizes the purchase.
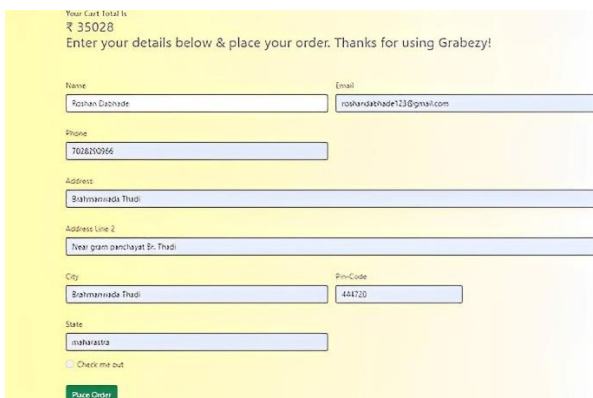
VI. Checkout Page

Fig. 4.6: Checkout Page

A checkout page is an essential part of an e-commerce website that allows customers to finalize their purchases by providing necessary information.
Here is some information about the fields mentioned in Lifezy e-com site:

i. Cart total: This field displays the total amount the customer will be charged for the items in their shopping cart.
ii. Name of customer: This field requires the customer's full name, including their first and last names, which will be used to identify the customer's order.
iii. Email: This field requires the customer's email address, which will be used to send order confirmation and other important notifications.
iv. Phone number: This field requires the customer's phone number, which may be used to contact the customer in case there are any issues with the order.
v. Address: This field requires the customer's shipping address, which should include the street address, city, and country.
vi. State: This field requires the customer's state or province, which is important for shipping purposes, especially within larger countries.
vii. Pin-code: This field requires the customer's postal code, which is necessary for accurate delivery of the order.
viii. Place order button: This button is typically located at the bottom of thecheckout page and is used to finalize the purchase. When clicked, the customer's payment information will be processed and the order will be submitted
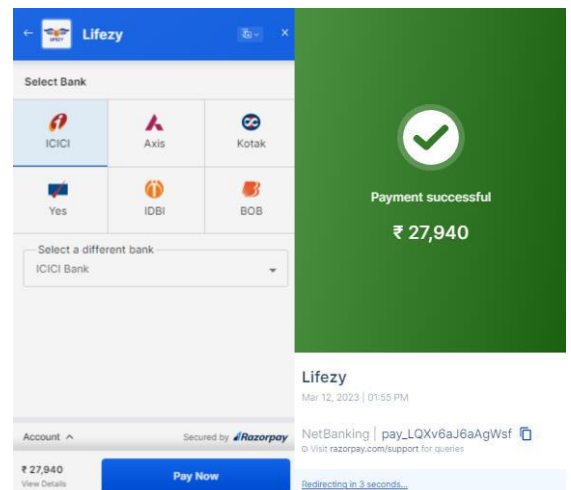
VII. Payment Page

Fig. 4.7: Payment Page

Razorpay is a payment integration system that provides end-to-end security for online payments. It is designed to make payments secure and easy for both businesses and customers. Razorpay offers a range of payment options, including net banking, credit or debit card, wallet, and cash on delivery. With its advanced security features and fraud detection mechanisms, Razorpay ensures that all transactions are safe and secure. The system is designed to be easy to use, with a user-friendly interface that simplifies the payment process for customers. Overall, Razorpay is a reliable and secure payment gateway that makes it easy for businesses to accept online payments from customers.
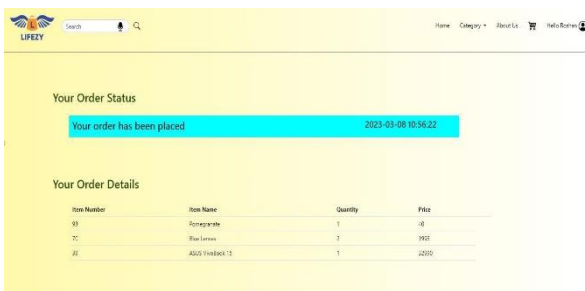
VIII.   Order Tracking Page

Fig. 4.8: Order Tracking Page

An order tracking page is a webpage that allows customers to check the status of their orders. To access the tracking information, customers typically need to provide a form of identification such as a transaction ID, which is a unique identifier generated when the customer places an order. The transaction ID is used to track the progress of the order through various stages, including payment processing, shipping, and delivery. Once a customer enters their transaction ID into the order tracking page, they can view the current status of their order, such as whether it is being processed, shipped, or delivered, along with the estimated delivery date and any relevant tracking numbers or shipping information.
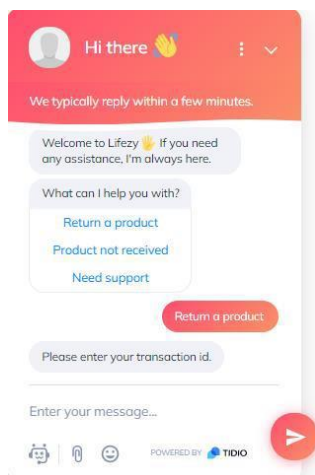
IX.   Chatbot

Fig. 4.9: Chatbot

Chatbot is a computer program that simulates human conversation, allowing customers to interact with our site and receive assistance, guidance, and support with their shopping experience.

To solve the customer issues, we have implemented Chabot in our Lifezy site that is powered by TIDIO - TIDIO is a popular platform for building chatbots for e-commerce sites, offering pre-designed templates that can be customized to suit the needs of a particular business. Here is a detailed explanation of how an e-commerce site chatbot built with TIDIO's template works:

The TIDIO template is a pre-designed chatbot that can be easily customized to match the branding and needs of an e-commerce site. The template includes a variety of pre-built conversational flows, response messages, and user prompts that can be edited, deleted, or added to by the site owner or developer.

4.8 How the Chatbot Works:

Once the TIDIO template has been customized, the e-commerce site chatbot is ready to help customers with their shopping experience. Customers can interact with the chatbot by typing in a question or selecting a response from a list of pre-defined options.

The chatbot uses natural language processing (NLP) and machine learning algorithms to understand customer queries and respond with the most appropriate answer or action. For example, if a customer asks the chatbot to " Return a product" then chatbot will respond to " please enter your transaction id" also if customer want to contact with care or need support related product customer can tell query to chatbot and it will be solved within a minute.

5.   Results and Results Analysis

All of the web pages on Lifezy e-com site are functioning properly. If a user enters an incorrect password during the login process, they are not granted entry into the system, indicating that the Blowfish algorithm is working as intended. The product catalog is well-organized and offers a wide range of products with clear and concise descriptions and high-quality images. The search functionality, which includes manual search and voice search, is accurate and intuitive, enabling users to quickly and easily find products.

When a user adds a product to their cart, the correct products are added with the appropriate quantity and price. The payment integration is working correctly, and after a successful payment, the user receives an order confirmation email containing the transaction ID necessary to track the order. Below is an image of the email received by the Lifezy e-com site customer.

Fig. 5:Mailing Service

6. CONCLUSIONS

We have successfully created a reliable and secure e-commerce platform that caters to the needs of both general customers and shop owners. Our emphasis on security measures such as the implementation of the blowfish algorithm for password hashing and the use of Razorpay payment integration has made our website trustworthy for online transactions. We have also focused on creating an efficient and advanced database to ensure the smooth running of all dynamic functionalities

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